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National Health Education Standards

HEALTH EDUCATION STANDARD 1 – Students will comprehend concepts related to health promotion and disease prevention to enhance health.

Rationale

The acquisition of basic health concepts and functional health knowledge provides a foundation for promoting health-enhancing behaviors among youth. This standard includes essential concepts that are based on established health behavior theories and models. Concepts that focus on both health promotion and risk reduction are included in the performance indicators.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
1.2.1. identify that healthy behaviors impact personal health.	1.5.1 describe the relationship between healthy behaviors and personal health.	1.8.1. analyze the relationship between healthy behaviors and personal health.	1.12.1 predict how healthy behaviors can impact health status.
1.2.2. recognize that there are multiple dimensions of health.	1.5.2 identify examples of emotional, intellectual, physical, and social health.	1.8.2. describe the inter-relationship of emotional, intellectual, physical, and social health in adolescence.	1.12.2. describe the interrelationships of emotional, intellectual, physical, and social health.
1.2.3. describe ways to prevent communicable diseases.	1.5.3. describe ways in which a safe and healthy school and community environment can promote personal health.	1.8.3. analyze how the environment impacts personal health.	1.12.3. analyze how environment and personal health are interrelated.
		1.8.4. describe how family history can impact personal health.	1.12.4. analyze how genetics and family history can impact personal health.
1.2.4. list ways to prevent common childhood injuries.	1.5.4. describe ways to prevent common childhood injuries and health problems.	1.8.5. describe ways to reduce or prevent injuries and other adolescent health problems.	1.12.5. propose ways to reduce or prevent injuries and health problems.
1.2.5. describe why it is important to seek health care.	1.5.4 describe when it is important to seek health care.	1.8.6. explain how appropriate health care can promote personal health.	1.12.6. analyze the relationship between access to health care and health status.
		1.8.7. describe the benefits of and barriers to practicing healthy behaviors.	1.12.7. compare and contrast the benefits of and barriers to practicing a variety of healthy behaviors.
		1.8.8. examine the	1.12.8. analyze

		likelihood of injury or illness if engaging in unhealthy behaviors.	personal susceptibility to injury, illness or death if engaging in unhealthy behaviors.
		1.8.9. examine the potential seriousness of injury or illness if engaging in unhealthy behaviors.	1.12.9. analyze the potential severity of injury or illness if engaging in unhealthy behaviors.

HEALTH EDUCATION STANDARD 2 – Students will analyze the influence of family, peers, culture, media, technology and other factors on health behaviors.

Rationale

Health is impacted by a variety of positive and negative influences within society. This standard focuses on identifying and understanding the diverse internal and external factors that influence health practices and behaviors among youth including personal values, beliefs and perceived norms.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
2.2.1 identify how the family influences personal health practices and behaviors.	2.5.1 describe how family influences personal health practices and behaviors.	2.8.1 examine how the family influences the health of adolescents.	2.12.1 analyze how family influences the health of individuals.
	2.5.2. identify the influence of culture on health practices and behaviors	2.8.2. describe the influence of culture on health beliefs, practices and behaviors.	2.12.2. analyze how culture supports and challenges health beliefs, practices and behaviors.
	2.5.3. identify how peers can influence healthy and unhealthy behaviors.	2.8.3. describe how peers influence healthy and unhealthy behaviors.	2.12.3. analyze how peers influence healthy and unhealthy behaviors.
2.2.2. identify what the school can do to support personal health practices and behaviors.	2.5.4. describe how the school and community can support personal health practices and behaviors.	2.8.4. analyze how the school and community can impact personal health practices and behaviors.	2.12.4. evaluate how the school and community can impact personal health practice and behaviors.
2.2.3. describe how the media can influence health behaviors.	2.5.5. explain how media influences thoughts, feelings, and health behaviors.	2.8.5. analyze how messages from media influence health behaviors.	2.12.5. evaluate the effect of media on personal and family health.
	2.5.6. describe ways technology can influence personal health.	2.8.6. analyze the influence of technology on personal and family health.	2.12.6. evaluate the impact of technology on personal, family and community health.
		2.8.7. explain how the perceptions of norms influence healthy and unhealthy behaviors.	2.12.7. analyze how the perceptions of norms influence healthy and unhealthy behaviors.
		2.8.8. explain the influence of personal values and beliefs on individual health practices and	2.12.8. analyze the influence of personal values and beliefs on individual health practices and

		behaviors.	behaviors.
		2.8.9. describe how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.	2.12.9. analyze how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
		2.8.10. explain how school and public health policies can influence health promotion and disease prevention.	2.12.10. analyze how public health policies and government regulations can influence health promotion and disease prevention.

HEALTH EDUCATION STANDARD 3 – Students will demonstrate the ability to access valid information and products and services to enhance health.

Rationale

Accessing valid health information and health-promoting products and services is critical in the prevention, early detection, and treatment of health problems. This standard focuses on how to identify and access valid health resources and to reject unproven sources. Applying the skills of analysis, comparison and evaluation of health resources empowers students to achieve health literacy.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
3.2.1. identify trusted adults and professionals who can help promote health.	3.5.1. identify characteristics of valid health information, products and services.	3.8.1. analyze the validity of health information, products and services.	3.12.1. evaluate the validity of health information, products and services.
3.2.2. identify ways to locate school and community health helpers.	3.5.2. locate resources from home, school and community that provide valid health information.	3.8.2. access valid health information from home, school, and community.	3.12.2. utilize resources from home, school and community that provide valid health information.
		3.8.3. determine the accessibility of products that enhance health.	3.12.3. determine the accessibility of products and services that enhance health.
		3.8.4. describe situations that may require professional health services.	3.12.4. determine when professional health services may be required.
		3.8.5. locate valid and reliable health products and services.	3.12.5. access valid and reliable health products and services.

HEALTH EDUCATION STANDARD 4 – Students will demonstrate the ability to use interpersonal communication skills to enhance health and avoid or reduce health risks.

Rationale

Effective communication enhances personal, family, and community health. This standard focuses on how responsible individuals use verbal and non-verbal skills to develop and maintain healthy personal relationships. The ability to organize and to convey information and feelings is the basis for strengthening interpersonal interactions and reducing or avoiding conflict.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
4.2.1. demonstrate healthy ways to express needs, wants and feelings.	4.5.1. demonstrate effective verbal and non-verbal communication skills to enhance health.	4.8.1. apply effective verbal and nonverbal communication skills to enhance health.	4.12.1. utilize skills for communicating effectively with family, peers, and others to enhance health.
4.2.2. demonstrate listening skills to enhance health.	4.5.2. demonstrate refusal skills to avoid or reduce health risks.	4.8.2. demonstrate refusal and negotiation skills to avoid or reduce health risks.	4.12.2. demonstrate refusal, negotiation, and collaboration skills to enhance health and avoid or reduce health risks.
4.2.3. demonstrate ways to respond when in an unwanted, threatening or dangerous situation.	4.5.3. demonstrate non-violent strategies to manage or resolve conflict.	4.8.3. demonstrate effective conflict management or resolution strategies.	4.12.3. demonstrate strategies to prevent, manage or resolve interpersonal conflicts without harming self or others.
4.2.4. demonstrate ways to tell a trusted adult if threatened or harmed.	4.5.4. demonstrate how to ask for assistance to enhance personal health.	4.8.4. demonstrate how to ask for assistance to enhance the health of self and others.	4.12.4. demonstrate how to ask for and offer assistance to enhance the health of self and others.

HEALTH EDUCATION STANDARD 5 – Students will demonstrate the ability to use decision-making skills to enhance health.

Rationale

Decision-making skills are needed in order to identify, implement and sustain health-enhancing behaviors. This standard includes the essential steps needed to make healthy decisions as prescribed in the performance indicators. When applied to health issues, the decision-making process enables individuals to collaborate with others to improve quality of life

Performance Indicators

Pre-K-2	3-5	6-8	9-12
		5.8.1. identify circumstances that can help or hinder healthy decision making.	5.12.1. examine barriers that can hinder healthy decision making.
5.2.1. identify situations when a health-related decision is needed.	5.5.1. identify health-related situations that might require a thoughtful decision.	5.8.2. determine when health-related situations require the application of a thoughtful decision-making process.	5.12.2. determine the value of applying a thoughtful decision-making process in health related situations.
5.2.2. differentiate between situations when a health-related decision can be made individually or when assistance is needed.	5.5.2. analyze when assistance is needed when making a health-related decision.	5.8.3. distinguish when individual or collaborative decision making is appropriate.	5.12.3. justify when individual or collaborative decision making is appropriate.
	5.5.3. list healthy options to health-related issues or problems.	5.8.4. distinguish between healthy and unhealthy alternatives to health-related issues or problems.	5.12.4. generate alternatives to health-related issues or problems.
	5.5.4. predict the potential outcomes of each option when making a health-related decision.	5.8.5. predict the potential short-term impact of each alternative on self and others.	5.12.5. predict the potential short and long-term impact of each alternative on self and others.
	5.5.5. choose a healthy option when making a decision.	5.8.6. choose healthy alternatives over unhealthy alternatives when making a decision.	5.12.6. defend the healthy choice when making decisions.
	5.5.6. describe the outcomes of a health-related decision.	5.8.7. analyze the outcomes of a health-related decision.	5.12.7. evaluate the effectiveness of health-related decisions.

HEALTH EDUCATION STANDARD 6 – Students will demonstrate the ability to use goal-setting skills to enhance health.

Rationale

Goal-setting skills are essential to help students identify, adopt and maintain healthy behaviors. This standard includes the critical steps needed to achieve both short-term and long-term health goals. These skills make it possible for individuals to have aspirations and plans for the future.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
		6.8.1. assess personal health practices.	6.12.1. assess personal health practices and overall health status.
6.2.1. identify a short-term personal health goal and take action toward achieving the goal.	6.5.1. set a personal health goal and track progress toward its achievement.	6.8.2. develop a goal to adopt, maintain, or improve a personal health practice.	6.12.2. develop a plan to attain a personal health goal that addresses strengths, needs, and risks.
6.2.2. identify who can help when assistance is needed to achieve a personal health goal.	6.5.2. identify resources to assist in achieving a personal health goal.	6.8.3. apply strategies and skills needed to attain a personal health goal.	6.12.3. implement strategies and monitor progress in achieving a personal health goal.
	.	6.8.4. describe how personal health goals can vary with changing abilities, priorities, and responsibilities.	6.12.4. formulate an effective long-term personal health plan.

HEALTH EDUCATION STANDARD 7 – Students will demonstrate the ability to practice health-enhancing behaviors and avoid or reduce health risks.

Rationale

Research confirms that practicing health enhancing behaviors can contribute to a positive quality of life. In addition, many diseases and injuries can be prevented by reducing harmful and risk taking behaviors. This standard promotes accepting personal responsibility for health and encourages the practice of healthy behaviors.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
	7.5.1. identify responsible personal health behaviors.	7.8.1. explain the importance of assuming responsibility for personal health behaviors.	7.12.1. analyze the role of individual responsibility for enhancing health.
7.2.1. demonstrate healthy practices and behaviors to maintain or improve personal health.	7.5.2. demonstrate a variety of healthy practices and behaviors to maintain or improve personal health.	7.8.2. demonstrate healthy practices and behaviors that will maintain or improve the health of self and others.	7.12.2. demonstrate a variety of healthy practices and behaviors that will maintain or improve the health of self and others.
7.2.2. demonstrate behaviors to avoid or reduce health risks.	7.5.3. demonstrate a variety of behaviors to avoid or reduce health risks.	7.8.3. demonstrate behaviors to avoid or reduce health risks to self and others.	7.12.3. demonstrate a variety of behaviors to avoid or reduce health risks to self and others.

HEALTH EDUCATION STANDARD 8 – Students will demonstrate the ability to advocate for personal, family and community health.

Rationale

Advocacy skills help students promote healthy norms and healthy behaviors. This standard helps students develop important skills to target their health enhancing messages and to encourage others to adopt healthy behaviors.

Performance Indicators

Pre-K-2	3-5	6-8	9-12
8.2.1. make requests to promote personal health.	8.5.1. express opinions and give accurate information about health issues.	8.8.1. state a health enhancing position on a topic and support it with accurate information.	8.12.1. utilize accurate peer and societal norms to formulate a health-enhancing message.
8.2.2. encourage peers to make positive health choices.	8.5.2. encourage others to make positive health choices.	8.8.2. demonstrate how to influence and support others to make positive health choices.	8.12.2. demonstrate how to influence and support others to make positive health choices.
		8.8.3. work cooperatively to advocate for healthy individuals, families, and schools.	8.12.3. work cooperatively as an advocate for improving personal, family and community health.
		8.8.4. identify ways that health messages and communication techniques can be altered for different audiences.	8.12.4. adapt health messages and communication techniques to a specific target audience.

“Cited from Pre-publication document of National Health Education Standards, PreK-12, American Cancer Society. December 2005 – August 2006”

Academic Content Alignment Chart

Lessons	English Language Arts	Science	Mathematics	Social Studies	Technology
1-Introduction to Health	X				
2-Community Physical Activity Options	X				
3-Healthy Community	X				
4-Introduction to Media Influence	X				
5-Advertising Food & Drink	X				
6-Personal Goal Setting	X				
7-Personal Image	X				
8-Time Management	X		X		
9-Review Lesson 1	X				
10-Food Groups and Food Guide Pyramid	X		X		
11-Growing Essentials	X	X	X		
12-Reading Nutrition Labels	X		X		
13-Fruits and Vegetables: Inside and Out	X	X			
14-5 to 9 a Day			X		
15-The Importance of Breakfast	X				
16-Snack Math			X		
17-Food is Our Energy Source & More	X			X	X
18-The Importance of Water	X	X			X
19-To Drink or Not to Drink	X	X	X		
20-Making Healthy Choices in Restaurants	X		X		X
21-Review Lesson 2	X				
22-Active Every Day	X		X		
23-Cardiovascular Health	X	X	X		
24-Stretching	X	X			
25-Review Lesson 3	X				
26-Healthy Alternatives to Smoking	X	X			
27-Talking to Peers about Tobacco	X				
28-Health Risks and Costs of Tobacco Use	X	X	X		
29-Secondhand Smoke	X			X	
30-Review Lesson 4	X				
31-Conclusion	X				

Alignment Chart

Standards, Benchmarks, & Indicators	General Health Lessons								
English Language Arts	1	2	3	4	5	6	7	8	9
Reading Process: Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies Standard			X	X	X		X	X	X
Writing Process Standard	X	X	X	X					
Writing Application Standard	X	X	X	X		X	X	X	X
Writing Conventions Standard	X	X	X	X	X	X	X	X	X
Research Standard		X	X		X				
Communications: Oral and Visual Standard	X	X		X	X		X		
Mathematics									
Number, Number Sense and Operations Standard								X	

Standards, Benchmarks, & Indicators	Physical Activity Lessons			
English Language Arts	22	23	24	25
Writing Process Standard	X			X
Writing Application Standard	X	X	X	X
Writing Conventions Standard	X	X	X	X
Communications: Oral and Visual Standard		X		
Science				
Life Sciences		X	X	
Scientific Inquiry		X		
Scientific Ways of Knowing		X		
Mathematics				
Number, Number Sense and Operations Standard		X		
Data Analysis and Probability Standard	X	X		

Alignment Chart

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Alignment Chart

Standards, Benchmarks, & Indicators	Tobacco Lessons					
	26	27	28	29	30	31
English Language Arts						
Reading Process: Concepts of Print, Comprehension Strategies and Self-Monitoring Strategies Standard			X			
Writing Process Standard					X	X
Writing Application Standard	X	X	X	X	X	X
Writing Conventions Standard	X		X	X	X	X
Research Standard				X		
Communications: Oral and Visual Standard	X	X		X	X	X
Science						
Life Sciences	X					
Scientific Inquiry			X			
Scientific Ways of Knowing			X			
Mathematics						
Number, Number Sense and Operations Standard			X			
Social Studies						
Government				X		
Citizenship Rights and Responsibilities				X		
Social Studies Skills and Methods				X		
Technology						
Technology for Productivity Applications					X	

Unit 1: General Health

Lesson 1: Introduction to Health

Established Goals:

National Health Education Standards

1.5.2 Identify examples of emotional, intellectual, physical and social health

5.5.3 List healthy options to health-related issues or problems

7.5.1 Identify responsible personal health behaviors

7.5.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health

7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD

Ohio Indicators (Grade 4):

English Language Arts: Writing Processes: 1& 4, Writing Applications: 5,
Communication: Oral and Visual: 8 a-f

Understandings:

Students will understand...

- Health is not simply the absence of illness or disease.
- Emotional (mental), physical and social health are defined differently.
- There is a cause and effect relationship between our actions and our health.

Students will be able to...

- Map out ideas related to health.
- Define health.
- Distinguish between actions or qualities that are related to health and those that are not directly related to health.
- Determine what actions they can take to be healthy

Essential Questions:

- Who do students model when it comes to their health behavior?
- How do family and culture influence health behavior?

Learning Plan:

Background:

Definitions for the teacher:

Physical Health- the absence of disease and disability; functioning adequately from the perspective of physical and physiological abilities; the biological integrity of the individual

Mental Health- May include emotional health; may make explicit reference to intellectual capabilities; the subjective sense of well-being

Social Health- the ability to interact effectively with other people and the social environment; satisfying interpersonal relationships; role fulfillment

Definition for the students:

Health- when a person is in a state of complete physical (bodily), mental (the mind and feelings) and social (interactions with other people) well-being. Health is not simply the absence of illness or disease.

Discussion:

Create a concept map to define health: See what students already know about health. Write down all suggestions and/or comments made by the students. Strive to touch on all areas of health (physical, mental, social). Students should give examples of actions and feelings (moods) that may relate to health. Refer to the list of prompts and concepts if the students have difficulty brainstorming.

Health concepts and prompts for the concept map:

Prompts:

1. What does a healthy person do?
2. How does a healthy person feel?
3. What **doesn't** a healthy person do?
4. What do healthy people eat?

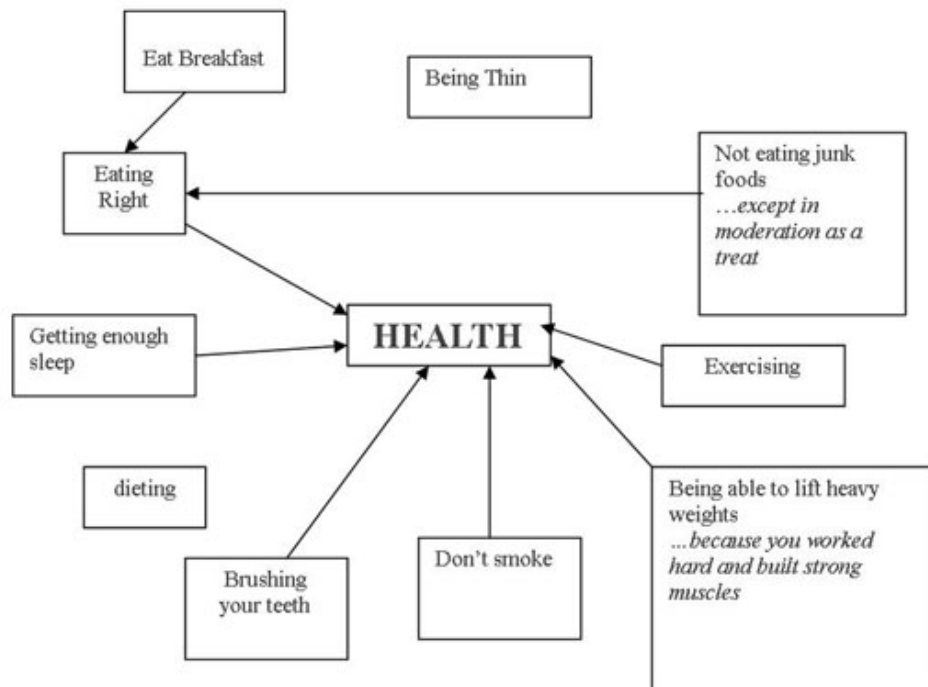
Concepts:

1. Don't smoke
2. Eat foods with many nutrients
3. Limit "junk foods" or foods with minimal nutritional value. It is okay to have special treats every once in a while.
4. Able to focus on schoolwork and give their best effort to everything that they do
5. Drink water
6. Be physically active every day
7. Feel energetic
8. Get plenty of rest (10 to 12 hours per night is recommended for children ages 5 to 12)
9. Eat 5 to 9 servings of fruits and vegetables
10. Limit drinking pop
11. Good Hygiene (bathing/showering/brushing your teeth)

12. Have a good self-image/have high self-esteem

Discuss Key Questions: Were all the students' responses directly related to health? Are there any misconceptions that need to be addressed? (*Students should not associate health with weight or being thin. At this age, it is inappropriate for students to consider weight as a factor of health.*) What concepts need to be clarified? Example: A student might say: "being able to lift heavy weights." It is important that students recognize that they can lift heavy weights because they have built strong muscles. So, clarify his or her statement by saying: "You are able to lift heavy weights because you worked hard to develop strong muscles." Draw lines from the concepts/actions to the center for those that relate directly to health. See the sample concept map for more clarification.

Sample Concept Map



Learning Activity: Stairway to Health

Build a “Stairway to Health.” Students will take the answers given in the concept map and create a Stairway to Health. Have each student choose five **actions** they think are the most important for reaching the top stair (the goal: Health). You may want to pre-cut steps for the stairway. You or the student will need rectangles that get progressively longer (or shorter). Be sure each student places the word health along with a definition of health at the top of the stairway. The definition should be one that you provide or that the class has determined collectively to ensure that the students have grasped the concept of health. To make this activity more creative and enjoyable, have the students cut out pictures from magazines or old newspapers of people doing healthy things (drinking milk, riding a bike, etc). They can glue the pictures around their stairway. The students can then present their stairway to the class. Have each student discuss why they think their pictures and concepts are healthy. See the sample stairway for more assistance.

Materials needed for the Stairway to Health:

1. Construction paper (colored)
2. Markers
3. Glue
4. Scissors
5. Old magazines, newspapers, or other materials with pictures that students can cut and use
6. Poster board or large sheet of construction paper

Sample Stairway to Health



Health

When a person is in a state of complete physical (bodily), mental (the mind and feelings), and social (interactions with other people) well-being and is not just the absence of sickness or disease.



Assessment Evidence:

Journal Entry:

Now that the students have defined health, they should be able to write a detailed journal entry about their own health and health behaviors. The journal entry should include the following explanations:

- What actions do you take to be healthy?
- Which of your other actions would be considered unhealthy?
- How healthy do you feel? Are the people in your family healthy?
- How do you define “health” or “healthy” in your own words?
- Do you have a role model when it comes to healthy (or unhealthy) behavior? (Mom, dad, brother, sister, friend)

Students should include examples from physical, mental (emotional) and social health. They should jot down activities that they do on a daily or regular basis to help them remember what they do that is healthy or unhealthy. They can also refer to their concept map. The journal entry, when completed, should be kept in a folder or notebook, as it will be the first entry in a series.

Lesson 2: Community Physical Activity Options

Established Goals:

National Health Education Standards

1.5.3 Describe ways in which a safe and healthy school and community can promote personal health practices and behaviors

2.5.4 Describe how the school and community can support personal health practices and behaviors

3.5.2 Locate resources from home, school, and community that provide health information

4.5.4 Demonstrate how to ask for assistance to enhance personal health

6.5.2 Identify resources to assist in achieving a personal health goal

8.5.1 Express opinions and give accurate information about health issues

8.5.2 Encourage others to make positive health choices

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Writing Applications Standard: D, Research Standard: ABCD

Ohio Indicators (Grade 4):

English Language Arts: Writing Processes: Publishing 16, Writing Applications: 3,4 & 5; Research: 1,2 & 3; Communication: Oral and Visual, 8 (a-f)

Understandings:

Students will understand...

- There are a variety of places in their community where they can be physically active.
- Although some activity locations cost money, there is always at least one place where they can be active at no cost.

Students will be able to...

- Contact a community organization (via letter or phone call) in order to obtain information
- Present information to other people
- Conduct research and summarize research results

Essential Questions:

- What barriers exist between the student and his/her participation in physical activity in the community?
- How do I find out where I can be physically active?

Learning Plan:

Background:

Regardless of where you live, there are places for your family to be active. You and your family can be active practically anywhere. The sidewalk in front of your home provides a good place for physical activity, but you can also venture far away to be active. You could go skiing as a family. There are always going to be options that are available at no cost and options that will cost money. Depending on the area in which you teach, your students will have different barriers to accessing safe and affordable places to be physically active. Some students may have no barriers at all, while others may not even be able to safely play in their yard or may not have a sidewalk. In all cases, it is important for students to research the options available to them. While some places, like the YMCA, may charge money, they also offer scholarship programs for low-income families. There are also community centers that sometimes offer services at no charge.

Discussion:

Begin with a group discussion regarding places in the community where students can be physically active. There are locations that are free (hiking trails, bike paths, parks) and community centers, facilities or activities that cost money (swimming pools, sports leagues, dance studios). A list is provided for more ideas (see *Additional Resources*). Write down all the suggestions made by the students. Be sure to include schools as locations where students can be active at no charge.

Once the students have come up with a sufficient list, assign one location to each student or pair of students. This lesson will be divided into three parts:

Learning Activity: Research

After they have their assigned location, students will begin their research. They should use phone books, local parks and recreation newsletters, the internet, the school library and any other resources that you have collected for them. You may want to locate print materials for the students ahead of time. The research may be conducted in class or as homework, depending on the amount of time and home resources available. Students should obtain the following information:

- Facility location, telephone number and website (if applicable)
- Activities that are offered for their age group
- Costs (if any)
- Event/promotional schedule
- They should make a request to have materials sent to them (flyers, brochures, newsletters)

Learning Activity: Compose a Business Letter

In order to obtain the above information, students should compose a business letter. This letter should be in correct business letter format. Students should have their letters approved before they are mailed out. (See sample letter). They should make a first draft and submit it to a classmate to be peer edited. Once a second draft has been composed, both drafts should be turned into the teacher. The final draft should be mailed.

Sample Business Letter

35 E. Gay Street, Suite 509
Columbus, Ohio 43215

6 September 2006

Bradley Community Center
350 York Avenue
Bradley, Ohio 12345

Dear Sir or Madam:

My 4th grade class is creating a resource guide that includes all the places where we can be physically active in our community. I have chosen to find out about the Bradley Community Center. I would like to know what activities your facility offers and how much each activity or service costs. Please include activities that are free and sports leagues or camps that the community center provides.

I need to have all of the brochures and flyers that you have available. If your brochure does not have your telephone number or website listed, please include them in your response. I would also like an event schedule.

Thank you for helping my class stay physically active.

Sincerely,

Nolan Smith

Learning Activity: Creating a Resource Guide:

Step 1: While students are waiting for a response to their letters, they should design the layout for the Resource Guide. Each student's page can have a different layout.

Step 2: A cover can be designed together as a class, or each student can draw a cover and the class can vote on which one to use as the Official Resource Guide cover.

Step 3: Once students receive their responses, have them create an entry page for their organization. There may be students who do not receive a response to their letter. Those students who do not receive a response can create an entry page for another organization using information readily available from other sources (the internet, talking to someone on the phone, etc.).

Step 4: Assemble the entry pages into a binder or laminate and bind them into a book format. Make sure that all brochures, flyers and newsletters are included as well. If you have the resources, it is best to make sure that each student receives a photocopy of the resource guide to take home to their parents or guardians. This will help promote physical activity within families.

Step 5: Students should give a brief presentation (approximately 2 minutes) about their community location activity. They will summarize how their research process was carried out, what they learned and whether or not they recommend their location/activity.

Bradley Community Center

Where having fun is just the beginning!



The Bradley Community Center
350 York Avenue
Bradley, Ohio 12345
(321) 555-8786
www.bradleycommunity.org

Youth Activities Offered at the Bradley Community Center

- Basketball (team and open gym)
- Swimming (open swimming and swim lessons)
- Summer Camp
- Ballet
- Fit 4 Life Kids
- Baseball league
- Family fun days

Membership fees

- Family memberships are offered on a sliding scale fee based on income. Memberships are all-inclusive. There is no additional charge for any activities listed above.
- Bradley Community residents can participate in all activities for a small fee if they do not have a membership.

The hours of operation for The Bradley Community Center are:

7:00am-9:00pm Monday-Friday
8:00am-8:00pm Saturday
12pm-5pm Sunday

For more information, contact Laura Quinn at (321) 555-8789

Assessment Evidence:

The Business Letter

Resource Guide entry page

Journal Entry:

The students will write a journal entry describing their research experience and reflecting on the information that they learned by putting the book together. Students should answer the following questions in their entry:

- What was the hardest part about creating the Resource Guide?
- Was it difficult to find information on your location? Explain.
- Did you learn about places you were not familiar with? What were those places?
- What did this activity make you realize about your community in connection to physical activity? (Are there many places and activities? Are there a lot of options that are free of charge? Do a lot of places charge the participants?)
- Explain how you will encourage your family to use the information in the Resource Guide.

Additional Resources:

Places for Students to be Physically Active

- YMCA
- Parks
- Water Parks
- Swimming Pools
- Hiking Trails
- Bike Paths
- Dance Studios
- Martial Arts Studios
- Ice skating and roller skating rinks
- Ski lodges
- Sports leagues
- Summer camps
- Community Centers
- School playground/fields

See the events calendar for more information on upcoming events!

Lesson 3: Healthy Community

Established Goals:	
<u>National Health Education Standards</u> 1.5.1 Describe the relationship between healthy behaviors and personal health 1.5.3 Describe ways in which a safe and healthy school and community environment can promote personal health 5.5.1 Identify health-related situations that might require a thoughtful decision 5.5.5 Choose a healthy option when making a health related decision 7.5.2 Demonstrate a variety of health practices and behaviors to maintain or improve health <u>Ohio Benchmarks (3-4 Program):</u> <i>English Language Arts:</i> Writing Conventions Standard: ABCD <u>Ohio Indicators (Grade 4):</u> <i>English Language Arts:</i> Reading Applications: 5, Writing Process: 4, Writing Applications: 5, Research (if the technology extension is used): 5	
Understandings:	
<i>Students will understand...</i> <ul style="list-style-type: none">•A variety of components contribute to a health community.•Healthy foods are not always found at the closest store or restaurant.•Every community has something good to offer.	<i>Students will be able to...</i> <ul style="list-style-type: none">•Determine the best place to buy healthy foods, particularly fruits and vegetables, and where to be active.•Make a map of their community and a model community.•Determine unsafe areas of the community (if applicable).•Use the computer to assist them in making a map for both drawing and research. If the technology extension is used*
Essential Questions:	
<ul style="list-style-type: none">•How familiar is the student with his or her community?•What essential resources are needed in a community? Do these exist in the student's community?	

Learning Plan:

Background:

A community's health status can be determined in part by the physical community itself. A community can be a group of people with something in common or people who share a common interest. For the purposes of this lesson, a community will be defined as **the city or area in which we live**. Depending on where you teach, your students may be at an advantage because of their community. There may be several large, clean supermarkets nearby or plenty of places to be physically active (Parks, fields, sidewalks, recreation centers, etc.) Other students may only have access to convenience stores, fast food restaurants, or other facilities that are less likely to provide nutrient-rich foods. The basic understanding should be that no community is perfect, yet every community has something to offer.

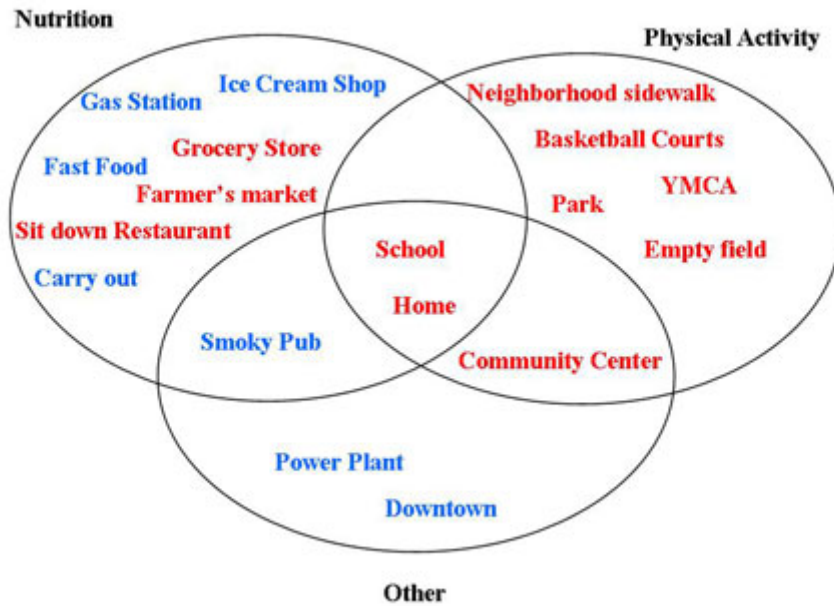
Another reason for this lesson is to encourage students to find out where they can buy and eat healthy foods and be physically active. As the lessons in this curriculum progress, students will learn much more about the importance of nutrition, physical activity and not smoking or exposing themselves to second-hand smoke. If you have completed the 'Community Physical Activity Options' lesson, your students should be very familiar with places in their community to be physically active.

Discussion:

Ask students to define 'community' in their own words. Make sure that the students come to a definition similar to the one given in the background. After students understand the definition of 'community,' they should be asked to name things in their community that are related to their health or that affect their health. Use the chalkboard or a transparency to make categories for their ideas. The students' responses should fit into the following categories: *nutrition*, *physical activity* or "*other*." The "*other*" category may include places where they are exposed to second-hand smoke, school (where they interact with others, affecting their social health), and areas that are unsafe and should be avoided. The other category can also include places where they feel safe and where they can make healthy choices. For instance, school may also be placed under physical activity because they can be active during recess or physical education, and they can come back after school to play on the playground. Use a Venn diagram to show students that some categories will overlap.

When a variety of places have been named discuss each response. Star the places that positively affect one's health. For instance, star all the places where they can purchase fresh fruits and vegetables, eat balanced meals, be physically active, maintain healthy relationships, etc. The *positive* places will be coded on the map in red. The rest, the *places to avoid*, will be coded in blue on the map. See the **sample Venn diagram** for more information.

Sample Venn diagram



Learning Activity: Community Map

The students will then create a map of the community.*Each student will need one piece of graph paper as well as a red and blue marker or crayon. At the top of the paper, each student should make a key and a compass. The key should include the following items:

- A red line = positive places
- blue line = places to avoid
- 1 graph square = 1 block

Map out all the places that the students listed. Make sure that the students' school*is on the map. All of the places the class noted as *positive* should be outlined in red. The *places to avoid* should be outlined in blue.

For this activity, the community should describe the students' neighborhood or a section of their city/town. Students will most likely need assistance with this activity. Students may need to work in groups

* Some students may live very far from their school. If this is the case, they can eliminate their school to make this activity easier.

After the students have completed the maps of their community, discuss the following:

1. What makes your community great?
2. What are the three most important places in your community to promote good health?
3. What can you do if you do not live close to some of the healthy places?

After the students have made the map of their community, they should be able to understand what an ideal community would be like. They should then create a model community as homework or an in-class assignment depending on time and resources at home. Students should be provided with another piece of graph paper. Make sure the students have their home and school on the map. Remind the students to make a key. Each student should include at least three places where they can get nutritious food, 3 places to be physically active and two other places.

Technology Extension

If your school has access to computers and the internet, this technology extension may be used. Assist the students in using a mapping or drawing program to make their model communities on a computer. Have them use the different drawing tools, symbols and colors to code their maps. If students want to make an improved model of their own community (recommended), they could use programs such as MapQuest to find street names and distances between a variety of locations. They can also look up the bus routes for the local bus line and map those out as well. This will give them an idea of how they can get around their community to get to places where they can be healthy.

Assessment Evidence:

Community Map

Journal Entry:

After creating their model community, students should write a brief journal entry answering the following questions:

- Name a few of the places you put on your map and tell why you chose those places.
- What did you put closest to your house? Why are those places most important to you?
- How does your community affect your health?

*Some students may live very far from their school. If this is the case, they can eliminate their school to make this activity easier.

Lesson 4: Introduction to Media Influence

Established Goals:

National Health Education Standards

- 2.5.1** Describe how family influences personal health practices and behaviors
- 2.5.5** Explain how media influences thoughts, feelings, and health behaviors
- 3.5.1** Identify characteristics of valid health information, products and services
- 5.5.1** Identify health-related situations that might require a thoughtful decision
- 5.5.2** Analyze when assistance is needed when making a health-related decision
- 5.5.5** Choose a healthy option when making a decision

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Oral and Visual Standard: BD

Ohio Indicators (Grade 4):

English Language Arts: Reading Applications: Informational, technological and persuasive text: 7, Writing Processes: Prewriting 1, Writing Applications: 5, Oral and Visual Communication: *Listening and Viewing*: 3

Understandings:

Students will understand...

- Media has three purposes: Educational, Entertainment and Advertisement
- Not all media sources are credible

Students will be able to...

- Recognize the different types of media: print, TV, Internet and movies
- Recognize who they should listen to about topics concerning health.
- Recognize the effects of media on their thoughts, feelings and behaviors
- Apply their knowledge about media and make a thoughtful and healthy decision

Essential Questions:

- How often do students watch TV, get on the internet or look at print materials?
- Is the content that is viewed monitored by parents, teachers or other responsible adults?
- Are students' parents a credible source for health information?

Learning Plan:

Background:

Media has a huge impact on people of all ages, but especially on children. The amount of time children are spending in front of the television or on the internet is consistently on the rise. More time watching TV means children are spending less time engaged in physical activity. In addition, media of all forms are influencing the way children think, feel and behave. It is important to strive for media literacy for all children. They must learn to distinguish fact from opinion and fiction from reality. Things are not always what they seem, and students will be able to make healthier decisions if they go to reliable sources to have their questions answered.

Discussion:

See what the students know about media. Ask if anyone can define the term *media*. Do any of the students know what different forms of media are? Can they name another source besides television? Generate enough ideas and come to the following definition:

Media = any device that is intended to communicate a message to an audience.

Here are the words of the definition broken down:

-**Device** = mechanism, method

-**Communicate** = to express, deliver

-**Audience** = group of people or a person to which your message is directed

In other words, *media* is any method used to deliver a message to a group of people. We may be receiving messages without even knowing it. There are many different forms of media that surround us:

-Print media (newspaper, magazines, posters, billboards)

-The internet (also sometimes considered print media)

-Television

-Movies

There are many forms of media and even more messages. Each message has a purpose. The 3 purposes include:

1. **Entertainment** = just for fun
2. **Educational** = to teach something or inform you of something
3. **Advertisement** = an attempt to get you to buy or do something. This is the most persuasive type of media.

Learning Activity: Glossary

Create a **glossary** of terms to keep in their journals:

- Media = any device intended to communicate a message to an audience
- Device = method, mechanism
- Intended = with a goal of
- Communicate = express, deliver
- Audience = group of people your message is directed toward
- Purpose = goal
- Entertainment = just for fun
- Educational = to teach you something or inform you of something
- Advertisement (also called marketing) = when a company tries to get you to buy or do something
- Persuade = to convince someone of something you want them to believe or do

Learning Activity: Media on TV

Materials:

- Blank video
- VCR
- TV

Preparation:

- Record commercials for food and products for children, clips from news or educational shows and clips from cartoons or other entertainment shows.

Directions:

1. Show the video clip by clip. Stop the video after each clip.
2. When you stop the video after viewing each clip, ask the students the following questions:
 - Did you recognize any of the characters?
 - Did you learn any new facts?
 - Were there any cartoons or music?
 - Was most of the time spent on one toy, game or song?
 - What was the purpose of this clip? Was it for entertainment, an advertisement, or educational?

Learning Activity: Print Media

Materials:

- Newspapers
- Scissors

Directions:

1. Give each student or small group of students a stack of newspapers and magazines and a pair of scissors.
2. Have the students look through the newspapers and magazines to find examples of the three purposes of media: Entertainment, Advertisement, and Educational.
3. The students should cut the examples out.
4. Make sure the students find at least one example for each purpose of media.
5. When all students have at least 3 examples, have them present their examples to the class and clearly explain why they chose them.

Assessment Evidence:

Journal Entry: Designing a print media piece

Students will create a one-page print media piece that focuses on health. Students should choose one of the media purposes (educational, advertisement, or entertainment). After selecting a purpose, they should choose a product, topic or idea. This may be anything relating to health. Once the purpose and subject have been chosen, students should decide what type of media piece they want to do.

Some examples include:

- A news story
- A magazine cover
- An advertisement for a healthy product
- A public awareness campaign ad (i.e. anti-smoking, eating well, increasing physical activity, drinking milk, etc.)

This entry can be done by hand or with the assistance of a computer. The media piece should be kept in their journals.

Sample Print Media Piece

STUDENT HEALTH NEWS
THE PRIME SOURCE FOR HEALTH INFORMATION

•Bernard Elementary School •Volume 4, Issue 1
September 2006

Students strive to meet physical activity goals



With the knowledge they gained from the Road of Life: Cancer Prevention for Kids health curriculum and active teacher and parent participation, the students at Bernard Elementary School are increasing their physical activity levels. Each student in the third through fifth grades has pledged to spend more time participating in physical activity and less time in front of the television, computer and video games.

A new club has been formed called **Pathway**, where students can plan group activities in the evenings and on weekends based on similar interests. This group is facilitated by teachers and parents. Students fill out "scorecards" where they receive points for being active. The points add up for incentives such as tickets to athletic events, clothing and more. To sign your children up, please contact Mrs. Smith in the physical education department at Bernard Elementary.

When students are active, they need to keep in mind the lessons they have learned in school. They need to drink lots of water, stretch before and after activities to avoid injury

Short-essay exercise “Who should I listen to?”

Students should be given the following prompts and asked to explain their choice(s) in at least five complete sentences. The students’ responses should include the following:

- Explain why you chose the source that you did.
- How did you decide that it was a credible source?
- If your source came from the media, what is that source’s purpose: Educational, Entertainment or Advertisement?
- Make sure you consider whether or not you are modeling healthy behavior.

1. When learning about smoking, who should you listen to or model your behavior after? Explain your answer. Here are some sample choices: Parents, anti-smoking campaigns (Stand.org, etc.), peers, TV characters, professional athletes, or your doctor.

Sample Response: I usually listen to people who tell me not to smoke. I know that smoking is really bad for your health. People who say it is cool are not telling the truth. Those people just want to look good to other people. My mom tells me not to smoke, but she smokes. I think she just wants me to not model her bad habits.

2. Who do you listen to about physical activity? Explain your answer. Here are some sample choices: physical education teacher, health teacher, my siblings, my doctor, professional athletes, and friends.

3. Who/what influences you the most about what you eat? Is this the best source for you to listen to? Here are some sample influences: Television commercials, friends, teachers, parents, or your doctor.

Lesson 5: Advertising Food and Drink

Established Goals:

National Health Education Standards:

- 2.5.2** Identify the influence of culture on health practices and behaviors
- 2.5.5** Explain how media influences thoughts, feelings and health behaviors
- 3.5.1** Identify characteristics of valid health information, products and services
- 5.5.1** Identify health-related situations that might require a thoughtful decision
- 5.5.5** Choose a healthy option when making a decision
- 8.5.1** Express options and give accurate information about health issues

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Communications: Oral and Visual Standard: BCDG, Research: ABCD

Ohio Indicators (Grade 4):

English Language Arts: Reading Applications: Informational, Technical and Persuasive Text: 7, Writing Applications: 5, Communication: Oral and Visual: *Listening and Viewing* 3, *Speaking Applications* 8 a-f, Research: 1,2,3,4,6; Reading Process: *Comprehension Strategies*: 3,4,5

Understandings:

Students will understand...

- The effect that advertising has on the choices we make and ultimately on our health
- The four techniques that are commonly used in advertisements.

Students will be able to...

- Define and distinguish between facts and opinions
- Define persuasion
- Identify the nutrition label as a source of factual information regarding food and drink

Essential Questions:

- Why do the media influence our nutrition and physical activity choices? (Understanding technique)
- What reinforces or dispels the messages we see on TV or the internet or hear on the radio? What are the contributing factors in the decision-making process?

Learning Plan:

Discussion:

Understanding advertising techniques and distinguishing facts from opinions

Begin by seeing what students already know about commercials and why they are made. Commercials are a form of advertisement that is meant to persuade a person to buy a product or service. From this, students should be asked to define the word *persuade*.

Explain that to *persuade* means to try to convince someone of something

For example, a fast-food restaurant will try to convince you their food tastes great, it is something you want to eat and it is better than other restaurants' food.

This is done for any sort of product. Products do not have to be foods; they can be any type of general merchandise such as food, clothes, movies, etc. Ask the students to recall a commercial that they have seen recently. Ask what happened in the commercial and what product was being sold. Explain that commercials use a variety of techniques to get people's attention and to persuade them to buy the product that they are selling. These techniques can include:

- A spokesperson: A real person, a celebrity, an actor or a cartoon character that appears in ads. The spokesperson says good things about the product or is shown using the product.
- Music: Many commercials use music in the background. Some have a catchy song made just for the commercial. This is sometimes called a jingle.
- Slogans: A sentence or phrase that is made just for the commercial. Slogans can be funny or serious.
- Repetition: Commercials are replayed over and over. Within a commercial, the name of the product will be repeated or a slogan will be repeated so that people remember it.
- Excitement and Fun: Commercials will show people using their products and doing fun or exciting things, like surfing, skateboarding or having fun with family and friends.
- Popularity and Coolness: Commercials will have people dressed in popular or trendy clothing doing things that the majority of people would consider cool. These people are using the product or they become popular or cool after they have the product.

Revisit the commercial(s) that was described by the students. See which of the above techniques were used for the commercial. Acknowledge that the above-referenced techniques may be used in print advertisements as well. It would be beneficial to show sample advertisements that are aimed at kids. (For example, the "got milk?" ads)

Get the students thinking about who makes the commercials and advertisements. Discuss advertising agencies with your students. Advertising agencies work for the product manufacturers. Their job is to convince or persuade people to buy their product(s). They are educated in the subject of advertising and selling. They know how to aim a

commercial or advertisement at a specific group of people. Children are particularly at risk for believing what is presented in commercials, especially if they cannot distinguish between **facts** and **opinions**.

Fact = information based on proof or evidence

Opinion = a personal attitude or a belief that cannot be proven

Express the importance of making choices based on factual information that is presented to you. Students must first find out truthful information about food and drink product before consuming them.

Learning Activity: Making a Commercial

Materials:

- Product description sheets
- Empty cereal package with no labels or labels covered by blank paper
- Empty soda pop bottle or can with the label covered
- Candy bar without a wrapper (some foil underneath) or a candy bar with the label covered
- Potato chip bag with the label covered
- Art supplies

Directions:

1. Divide the students into four groups.
2. Each group is an advertising agency that has been hired by their product's manufacturer to sell their product. They are going to make a 30-60 second commercial.
3. Give each group a different Product Description sheet.
4. Explain that due to limited time, they will only be able to use some of the information on the Product Description Sheet. They have to decide which information will make the product seem appealing. That information is what should be told in the commercial.

*This activity may be split up over the course of a few days.

Part 1: Brainstorming

1. In their groups, the students should decide which items on the Product Description Sheet they want to highlight in their commercial.
2. Students should also decide which advertising techniques they want to use. Display the advertising techniques on the board or elsewhere to remind the students what they are.

Part 2: Scripting

1. Have each group create a script for their commercial. They should rehearse their scripts to make sure that they fit the time limit.
2. The students should also use this time to design the labels for their products.

Part 3: Performing

1. Have each group present their commercial to the class.
2. Once every group has presented their commercial, use either a written ballot or have the students raise their hands to vote on the product that they would like to buy the most based on the commercial, without voting for the group they were in.

Debrief:

- Begin with the group that received the most votes. Have the students that voted for the product that received the most votes raise their hands. Tell them to keep their hand raised until they hear something about the product that would make them **not** want to buy (or eat) the product anymore. Explain that this could be anything, including something that makes the product seem unhealthy.
- Have one student from the winning group read the items on the Product Description Sheet one by one. Do this for each group/product.
- Ask the students to tell the class why they left out the information that they did. Hopefully, students will be able to explain that presenting the health information may not make the product appeal to people. Reinforce the fact vs. opinion. What was a fact in their commercial? Which statements were opinions?
- Discuss resources that can be used for children to find out facts about food and drink after they see a commercial for it.
 - **The nutrition label is the best source for information.** This will give the sugar content and show other nutrients that the product provides. (A nutrition label lesson is provided later in the curriculum and there are two lessons on nutrients.) Most fast food restaurants will provide nutrition information for their menu upon request.
 - Parents are another good source. Tell students that it is a good idea for students and parents to learn together about the products that they are consuming.
 - Teachers and doctors are also an excellent source of factual information about food and drink products.

Product Description Sheet: O'Cola!

O'Cola!

1. Has the most fizz of any soda pop
2. Contains no nutrients
3. Contains a lot of sugar
4. Has a lot of caffeine
5. Inexpensive
6. Kids prefer it over Crazy Cola
7. Comes in 3 flavors: Regular, Cherry, and Vanilla
8. Popular kids choose to drink O'Cola over any other drink
9. If you drink O'Cola, you will look more popular, too
10. Made by the same company that makes Goody Goodness Candy Bars

Product Description Sheet: Rise and Shine! Cereal

Rise and Shine! Cereal

1. Crunchy
2. Has the most dazzling colors of any cereal
3. Can be eaten dry or with milk
4. Contains a lot of sugar
5. Families who eat Rise and Shine! Cereal together every morning are better than families that do not
6. Sensational Cereal, which is made by a different company, has more nutrients
7. Sensational Cereal has less sugar
8. Second best-selling cereal last year
9. Favorite cereal of 5 to 8-year-old kids
10. The best way to wake up in the morning is to eat Rise and Shine! Cereal

Product Description Sheet: Mrs. Crunch's Chips

Mrs. Crunch's Chips

1. Contains no nutrients
2. Contains a lot of oil and grease
3. Comes in 3 different flavors: Regular, Barbecue, and Cheesy
4. Made from the Crunch family recipe
5. Eating Mrs. Crunch chips will make you feel like part of the loving Crunch family
6. You can really taste the difference between Mrs. Crunch's Chips from Cheery
Chips
7. Now also comes in snack size bags
8. New design makes them the crunchiest chip ever
9. Tastes best when eaten with Mrs. Crunch's Chip Dip
10. Mrs. Crunch is a really nice lady and you should help her by buying her chips

Product Description Sheet: Goopy Goodness Candy Bar

Goopy Goodness Candy Bar

1. A chocolate candy bar with caramel and nuts inside
2. Contains a lot of sugar
3. Only brave and tough kids can eat a whole Goopy bar
4. Contains no nutrients
5. Kids who like extreme sports love Goopy bars
6. Makes you feel full for hours after eating one
7. Once you eat a Goopy bar, you will never want a different kind of candy bar ever again
8. Dentists say because Goopy bars have so much sugar in them, they may cause cavities
9. Inexpensive
10. Favorite candy bar of the rock band “The Rockers”

Additional Exercise:

Food and drink product comparison research and presentation

This is an in-depth assignment that will help children analyze at least one product that they eat or drink. It will give them a chance to look into how that product is advertised, why they drink or eat it and what alternative to the product is a healthier option.

- Students should choose one food or beverage product that they eat or drink a regular basis (at least several times per week).

- Once they have made a decision, they should come up with an alternative product to compare it to. If they select a beverage, their alternative product should also be a beverage. Follow the same rule for food. The students can also choose something that they eat or drink that is healthy and do the project from the opposite approach. They may want to prove that one of their habits is healthy. Some examples of products to compare are below:

1. Soda vs. milk, water or 100% fruit juice

2. A sugary cereal (such as Captain Crunch) vs. a healthier cereal (Mini Wheat)
3. Fruit snacks vs. real fruit
4. Chips vs. crackers (or another *baked* snack)

Students can be as creative as they would like in choosing products to compare. In the course of their research, they should address the following:

1. Describe how each product is advertised. Which type of media is used? (TV commercial, magazine ad, newspaper, etc) If possible, bring in an example. What advertising techniques are used? Did the ad contain facts or opinions?
2. Compare the nutritional information for each product. Use the nutrition label and other sources, if available. *See the list of additional resources that has several books on nutrition that can be obtained at the public library.*
3. If possible, provide at least one statement made by a health/nutrition expert in support of the alternative (or healthier) product. This can be an author of a book, especially one from the additional resource list. Otherwise, it can be a quote from a magazine or newspaper article, information printed on a credible health website, or a reference material if applicable.
4. Discuss why you eat or drink the product that you choose. What does it taste like? Do you encourage your parent or caretaker to purchase it? If you have the opportunity to try the alternative product, what does it taste in comparison to the product you normally eat?
5. How will your eating habits change after this project? Will you switch to the healthier alternative? Explain.

The report should be at least two pages long. If you require your students to type their work, it should be typed and double-spaced. Students should also provide a list of any resources they use to obtain information about each product. Encourage students to share the resources that they used with the rest of the class. This may be done during the presentation.

Students should then present their findings to the class. They should have at least one visual aid. This visual aid should include a category for each product. In each category, there should be subdivisions. They should show what advertising techniques are used for each product and the nutritional information for each. They may add more categories or present the material in another manner, such as a Venn diagram. They may also choose to list the pros and cons of each product. Students' visual aides may have any additional information or pictures that they wish to include. If possible, the students should bring in a box, bottle, wrapper, etc from each product to display during their presentation. Students should provide a detailed summary of their findings.

**Note: This lesson or research project might be better suited after the lessons on nutrients and nutrition labels have been taught. Students may be able to perform and present better research if they understand those two topics more clearly. It is at your discretion to determine when this project will be the most beneficial to your students.*

Assessment Evidence:

Journal Entry:

Students should write an entry in their journals about the following prompt: **How do you normally decide what you will eat and drink?** Include answers to the following questions:

- Do you eat what you parents buy and nothing else? Do you ever assist your parents when grocery shopping or ask them to buy you food that you saw on TV?
- How much influence does media/advertising have on what you eat and drink?
- What changes might you make in your decision-making process after learning advertising tricks?
- Do you have someone that you can go to for health information? Explain.

Lesson 6: Personal Goal Setting

Established Goals:	
<p><u>National Health Education Standards:</u> 1.5.1 Describe the relationship between healthy behaviors and personal health 2.5.3 Identify how peers can influence healthy and unhealthy behaviors 6.5.1 Set a personal goal and track progress toward it 6.5.2 Identify resources to assist in achieving a personal health goal</p> <p><u>Ohio Benchmarks (3-4 Program):</u> <i>English Language Arts:</i> Writing Conventions Standard ABCD</p> <p><u>Ohio Indicators (Grade 4):</u> <i>English Language Arts:</i> Writing Applications: 4</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none">•That making a contract with their selves is a good way to hold their selves accountable for reaching their goals.•That without a plan, everything is harder.	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none">•Define motivation and goal•Reach a goal by breaking it down into smaller steps or parts.
Essential Questions:	
<ul style="list-style-type: none">•What type(s) of goal(s) are reasonable for my students?•What is their support network/system at home?	

Learning Plan:

Discussion:

- Students should be given the opportunity to define the term *goal* in their own words. They should also brainstorm sample goals (e.g. Spend more time with family members, do something nice for someone each week, walk to school instead of getting a ride, etc.) Some goals are harder to reach than others. An example is as follows:
- More difficult*: raising my math grade from a C to a B
- Easier*: helping my mom around the house more

A good goal is very specific. For example, students should say “raise my grade from a C to a B” rather than “get better grades”. When students are working toward a difficult goal, it is important that they learn to take small steps toward achieving something big. Have your students imagine taking a road trip without a map or winning a basketball championship without a game strategy. To further emphasize this point, do the following exercise.

Learning Activity: Moving Forward

Materials:

- Building blocks or any other stackable objects that are *not* interlocking. Any mixture of sizes will work.
- Masking tape.

Directions:

1. Divide the students up into groups and spread the groups out in the classroom.
2. Give each group a set of 10 to 20 stackable objects.
3. Tell the students to build something with their objects. It must be free-standing. They cannot use anything to hold the objects together.
4. When each group has completed a structure, go around and place a piece of masking tape a few feet in front of each structure.
5. Tell the students that their goal is to move the structure across the line of tape, but only one person can be touching it at a time. When the structure is moved across the line, it should look the same as when the students created it.
6. The group that finishes the fastest will get a prize.

•After the students have completed the exercise, have a class discussion about the following:

- Did anyone try moving the whole structure at once? If so, what happened?
The students are most likely to say that the structure fell over or they weren't able to move it with just one person holding on to it.

- How did you succeed in moving your structure?

The students are supposed to have figured out that they could move the structure by breaking it into smaller pieces and then rebuilding the structure on the other side of the line.

•Begin to discuss motivation with the students. Have them define *motivation* in their own words. *Motivation* is how interested and excited you are about reaching your goal. It is also a driving force that encourages you to continue working on a goal. Explain that sometimes it is hard to stay motivated when trying to reach your goals. To stay motivated, it can sometimes help to set rewards for yourself at each step that you complete. When you have completed a step and you are able to move on to the next step, you can reward yourself with a new book, a CD, a new shirt, etc. This may help to keep you motivated to reach your goal.

- Break down the following goals as an example:

- Eat five fruits and vegetables a day.

1. Eat fruit with breakfast every day.
2. Have a fruit or vegetable as a snack every day after school.
3. Eat a salad or side vegetables with dinner.
4. Pack fruits and veggies in your lunch bag.

- Do 50 push-ups a day

1. Do 10 push-ups every morning for a week.
2. Try to increase the number of push-ups by 5 per week.
3. Do 10 push-ups after school every day for a week.
4. Try to increase the number of push-ups you do by five a week until you have reached fifty.

After the lesson, students should fully understand how to make a personal goal and break the goal down into smaller steps. Have the students fill out the **personal contract**, which is documentation that they have made a goal for themselves and that they are going to work hard to accomplish it. Review each student's goal. Make sure that the goal is attainable. Likewise, make sure that each student's goal is challenging. It is also important to make sure that the students' goals are *positive*, no one should have a goal of losing weight or anything else that would be considered negative. If a student does have a goal that is negative, work with them to redefine their goal to make it positive, or completely change the goal. Here is an example:

Goal: To lose ten pounds

Revised Goal: to begin eating a balanced diet and walking my dog every day to get more exercise.

Assessment Evidence:

Personal Contract**Journal Entry:**

While students are working toward achieving their individual goals, they should keep a journal entry each week until their goal is accomplished. The journal entries should include the following information:

- What is your motivation for accomplishing your goal?
- What did you do this week to work toward your goal?
- What didn't you do that you would have liked to do?
- What were the barriers (set-backs) that you faced?
- Did anyone help you with one of your steps? Explain.
- How did you feel when you made it to a bigger step?
- For the final journal entry only: How did it feel when you accomplished your goal? How did you celebrate? Who was there to cheer you on? What was your biggest motivation throughout the time you were working on your goal?

The journal entry is optional. You may find that the goal tracking worksheet is sufficient.

Personal Contract

I, _____, have decided to reach a personal goal.

My goal is:

To reach my goal, I will break it into smaller steps. These steps are:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

The reward for reaching each smaller step will be:

The reward for reaching my goal will be:

I have set a goal that is possible for me to reach. I promise to work hard and keep track of my progress toward this goal.

Signature

Date

Goal Tracking Worksheet

Name _____

Goal: _____

Step	Date Started	Date Accomplished	Reward

Lesson 7: Personal Image

Established Goals:

National Health Education Standards:

2.5.3 Identify how peers can influence healthy and unhealthy behaviors

2.5.5 Explain how media influences thoughts, feelings and health behaviors

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Writing Application Standard: B, Communications Standard: Oral and Visual: G

Ohio Indicators (Grade 4):

English Language Arts: Reading Process: *Comprehension Strategies* 4,5; Reading Applications: Literary Text 1,3,5; Writing Applications: 2,4,5; Communications: Oral and Visual: 8 a-f

Understandings:

Students will understand...

- Everyone has positive attributes
- Everyone is different and people should not be compared
- Their behaviors affect the self-esteem of their peers as well as their own self-esteem.

Students will be able to...

- Define the word attribute
- See the best in themselves and their peers
- Identify how peers' comments and actions can influence healthy and unhealthy behavior
- Identify how characters on television and in movies affect how they feel about themselves

Essential Questions:

- What can students do to help others feel better about themselves?
- What can students do to realize their own positive attributes?

Learning Plan:

Discussion:

Students should understand the definition of *attribute*. Give students a chance to describe an *attribute* in their own words or by giving an example. Define an *attribute* as **a quality, trait or characteristic of something or someone**. Examples of attributes include: **smart, funny, kind, creative**. Attributes are adjectives that can be used to describe someone or something.

Students should understand that everyone has different attributes. People look different from each other, are good at different things and like different things. It should be emphasized that everyone is different in many ways.

Go around the room and have the students name one positive attribute about them. This will model behavior for the “Things to like about myself” activity.

Learning Activity: Reading and Responding to Scenarios

Choose whether students will work together as partners or together as class to read the following scenarios and the questions that follow:

Scenario 1

Anna and Olivia are eating lunch together. Anna asks, “Did you watch *The Lindsay Ruff Show* last night?” Olivia says she missed it. “Oh, it was so great,” Anna gushes. “Her hair was super straight and she put blue streaks in her bangs. I wish my hair could do that.” Olivia thinks Anna’s curly hair is pretty but she agrees with her friend and doesn’t say so. Instead, Olivia says, “I wish I could dye my hair, too. It would be easier to dye if it were blond.”

Questions:

1. Who do Anna and Olivia compare themselves to?
2. Is it realistic to compare yourself to someone you see on television or in a magazine? Explain.
3. What could Olivia have said to Anna that was positive?

Be sure to make sure students realize that in this scenario, Olivia contributed to Anna’s negative thoughts about herself AND put herself down. Discuss that people on television and in magazines have access to professionals whose job is to make them look “cool and attractive.” You should never compare yourself to anyone.

Scenario 2

Mark and Diego want to play baseball after school. They are deciding who to ask to play with them. Diego says, "I think we should ask the new kid from the class next door." Mark disagrees. He says, "Justin? I saw him try to catch a ball in gym class. He was terrible. If you want to ask him, he's on your team." Diego asks Justin to play with them. Justin admits that he is not a great athlete, but he'll try. Justin strikes out during the game and misses a fly ball in the outfield. "I told you so," Mark whispers to Diego. After the game, Justin uses his math skills to tell everyone what their batting percentages were. He thanks Diego and says, "I love baseball, but I never got asked to play at my old school." Mark is impressed with Justin's math skills and offers to help him with baseball in exchange for some math tutoring.

Questions:

1. Why did Mark not want Justin to play?
2. Was Mark right or wrong about Justin?
3. Would Mark have seen any positive attributes in Justin if Diego hadn't asked Justin to play?

Make sure that the students note that it is important to give people a chance. Justin can get better at baseball with the help of his friends and practice. Mark will also improve at math with Justin's help. Helping your friends is an excellent way to help them have positive self-esteem.

Learning Activity: Things to like about me

Materials:

One worksheet for each student, a marker (non-permanent), masking tape

Directions:

1. Pass out a piece of paper with "Things to like about me" typed at the top to each student. Tell the students to write their name on the worksheet.
2. Give the students a piece of masking tape. Have the students help each other tape the worksheet to their backs.
3. Have the students go around the room and put a POSITIVE comment on the worksheet.
4. Once students have made a comment on every student's worksheet, debrief.

Sample comments: you're nice, funny, smart, caring, kind, hard-working, etc., you make me laugh; you're a good friend, etc.

Learning Activity: Reading a novel or short story

Students should select a grade-level appropriate novel or short story in which the main character goes on a journey of self-discovery. The book should focus on personal image and strength of character during challenging situations with friends and family. The story should reinforce the ideas presented in this lesson. Students can choose from the list of suggested stories provided. You may wish to add stories to the list. You can determine the amount of time that students have to read their novel and respond. Time in class to read the story and work on their reactions should be determined by your schedule.

Assessment Evidence:

Journal Entry: Who I am

Students should write a journal entry that describes who they are by including the following information:

- Your name
- How do you define yourself? (Example: *My name is Kelly, I am a ten-year-old ballerina that likes to read, dance and sing. I am a good friend because I like to share*)
- Who is your best friend?
- Give at least one way that you contribute to the relationship with your friend. (Example: *I walk her dog when she goes on vacation*)
- What are three things you like about yourself?
- Give an example of something you learned about yourself from the “Things to like about me” activity.
- How will you make an effort to see positive attributes in your peers?

Sample journal entry

My name is Ted. I am nine years old and I like to play the guitar. I also like to build model cars with my best friend, Daniel. I contribute to our relationship by making time to work on our projects together. I like myself because I make my little sister laugh a lot, I get good grades in school, and I am a good friend. Today I learned that people think I am good in math. I also learned that I don't know a lot about some people in my class. I will invite more people in my class to come to my house so that I can learn about their positive attributes.

OR

Name Card:

Students will write their name on the card or sheet of paper, spelling their name vertically. They will write something they like about themselves that begins with each letter of their name. See the example below”

Kind

Able to swim

Talented student

Enthusiastic

•**Responding to the novel or short story**

Students should do a character profile that provides the following information:

- Main character's name and age**
- Main character's problem/challenge**
- List the character's supporters (who help them solve their problem(s))**
- How does the character grow as a person throughout the course of the story? What does the character learn about his or herself?**
- Can you name the point in the plot where the character's personality or self-esteem began to change?**
- What occurs that helps the character solve his or her problem? In other words, summarize the plot, including the climax and resolution.**
- How does the main character's story relate to what you learned about personal image in class? How could you determine the story's theme?**

Students should provide the above information in some form of a visual aid that will be presented to the class and then displayed for others to see.

Additional Resources:

Additional project:

Students should keep a journal while reading their book, writing as if they were the main character of the book. Writing from the first person perspective will help identify whether or not the students can comprehend the thoughts and feelings of the main character. There should be a minimum of five entries.

The following chart is a list of stories that would be appropriate for this lesson. All titles were found in the 7th Edition of *Best Books for Children* by John Gillespie.

Title	Author	Appropriate Grade Level(s)
The Lump in the Middle	C.S. Adler	5-7
What's to be Scared Of?	C.S. Adler	4-7
The Many Troubles of Andy Russell	David Adler	2-5
Drew and the Bub Daddy Showdown	Robb Armstrong	3-5
Are you There God? It's me Margaret	Judy Blume	4-6
Blubber	Judy Blume	4-6
Otherwise Known as Sheila the Great	Judy Blume	4-6
Panther Glade	Helen Cavanagh	4-6
Dear Mr. Henshaw	Beverly Cleary	4-7
Strider	Beverly Cleary	4-8
Gabriel's Ark	Sandra Curtis	2-5
Spotlight on Cody	Betsy Duffey	2-4

Randall's Wall	Carol Fenner	3-6
Poopsie Pomerantz, Pick up Your Feet	Patricia Reilly Giff	3-5
Box Top Dreams	Miriam Glassman	4-7
Destiny	Vickie Grove	5-9
Zely	Virginia Hamilton	4-6
Just Like Me	Gail Herman	3-5
Carolina Crow Girl	Valerie Hobba	4-6
Slump	Dave Jarzyna	5-8
Warnock in the Language of Loons	Natalie Kinsey	4-7
The Uncivil War	Sheila Klass	4-6
Mary Marony and the Chocolate Surprise	Suzy Kline	2-4
Amelia Works it Out	Marissa Moss	3-5
Jelly Belly	Robert Smith	4-6
Daring to be Abigail	Rachel Vail	4-6
Mountains to Climb	Richard Wainwright	3-5

Lesson 8: Time Management

Established Goals:

National Health Education Standards:

2.5.5 Explain how media influences thoughts, feelings, and health behaviors

7.5.1 Identify responsible personal health behaviors

7.5.2 Demonstrate a variety of health practices and behaviors to maintain or improve personal health

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Convention Standard: ABCD

Mathematics: Number, Number Sense, and Operations standard: K

Ohio Indicators (Grade 4):

English Language Arts: Reading Process: 4,5,6; Writing Applications: 5,

Mathematics: Number, Number Sense, and Operations: 12, 13, 14

Understandings:

Students will understand...

- The importance of time management
- The benefits of the creating a schedule and making time for physical activity

Students will be able to...

- Classify actions into one of the following categories: Screen Time, Active Time, School Time or Down Time
- List two ways to manage their time in order to incorporate physical activity into their day

Essential Questions:

- Who will help students adhere to the schedules that they create?
- How can time management skills benefit children in other areas of their lives other than making enough time for physical activity?

Learning Plan:

Discussion:

Explain to students that just about everything we do in a given day can be classified into one of four categories. The four categories are below:

Screen Time: Time spent playing video games, watching TV and using the internet for non-school purposes. Screen time should be limited.

Active Time: Time spent playing (including recess and gym class), exercising, walking and doing household chores. High-energy activities fit into this category. Aim for at least 30-60 minutes a day.

School Time: Time spent in classes or doing homework.

Down Time: Time spent reading, relaxing, sleeping and doing low-energy activities. According to the National Sleep Foundation, children ages 5-12 usually need 10-11 of sleep per night.

To help get the students used to the above-mentioned terms, do the following activity. The narratives are designed to give students examples of a normal child's day and help them classify each of their activities into one of the four categories.

Learning Activity: Narratives

Materials:

1. Narratives
2. Scheduling worksheet (one for each narrative, three worksheets per student or per group)
3. Bar graph sheet or blank sheet of graph paper
4. pencils
5. crayons or markers

Directions:

1. Students can do this activity individually, in pairs, or in small groups.
2. Students will read a narrative and then fill out the scheduling worksheet for the narrative which will depict what activities the character did, how long they spent doing those activities, and what category that activity fits into.
3. Once all three narratives are read and their Scheduling Worksheets are complete, students will create a triple bar graph that depicts how much time each of the characters spent on the four time categories.
4. You can either have students use the Bar Graph sheet included with this activity or you may wish to have them set up their own bar graphs using a blank piece of graph paper.

5. Have students color in the bars of the bar graph with a crayon or marker according to the key provided or the key they design.

Narratives

Anne is an 11 year-old girl in the fourth grade. She lives in a house in the country with her grandparents, older brother, and dog.

Anne's alarm went off today at 7:00AM. She watched cartoons while she ate breakfast and got ready for school. She got on the bus around 8:45AM.

That bell means it is 9:00AM! Time for school to begin! Anne has math, science and spelling for 45 minutes each. At 11:15 it is time for recess. Anne goes outside for recess, and she stands along the play equipment talking with her friends.

It's 12:30PM and that bell means lunchtime is over. Anne has gym class next. She does not play hard during gym class. She just stands around while the other kids play kickball for 45 minutes. After gym class, Anne has reading, writing and art for 45 minutes each.

It's 3:30PM and school is out! Anne gets home 15 minutes later and turns on the TV. She does her homework while watching TV until dinner. At 5:30PM she eats dinner. After dinner, Anne helps clean up the dishes. Then she plays a video game with her brother from 6:20PM to 8:10PM. Then, Anne gets on the computer and surfs the Internet for about twenty minutes. At 8:30PM, Anne's favorite TV show comes on. She watches it for half an hour. At 9:00PM, Anne gets ready for bed. By 9:45PM, Anne is in bed, drifting off to sleep.

Pablo is an 11 year-old boy who lives with his mother in an apartment in a city.

"Pablo, it is 7:30AM! Time to wake up!" calls Pablo's mom.

Pablo rolls out of bed. YAY! It is Monday! Pablo loves Mondays!

Pablo eats breakfast and gets ready for school. At 9:00AM, school begins. Pablo learns a lot of different things at school. His favorite subject is writing. He has writing class every day from 1:00PM to 2:00PM. Pablo is very good at writing funny stories.

BRRING! The bell rang! It is 3:00PM and school is over! Pablo has waited all day for school to be over! On Mondays, he gets to do his favorite activity after school!

Pablo's mom picks him up from school. She takes him to karate class! Pablo loves karate! He learns new karate moves from 3:30PM until 5:00PM.

After karate, Pablo goes home and helps his mom make dinner. They eat dinner from 6:00PM to 7:00PM. Then, Pablo starts his homework. Not much homework today! He is finished with his homework at 7:30PM.

Pablo's favorite TV show comes on at 8:00PM. He has 30 minutes to wait for the show to begin. Pablo does stretches and exercises he learned at karate class. Pablo stretches during the commercials, too.

Pablo's favorite show lasts one hour. Then he gets ready for bed. 45 minutes later, he is in bed. Soon Pablo is dreaming about karate!

Kevin is 10 years old. He lives with his mom and dad in a house 10 minutes away from a city.

The alarm goes off at 7 a.m. Kevin hits the snooze button. He stayed up late last night playing a video game. His mom tells him he will be late for school if he doesn't get up soon. Kevin gets out of bed and starts getting ready. He eats cold cereal and a plum for breakfast.

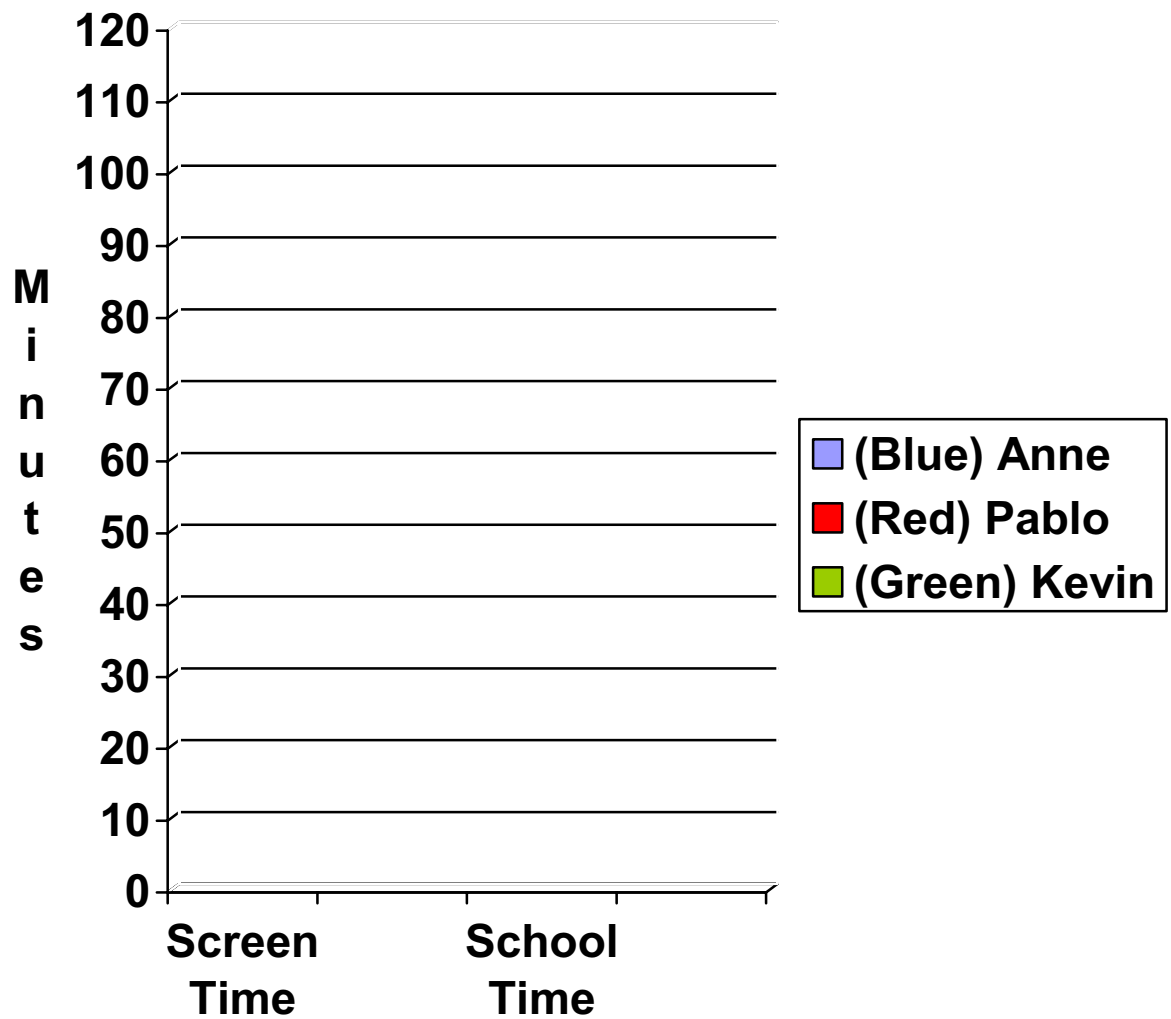
Kevin leaves for school at 7:45. His house is 15 minutes away from the school. He must get to school early on Mondays. Band practice starts at 8:00. Kevin is in school from 8:45 to 3:15. He has a 45 minute break for lunch and recess at 12:25.

Kevin gets home at 3:30. His mom fixes him a snack. Kevin decides to play a video game. His father comes home at 5:30. He asks Kevin to do his chores before dinner. Kevin takes out the trash and starts to rake the leaves outside. Halfway through, he finds his favorite basketball and shoots hoops until dinner. Dinner is at 6:30 and lasts an hour. Kevin finishes raking the leaves. He sits down to do his homework at 8:00. He works on it for 15 minutes and takes a break. He starts to watch TV and loses track of time. It's 9:30 and he hasn't finished his homework! Kevin stays up until 10:30. He's going to have a hard time getting out of bed tomorrow.

Scheduling Worksheet

Time	Activity	Active Time, Screen Time, School Time, or Down Time?	Minutes
Example: 7:00AM - 8:45 AM	Example: Getting ready for school	Example: Down Time	Example: $60 + 45 = 105$ minutes

Bar Graph



Activity Debrief

The following questions will help summarize the activity:

1. Who had the most Screen Time? Who had the least?
2. Who had the most Active Time? Who had the least?
3. What are some of the ways that children with the most Active Time made time for physical activity?
4. What are some things the children with the least amount of Active Time could do to make more time for being active?

Just like it is important to balance your diet and physical activity, it is important to have a healthy balance in how you spend your time. There is one category or way to spend time this is not necessary. That category is screen time. It does not make you healthier and it takes time away from your day that you could be using to be physically active.

Additional Exercise:

Making my own Schedule:

Materials:

Each student will need a “My Schedule” worksheet and a Bar Graph sheet or blank graph paper, and crayons if making bar graphs of personal schedules

Directions:

1. Have students make lists of things they like to do and must do for each of the four time categories.
2. Have students rank the individual items in each category in order of importance.
3. Next, have them rank each list in order of importance. (i.e. Screen Time is the least important of all time categories)
4. Using their “My Schedule” worksheet, students will make a schedule for themselves for the next day using their lists and following the guide. You can post this guide on the chalkboard, transparency or butcher paper:
 1. When do you wake up in the morning? When do you go to sleep?
 2. What time does school start? What time does it end?
 3. What time do you usually eat breakfast, lunch and dinner?
 4. Do you have any classes, lessons or activities that you must go to? When do they start and how long are they?
 5. Do you have any chores to do? How long do they take? When do you want to do them?
 6. How much time do you spend on homework? When do you want to do homework?
 7. How much time is left? Cross off the activities from your list that are already on your schedule. Using the rankings, pick activities to fill the rest of the time on your schedule.
5. When students are done making their schedules, you can have them make a bar graph of time spent for each category

My Schedule

NAME _____

Time	Activity	Active Time, Screen Time, School Time, or Down Time?	Minutes

Assessment Evidence:

Journal Entry:

After the students create a schedule for themselves, they should write a journal entry answering the following questions:

- Was making a schedule for yourself harder or easier than you expected? Explain.
- Did you fit all the things you *needed* to do into your schedule?
- Did you fit all the things you *wanted* to do into your schedule? If you had to leave something out, what was it? Why did you choose to leave that activity out and not another one?
- Do you think you made a balanced schedule for yourself? Explain.
- How do you think making a schedule will help you? In other words, in what areas of your life will making a schedule help you?

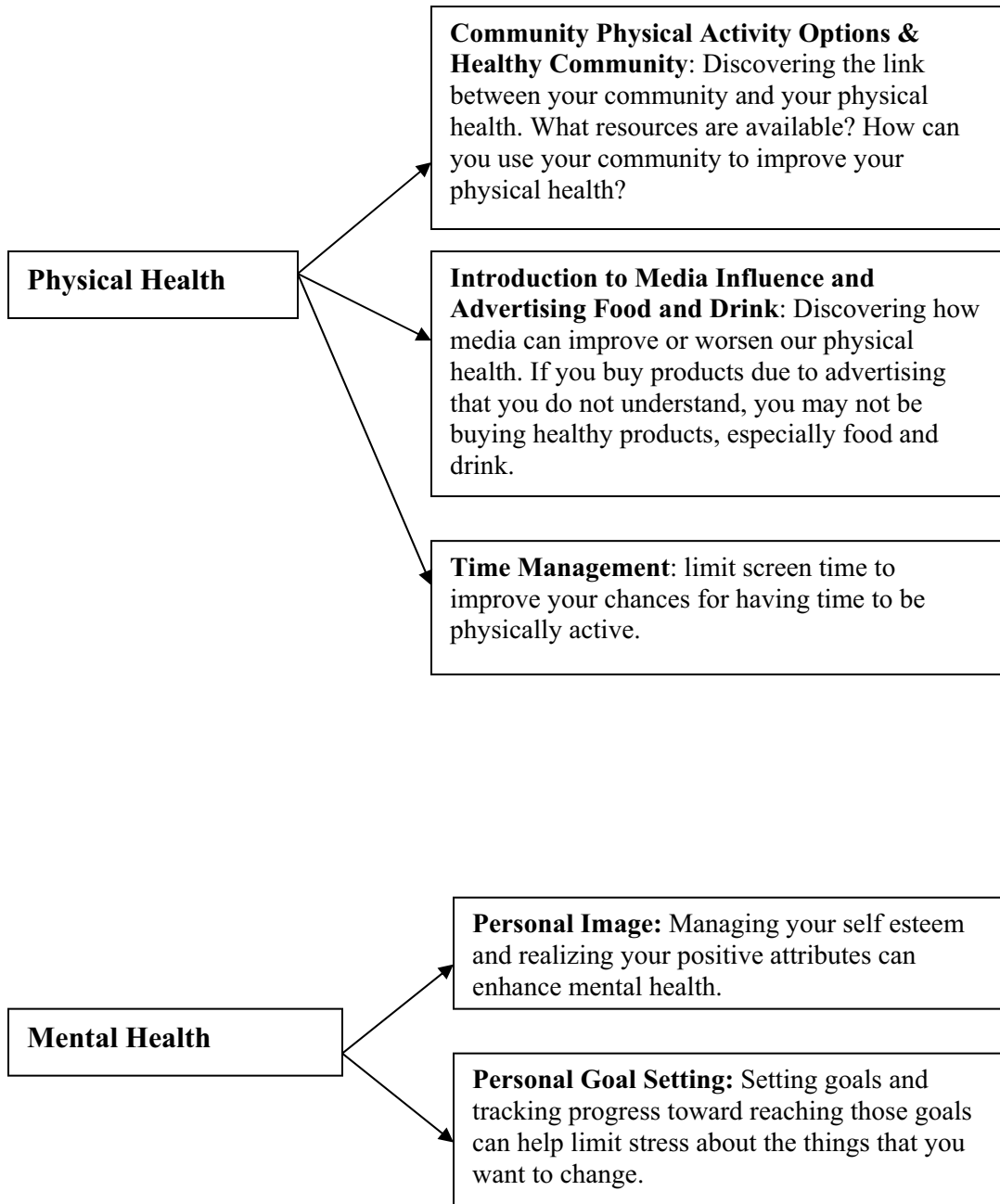
Lesson 9: Review of Lessons 1-8 (General Health)

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>1.5.1 Describe the relationship between healthy behaviors and personal health</p> <p>1.5.2 Identify examples of emotional, intellectual, physical and social health</p> <p>2.5.5 Explain how media influences thoughts, feelings, and health behaviors</p> <p>8.5.1 Express opinions and give accurate information about health issues</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>English Language Arts:</i> Writing Convention Standards: ABCD</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p><i>English Language Arts:</i> Reading Process: 3,4,5; Writing Applications: 2</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The relationship between the general health lessons and the definition of health, including physical, social and mental health. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Identify healthy and unhealthy behaviors when they are presented in a fictional story. •Make recommendations on how someone can improve their health.
Lessons Reviewed:	
<ul style="list-style-type: none"> •Introduction to Health (1) •Community Physical Activity Options (2) •Healthy Community (3) •Introduction to Media Influence (4) •Advertising Food and Drink (5) •Personal Goal Setting (6) •Personal Image (7) •Time Management (8) 	

Learning Plan:

Discussion:

Connection between social, mental and physical health and the general health lessons.



Social Health

Personal Image: Learning how your behavior can affect the self-image of peers. Recognizing your own positive attributes and the positive attributes that others possess will improve social relationships/social health.

•After a reviewing how all the different lessons contribute to our overall health and well-being, have the students read the following two situations about Travis and Elena. Then they should complete the compare and contrast worksheet that follows the scenarios:

Travis

Travis lives in a small town in Mo. During the week, he attends Cross Elementary School. He is in the fifth grade. Before school, Travis always eats breakfast and makes sure that he is on time for school. Travis lives within walking or biking distance of school, but his mom drives him each day and picks him up after school. After school, Travis has a fruit or a vegetable for a snack and then he immediately does his school work. He likes to have time at night to watch Nickelodeon. He also spends time on the internet in the evenings on nights when he does not have guitar lessons.

On the weekend, Travis likes to relax. He usually has Brad over to play video games. Sometimes his friends spend the night and they build forts or sleep in tree house when the weather is warm. Even though Travis got a new bike at his last birthday, he does not ride it very often. He has never visited the park in his community. Even though his older brother plays baseball and basketball, Travis does not like team sports. He does not participate in them.

At the beginning of the school year, Travis set a personal goal. He wanted to eat more fruits and vegetables and drink more water. He eats a fruit or vegetable at every meal and one for a snack. He also drinks water instead of soda.

Travis is known as the “nice guy” at school. He has a lot of friends and treats everyone fairly and likes to meet new people. Travis wants to be a teacher when he grows up and he is confident that his personality will be good for that job.

Elena

Elena is from a big city in Mo. She is in the fifth grade at Danielson Intermediate School. Elena does not like to wake up early, and she is often running late for school. She skips breakfast several days a week in order to make it on time. She rides her bike to school no matter what the weather is. Elena thinks you can never spend too much time riding your bike! After school, Elena eats a candy bar and goes to karate class. After dinner, she watches TV for a couple hours. She usually stays up late because she doesn't start her homework until after her TV shows are over.

On the weekend, Elena always does the weekly grocery shopping with her mom. That's when she usually picks out all the stuff she saw commercials for during the last week. Her favorite is picking out new yummy cereals that are sweet and colorful. She just wishes she had more time to eat breakfast during the week. Every weekend, Elena goes to the YMCA with her friend Beth. Elena found out about special programs for kids at the YMCA one day when she and Beth were bored. Elena's older brother does not like team sports, but he loves to swim. So, he usually takes them to the YMCA. If they can't go to the YMCA, they usually go to the park next to Beth's house to play.

Elena has a lot of friends, but she does not have a very positive self image. She wishes she could be more like the girls she sees on TV. She also wishes she had Beth's blonde hair. Even though she gets good grades and is one of the best people in her karate class, she thinks being pretty is better.

Compare and Contrast

Students will fill out the compare and contrast worksheet. They will use the chart provided to see what Travis and Elena have in common and how they are different. Then they will give a brief answer to the question, "Overall, how healthy are Elena and Travis?" using the information from their charts. They will suggest some lessons that Travis and Elena might benefit from. Students may benefit from doing this exercise as a class.

Compare and Contrast: *Travis and Elena*

Directions: Read the scenarios about Travis and Elena. Fill in the chart below showing how they are alike and how they are different. Then answer the questions below the chart.

<i>How are they alike?</i>	<i>How are they different?</i>	
	Travis	Elena
1.	1.	1.
2.	2.	2.
3.	3.	3.
4.	4.	4.
5.	5.	5.
6.	6.	6.
7.	7.	7.
8.	8.	8.
9.	9.	9.
10.	10.	10.

Overall, how healthy is Travis?

Overall, how healthy is Elena?

Are Elena and Travis physically, mentally and socially healthy? Explain.

Sample worksheet

Compare and Contrast: *Travis and Elena*

Directions: Read the scenarios about Travis and Elena. Fill in the chart below showing how they are alike and how they are different. Then, answer the questions below the chart.

<i>How are they alike?</i>	<i>How are they different?</i>	
	Travis	Elena
1. Both are from Ohio	1. Lives in a small town	1. Lives in a big city
2. In the 4 th grade	2. Mom drives him to school	2. Rides her bike to school
3. Live close enough to school to ride their bikes	3. Does not like riding his bike	3. Loves to ride her bike
4. Have a lot of friends	4. Eats fruit or vegetable for a snack and drinks water	4. Eats sugary cereals
5. Watch TV in the evening	5. Plays video games and relaxes on the weekend	5. Goes to the park or the YMCA on the weekends
6.	6. Has self-confidence	6. Does not have self-confidence
7.	7. Eats breakfast every day	7. Oversleeps and does not eat breakfast every day
8.	8. Does homework before watching TV	8. Does homework after watching TV
9.	9. Goes to bed early	9. Stays up late
10.	10. Does not like team sports	10. Plays Karate

Overall, how healthy is Travis? Travis eats a lot of fruits and vegetables, drinks water, manages his time very well, gets enough sleep, has a lot of friends, gets along well with others, and has self-confidence. He doesn't get enough physical activity though. He could benefit from Community Physical Activity Options and Healthy Community.

Overall, how healthy is Elena? Elena is very active, she gets a lot of physical activity, she manages her time poorly, doesn't eat breakfast, lets the media influence how she feels about herself and what to eat. She could benefit from Introduction to Media Influence, Advertising Food and Drink, Personal Image and Time Management.

Are Elena and Travis physically, mentally and socially healthy? Explain.

Yes, both characters are physically, mentally and socially healthy. Although Elena may not eat as healthily as she could, her physical activity helps balance that. She could be healthier if she ate well. Socially she has a lot of friends, but could be more confident. Elena is mentally healthy- there are no signs that she is not. Travis is not nearly as active as he could or should be. However, he eats well and manages his time. Socially, he has friends and is confident. Mentally, he knows how to set goals and work toward accomplishing them.

Assessment Evidence:

Compare and Contrast Worksheet

Unit 2: Nutrition

Lesson 10: Food Groups and the Food Guide Pyramid

Established Goals:

National Health Education Standards:

2.5.6 Describe ways technology can influence personal health (if technology extension is used with this lesson)

3.5.1 Identify characteristics of valid health information

3.5.2 Locate resources from home, school and community that provide valid health information

8.5.1 Express opinions and give accurate health information

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD

Mathematics: Number, Number Sense and Operations Standard: KLM; Mathematical Processes Standard: BD

Ohio Indicators (Grade 4):

English Language Arts: Acquisition of Vocabulary, 1; Writing Applications, 5

Mathematics: Number, Number Sense and Operations, 12,13,14

Understandings:

Students will be able to...

- Define the word variety and explain its importance in relation to diet
- Define nutrient
- Effectively plan balanced meals using the five food groups and guidelines from the food guide pyramid.

Students will know...

- The five food groups
- Five foods that belong to each food group
- The benefits of eating a diet rich in essential nutrients

Essential Questions:

- What tools are available at school for healthy meal planning?
- How can students help their families choose balanced meals at home?
- What are the students already doing well? What do they need to work on?

Learning Plan:

Background:

Students should be given the opportunity to name the five food groups. Once they have all been named, students should use dictionaries as individuals or as small groups to define each of the five food groups. Students should determine which definition most appropriately suits this lesson. Go over the correct definitions as a class and write the definition on the board. All definitions are from the Random House Webster's Dictionary. Note: The descriptions for the five food groups will come later in the lesson.

Materials:

- Illustration of the Food Guide Pyramid, the larger the better. If you do not have an updated illustration of the Food Guide Pyramid, please visit www.mypyramid.gov to print a copy. There is a special Food Guide Pyramid designed for kids. This is suitable for students through 11 years of age.
- Dictionaries
- Descriptions of the five food groups (below)

Grains

Description: Grains come from grassy plants called cereal grains. The grains are the seeds of the plants. Some examples of cereal grains are wheat, barley, oats and rice. Foods in this group are made from the grains and include bread, pastas, tortillas, breakfast cereal and oatmeal. It is important to strive to eat whole grains. Whole grains provide fiber and carbohydrates.

Definition: A small, hard seed of a food plant, especially a cereal plant such as wheat or rye

Vegetables

Description: Any vegetable or 100% vegetable juice counts as a member of the vegetable group. Vegetables may be raw or cooked; fresh, frozen, canned or dried; and may be whole, cut-up, or mashed. Some commonly eaten vegetables are: green beans, broccoli, carrots, corn, peas, potatoes and spinach. Vegetables provide essential vitamins and minerals.

***Definition:** A plant whose fruit, seeds, roots, tubers, bulbs, stems, or leaf parts are used for food.

Fruits

Descriptions: Any fruit or 100% fruit juice counts as part of the fruit group. Fruits may be fresh, canned, frozen or dried. Additionally, fruits may be whole, cut-up or pureed. Some commonly eaten fruits are: apples, bananas, strawberries, oranges, grapes, peaches and raisins. Fruits contain a wide variety of vitamins and minerals.

***Definition:** The edible part of a plant developed from a flower.

The difference between what is a fruit and what is a vegetable is often confusing and sometimes controversial. Here are some hints to distinguishing a fruit from a vegetable:

- Fruits bear the seeds of plants. Therefore, foods with seeds are considered a fruit.
- Fruits are naturally higher in fructose (sugar) and therefore tend to be sweeter. This is where you have to use the note above. Foods with seeds that are not very sweet are the exception to the rule; these include tomatoes, peppers, etc.
- Vegetables are any other part of the plant that does not bear the seeds. For example, carrots are actually the root of a plant.
- Fruit is the ripened ovary of a plant. Hence, the fruit carries the seeds and is the key to reproduction for the plant, very similar to humans.

Milk

Description: The milk group contains milk and other foods that are made from milk. Milk and products made from milk are often called dairy products. In the United States, most milk and dairy products come from cows. Foods in this group include milk, yogurt and cheeses. This group can be an important source of nutrients that build strong bones and teeth. They provide calcium and protein.

Definition: A white liquid secreted by the mammary glands of female mammals and serving to nourish their young.

Meat and Beans

Description: Meats provide important nutrients that help build strong muscles. Some people choose not to eat meat or have very little meat in their diet. These people can choose to eat beans or nuts that have some of the same nutrients as meats in order to get the nutrients they need from this group. This group includes meat, poultry, fish, dry beans and nuts. Foods in the meat and beans group provide essential nutrients such as protein, fiber and iron.

Definitions: Meat =the flesh of animals used for food

Bean=the edible seed or pod of various plants of the legume family

*Note: A few foods are in the vegetable group **and** the meat and beans group. Some examples of foods that are in both of these groups are: peas and dry beans. Explain to the students that some foods are in more than one group because they provide the same nutrients. For example, some foods contain the same nutrients as meats. Foods in the vegetable group (i.e. beans) that provide the same nutrients as meats are important for people who choose not to eat meat, as they allow them to get the nutrients they need to be strong and healthy.*

** The food guide pyramid includes oils even though they are not considered a food group. There are healthy sources for oil, and there are unhealthy sources for oil. Oils should be limited. Therefore, they are represented by a small slice on the pyramid. Students should try to get their oils from fish and nuts rather than potato chips.*

We will only refer to the Oils group for a short explanation of why it is on the Pyramid. We want students to understand that the Pyramid outlines what someone's total diet should look like and that the nutrient-rich foods found on the Pyramid should be eaten more than those not found on the Pyramid.

Oils

Oils are fats that are liquid at room temperature, like the vegetable oils used in cooking. Oils come from many different plants and from fish. Some examples of oils are: canola oil, corn oil, olive oil and soybean oil.

Discussion:

1. Introduce the students to the illustration of the Food Guide Pyramid.
2. Explain that the purpose of the Food Guide Pyramid is to help people choose healthy foods to eat and achieve balance in their diet. Point out that there are five main sections that make up the Pyramid. These sections are the Five Food Groups that were just reviewed.
3. The Food Guide Pyramid stresses **variety** in your diet. Ask the students to define variety. Use the following example:
 - Which meal has variety?

Group 1: baked potato, toast, rice

Group 2: chicken, broccoli, mashed potatoes

Group 2 has "variety". Each food is from a different food group. Each food group has something special to offer our bodies. We need to eat from all groups in order to be healthy.

4. Explain to students that each group represents foods that have important kinds of nutrients.
5. Brainstorm definitions of a nutrient to see what kids already know.
6. A nutrient is a part of a food that gives your body energy and keeps your body working and healthy. Explain that it is important to eat a wide variety of different foods from all of the five food groups because different foods offer different types of nutrients. If students ask for examples of nutrients, below are a few they may be familiar with.

- Calcium is found in dairy foods and leafy vegetables. It helps build strong bones and teeth.

- Protein is found in meat and dry beans. It helps build muscles.

- Vitamin C, which is found in citrus fruits and broccoli, is needed to maintain a healthy immune system.

Read aloud to the students or have them take turns reading aloud the brief descriptions from the board or have them take notes.

7. Go through each of the food groups. Call on a student to name a food that would belong in each of the particular food groups.
8. Display the Food Guide Pyramid again, and have students count the different sections on it. Some students may have already realized that there is an extra section that is not one of the Five Food Groups.

9. Explain that there is very small section called the Oils group. Read the Oils description.
10. There are healthy and unhealthy sources of oils. The Five Food Groups contain foods that have many nutrients. Oils are used to cook and prepare many foods, so it is almost impossible to avoid oils completely. Therefore, health experts felt that oils should have a designated spot on the Food Guide Pyramid so that people will pay attention to their oil intake. Oils should be consumed in a limited amount.
11. Discuss which food group a candy bar or chocolate chip cookie would belong to. Explain that foods primarily made of sugar are foods that don't contain many nutrients other than sugar, so they are not included on the Pyramid. It is recommended that foods made primarily of sugar be eaten in limited quantities. If students ask for an example of how these foods can be bad for one's health, you can discuss the following:
 - Foods high in sugar give us a quick burst of energy, but the energy is not enough to sustain us for a long period of time. We will "crash" after a short period of time because we need more sugar.
 - Because sugar gets used up quicker than other nutrients, we will eat more food than is recommended over the course of the day.
 - A food that only provides us with sugar and no other nutrients does not contribute to a balanced diet and should be eaten in limited quantities. It is best to eat foods that offer us more of a variety of nutrients. Fruit is an excellent example. Fruits contain natural sugars, but they also offer many vitamins and minerals that help us strengthen our immune system and fight disease.

Technology Extension: Have the students log onto www.mypyramid.gov and click on the "for kids" link on the left-hand side of the page. Students can play the My Pyramid Blast game. It is an interactive game that explores food choices and meeting dietary guidelines for the five food groups. They can also explore the five food groups in depth.

Learning Activity: It all adds up!

Students will help Alex plan his meals for the day. Students will use the worksheet provided to calculate serving sizes and help Alex meet the daily recommendations for a balanced and healthy diet.

It all adds up!

Directions

Alex needs to plan a menu for one day that will give him a healthy, balanced diet. He needs to plan breakfast, lunch, dinner and one or two snacks. **All together**, Alex needs to have:

Grains	Vegetables	Fruits	Milk	Meat & Beans
6 ounces	2 $\frac{1}{2}$ cups	1 $\frac{1}{2}$ cups	3 cups	5 ounces

Study the partial chart here as an example of how to use Alex's chart.

Meal	Grains	Vegetables	Fruits	Dairy	Meat & Beans
Breakfast	Cereal =1 $\frac{1}{2}$ oz Toast =1 oz		Banana= $\frac{1}{2}$ cup	4 oz milk= $\frac{1}{2}$ cup	
Totals	2 $\frac{1}{2}$ oz	0 cups	$\frac{1}{2}$ cup	$\frac{1}{2}$ cup	0 ounces
Lunch	2 slices of bread= 2 oz	6 baby carrots = $\frac{1}{2}$ cup	Apple=1 cup	8 oz milk = 1 cup	2 tbl peanut butter=2 oz
Totals	4 $\frac{1}{2}$ oz	$\frac{1}{2}$ cup	1 $\frac{1}{2}$ cup	1 $\frac{1}{2}$ cup	2 oz

Notice that an ongoing total is kept for every food group. Remember Alex is working toward the daily recommended goal for each food group listed above the chart. To have a balanced diet, he needs to eat from all the food groups.

Use the blank chart on the next page to plan Alex's menu for the day. The food choices follow the chart.

It all adds up!

Use the chart below and the food choice sheet that follows to make Alex's menu.
Remember, Alex needs:

Grains	Vegetables	Fruits	Milk	Meat & Beans
6 ounces	2 $\frac{1}{2}$ cups	1 $\frac{1}{2}$ cups	3 cups	5 ounces

Meal	Grains	Vegetables	Fruits	Dairy	Meat & Beans
Breakfast					
Totals					
Lunch					
Totals					
Dinner					
Totals					
1 st Snack					
Totals					
2 nd Snack					
Grand Totals					

1. Make a list of foods that go in the "other" category that you would have planned for Alex. (Example: Jelly for a peanut butter and jelly sandwich) _____
2. Are the meals you eat similar to the meals you planned for Alex? Explain.

3. Did you give Alex enough variety? Explain. _____

Food Choices for It all adds up!

Key: (1 ~~EQ~~ means (equals 1 ounce equivalent), C =cup

Note: You may choose a food item more than once. For example, you will need two slices of bread for a sandwich.

Grains 6 ounces

1 C white rice (2 ~~EQ~~
Flour Tortilla (2 ~~EQ~~
1 C cornflakes (1 ~~EQ~~
5 whole wheat crackers (1 ~~EQ~~
1 C whole wheat cereal (1 ~~EQ~~

Kaiser Roll (2 ~~EQ~~
7 saltine crackers (1 ~~EQ~~
1 piece cornbread (2 ~~EQ~~
1 slice whole wheat bread (1 ~~EQ~~
1/2 oatmeal (1 ~~EQ~~

Fruit 1 1/2 cups

1 large banana (1 cup EQ
1 small orange (1/2 cup EQ
1 peach (1/2 cup EQ
1 cup 100% fruit juice (1 cup EQ

1/2 fruit cocktail (1/2 cup EQ
1 medium bunch (50) grapes (1 1/2 cup EQ
1/2 cup strawberries (1/2 cup EQ
1 small apple (1 cup EQ

Vegetables 2 1/2 cups

1 baked potato (1/2 cup EQ
1 cup romaine lettuce (1/2 cup EQ
1/2 cup beans (1/2 cup EQ
1/2 cup cooked corn (1/2 cup EQ

6 baby carrots (1/2 cup EQ
1 large sweet potato (1 cup EQ
1/2 cup raw zucchini (1/2 cup EQ

Milk 3 cups

8 oz yogurt (1 cup EQ
2 slices Swiss cheese (1 cup EQ
1/2 cup frozen yogurt (1/2 cup EQ

1/3 cup shredded cheddar (1 cup EQ
1/2 cup chocolate milk (1/2 cup EQ
8 oz fat-free milk (1 cup EQ

Meat and Beans 5 ounces

6 thick slices of ham (2 ~~EQ~~
1 tablespoon peanut butter (1 oz EQ.)
1 ounce mixed nuts (2 ~~EQ~~
1/2 cup beans (2 ~~EQ~~

1 small chicken breast (3 ~~EQ~~
25 almonds (2 ~~EQ~~
4 ounce pork chop (4 ~~EQ~~

Assessment Evidence:

Completed menu/chart and questions for ‘It all adds up!’

Journal Entry:

- Do you eat from the five food groups everyday?
- What is your favorite food group? What food do you like best from that group?
- Do you think you will use the meal planning skills you learned? Explain.
- Name one fact that you will share with your family.

Additional Resources:

You can order additional materials at no cost, including an interactive meal planning game at www.mypyramid.gov .

Another excellent site is www.nutritionexplorations.org/educators . This site provides lesson ideas and other excellent materials for educators.

Lesson 11: Growing Essentials

Established Goals:

National Health Education Standards:

- 1.5.1.** Describe the relationship between healthy behaviors and personal health
- 5.5.4.** Predict the potential outcomes of each option when making a health related decision
- 5.5.6.** Describe the outcomes of a health-related decision

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Writing Application Standard: D, Research Standard: BD, Communications: E, Writing Process Standard AB

Science: Life Sciences: B, Scientific Inquiry: ABC, Scientific Ways of Knowing: ABC

Mathematics: Data Analysis and Probability: ABC, Measurement Standard: D

Ohio Indicators (Grade 4):

English Language Arts: Writing Applications: 4,5; Writing Conventions: 1-13; Communications: 8(a-f) Writing Process: 2,3 Research: 4

Science: Life Sciences: 2, Scientific Inquiry: 1-3,6 Scientific Ways of Knowing: 1,2

Mathematics: Data Analysis and Probability: 1,2,5

Understandings:

Students will understand...

- That healthy food and beverages are essential components of a healthy lifestyle
- Scientific experiments are a useful way to provide evidence to support a claim

Students will be able to...

- Complete a scientific experiment using the scientific method
- Collect and analyze data
- Write a formal scientific report

Essential Questions:

- How does what you eat and drink affect your health?
- How does the scientific method aid in discovering the importance of healthy eating and drinking?

Learning Plan:

Discussion:

Review the meaning and purpose of nutrients. Nutrients are substances that help nourish the body. Inform students that nutrients are responsible for helping hair, nails, teeth, and gums stronger and making skin clear and healthy. Nutrients give energy, help to speed up the healing process from illnesses and can help improve eyesight. Nutrients also aid in concentration and clarity in thinking.

Ask students to identify how humans get nutrients. Nutrients are available in fruits, vegetables, dairy products, meats and beans. By eating healthy foods that include fruits and vegetables, the body can utilize the nutrients to stay healthy and grow strong. Remind students of the importance of water. More than half of the human body consists of water and 3-5 glasses of water a day are needed to keep the body from dehydrating. Water serves to filter the body and rid the body of toxins through urination.

Inform students that in order to maintain a healthy lifestyle it is important to eat healthy food and drink plenty of water. The body can survive on one or the other, but the body is most productive if it has both water and nutrients from food. In order to grow strong and healthy, the body needs water and nutrients. Without healthy food and water, the body becomes more susceptible to disease. Also, without healthy food and water, the body does not function as well and may become sluggish. To emphasize this concept, students will conduct a scientific plant experiment.

Students will plant three plants and expose each to a different environment. Plants will receive water only, plant food only, or a combination of water and plant food. Although each plant will show some signs of growth, the plant that receives the water and plant food should have the most growth and appear the healthiest.

After completing the experiment students will write a full lab report that includes a hypothesis, methods, data collection, results, discussion, and conclusion section. From the experiment and the scientific report, students should learn that in order to be healthy the body needs water and nutrients, similar to the plant that was the healthiest because it received water and nutrients. Have each group present the results to the class.

Learning Activity: Plant Experiment

Note to the teacher: This experiment will allow students to understand that water and nutrients are essential for healthy growth and development. This lesson will take at least two weeks to complete, therefore, please plan accordingly so that students have time each day to collect data for a 3-week period.

Preparation:

At each work station, lay the materials out for each student group. You may want to soak beans overnight for 24 hours to speed up the growing process. Make eleven copies of the data portion of the Group Worksheet for each group to record data. Make a copy of the Final Report section for every student to complete.

Materials:

- Styrofoam cups
- Potting soil
- Plant food or fertilizer
- Water
- Spoon
- Marker
- Bean plant seeds
- Rulers or measuring tape
- Group and Final Report Worksheets

Day 1: Set-up

1. Divide students into groups. Before starting the experiment, have students conduct an inventory of the materials. Using the marker, a student should label the cups; Cup 1: Water, Cup 2: Nutrients, and Cup 3: Water and Nutrients. Also, have the groups label the cups with their group name
2. Have students fill their cups with soil and plant one bean seed in each cup.
3. Have students add water only to the cup labeled water, plant food or fertilizer only to the cup labeled nutrients, and water and plant food to the cup labeled water and nutrients. Please read the instructions for the purchased plant food and have students add the plant food accordingly.
4. Have students place plants near a window or area that will get adequate sunlight. If preferred, growth lamps can be used.
5. Have students complete the experiment and fill in the Group Worksheet. Each student is responsible for the Final Report Worksheet.

Steps for Maintenance and Recording Data

1. Have students water plants every third day and add plant food to plants as specified on the directions. Miracle Grow instructs individuals to add plant food every 7 to 14 days.
2. Have groups record any observations concerning growth, appearance, texture and seedling production. Measure any sprouts and record measurements on the worksheet. Have each group fill in the chart each day with the measurements.

Group Worksheet: Plant Experiment

Names:

Hypothesis: Circle the answer from the selection of bolded options.

*Our hypothesis, or guess, is that the plant **with water** / **with nutrients** / **with water and nutrients** will grow the fastest and the tallest and will look the healthiest.*

Methods:

1. Review materials and make sure you have Styrofoam cups, markers, potting soil, plant food, water, spoons, bean seeds, rulers, and worksheets.
2. Label three cups.
Cup 1: Water
Cup 2: Nutrients
Cup 3: Water and Nutrients
3. Write the group name on the side of each cup
4. Fill the cups with 2/3 of soil. Place the bean in the soil so that it is covered with dirt.
5. Water the plants in the cups labeled "Water" and "Water and Nutrients."
6. Place plant food as instructed by the teacher in the cups labeled "Nutrients" and "Water and Nutrients."
7. Place cups on the window sills or in a place where sunlight is available. Make sure to place all three of the cups in the same place.

Data: Example

Date_1/23/2007_____ Day__4_____	Growth (height)	Appearance (color)	Texture (firm or wilted)	Production (# of seedlings)
Plant with water only	.5cm	Green	Firm	1 seedling
Plant with nutrients only	.2cm	Yellowish green	Wilted	0 seedlings
Plant with water and nutrients	.7cm	Green	Firm	2 seedlings

Additional Observations: This is the fourth day of observation and it is the first time that we see growth. The plants look healthy and strong but the plant with water and nutrients seems to be doing the best. We made observations and recorded the data at 12: 45pm.

Data: Fill in the date and day of the observations along with observations for each plant.

Date _____ Day _____	Growth (height)	Appearance (color)	Texture (firm or wilted)	Production (# of seedlings)
Plant with water only	_____ in. _____ cm.			
Plant with nutrients only	_____ in. _____ cm.			
Plant with water and nutrients	_____ in. _____ cm.			

Additional Observations:

Date _____ Day _____	Growth (height)	Appearance (color)	Texture (firm or wilted)	Production (# of seedlings)
Plant with water only	_____ in. _____ cm.			
Plant with nutrients only	_____ in. _____ cm.			
Plant with water and nutrients	_____ in. _____ cm.			

Additional Observations:

Final Report

Hypothesis: Rewrite your hypothesis. What was your guess?

Method: Write a step by step explanation of the methods. What materials did you use in the experiment? How did you carry-out the experiment?

Final Report

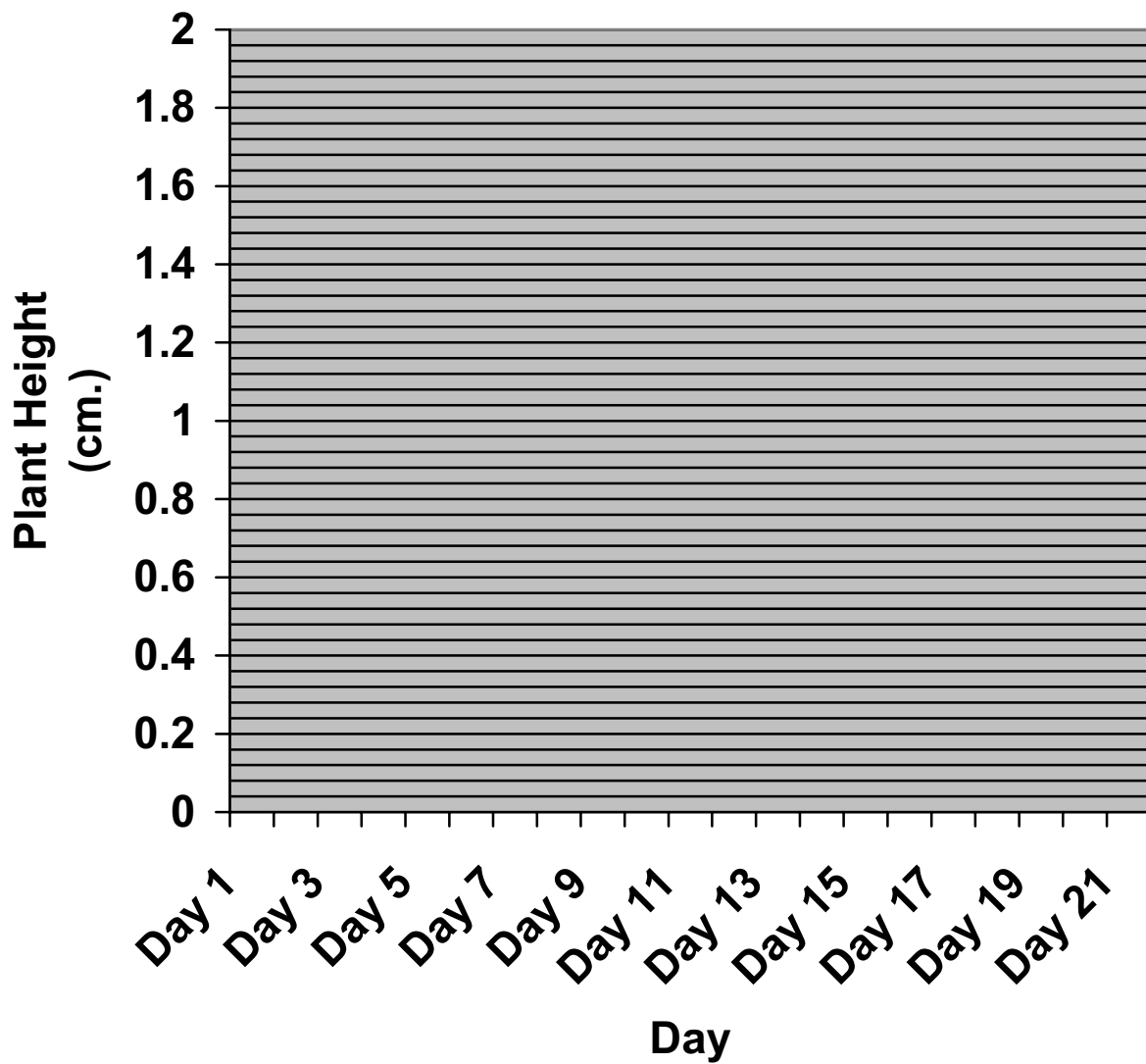
Data: Growth of the Plants

Day	Growth (height) Water	Growth (height) Nutrients	Growth (height) Water and Nutrients
Day 1	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 3	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 6	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 9	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 12	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 15	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 18	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.
Day 21	_____ in. _____ cm.	_____ in. _____ cm.	_____ in. _____ cm.

Final Report

Results: Graph your results in centimeters for Day 1, Day 3, Day 6, Day 9, Day 12, Day 15, Day 18, and Day 21 for each plant.

Plant Growth



Final Report

Discussion: Discuss your results. Was your hypothesis correct? Which plant grew the most? Which plant looked greener and healthier? Which plant produced more seedlings?

Conclusion: Write your final thoughts about the experiment. Do you think a person who eats nutrient-rich food and drinks water will show the same results as the plant that received water and nutrients? What about a person who does not drink water and eat nutrient-rich food? What should a person do to stay healthy and grow strong? You may use an extra sheet of paper if needed.

Assessment Evidence:

Journal Entry:

Have students write a one-page summary about what they have learned from the experiment. Have students answer the following questions in the one page summary. Which ideas have remained the same and which ideas have changed? How has your point of view changed concerning nutrition? How have your knowledge, beliefs, and behaviors changed and how will you convey this change personally? How will you use the knowledge that you've learned in your everyday life?

**Final Report
Group Worksheet**

Lesson 12: Reading Nutrition Labels

Established Goals:

National Health Education Standards:

3.5.1 Identify characteristics of valid health information, products and services

3.5.2 Locate resources from home, schools and community that provide valid health information

Ohio Benchmarks (3-4 Program):

Mathematics: Mathematical Process Standard: J, Number, Number Sense, and Operations Standard: I, J, L,M

Ohio Indicators (Grade 4):

Mathematics: Number, Number Sense and Operations Standard: 9, 10, 11, 13,14

English Language Arts: Writing Applications, 5

Understandings:

Students will understand...

- The importance of eating one serving of food at a time.
- How to avoid eating more than one serving of food at a time.
- The the nutrient amounts listed on the nutrition label pertain to one serving of a food.

Students will be able to...

- Locate the serving size, servings per container and nutrients on a nutritional label.
- Use simple math to calculate a serving size, total servings per container and the number of servings left when given limited information.
- Compare their normal eating habits to those that are recommended on the nutrition label.

Essential Questions:

- How can students use math in everyday situations to enhance their skills?
- How can reading a nutrition label properly enhance my personal health?
- How can I share this information with other people?

Learning Plan:

Background:

Materials:

- Box of crackers**
- loaf of bread (sliced)**
- nutrition labels from each product*

Note: Make sure that the crackers and bread have nutrients listed, as some bread and crackers appear healthy but are not. Our suggestions: whole wheat or seven grain bread and multi-grain crackers.

Ask the students whether bread or crackers have more nutrients. Explain that they cannot correctly answer the question without knowing *how much* bread is being compared to *how many* crackers. Display the entire loaf of bread and one cracker. Ask the question again, which has more nutrients?

-Since there is so much bread compared to the one cracker, the loaf of bread as a whole is going to have more nutrients. The same would be true for the entire box of crackers compared to a slice of bread.

Ask students how many crackers they think are in the box. Let them make guesses. There are two ways to know how many crackers the box contains:

1. Count all the crackers in the box (this will give you an exact total)
2. Look at the nutrition label (this will give you an exact total or a very good estimate)

Estimating is usually much quicker and more efficient than counting the number of crackers in the box. To estimate the number of crackers in the box, students should look at the *serving size* listed on the nutrition label. In this case, a serving size is a given number of crackers. Let's say a serving size is **12 crackers**. Under the serving size, the number of servings is usually listed. Let's say in this case there are **about 4 servings** in the box. You would need to multiply the number of crackers per serving by the number of servings per box.

$$12 \text{ crackers} \times \text{about } 4 \text{ servings} = \text{about } 48 \text{ crackers per box}$$

If the serving size is given in an exact amount, then you have an exact total. If it gives an uncertain amount (usually denoted with the word "about") then you have an estimate.

It may be beneficial for the students to do another example using the loaf of bread. If a serving of bread is **1 slice** and the number of servings per loaf is *exactly* **16 slices**, it would be calculated as follows:

$$1 \text{ slice} \times 16 \text{ servings} = \text{exactly } 16 \text{ servings}$$

The nutrition label, by law, must be on every package of food. The nutrition label tells us which nutrients are in a particular food and how many nutrients are in it. The food label also tells us how much of that food or drink is in the package.

What is a nutrient? Remind students that a nutrient is a part of food that gives the body energy, keeps it healthy and helps it perform important functions. Students can find out how many nutrients are in a product by looking under the nutrient bar. The nutrient bar is the dark horizontal line found near the bottom of nutrition labels under which you are able to see many nutrients listed with percentages next to them.

Students may be wondering what exactly a serving size is. The serving size is listed on the nutrition label and it is how much of that food you should consume at one time. A serving size is not always the whole package of food (as we saw with the crackers and the bread). Therefore, the amount of nutrients written on the nutrition label pertains to one serving size, which may not be the whole package.

Eating more than one serving at a time: If a person eats two serving sizes at once, such as two pieces of bread for a sandwich, then all the information on the label must be multiplied by 2. If you eat three servings, it should be multiplied by 3, and so on. If you only eat half of a serving, you divide the information by two.

Who decides what a serving size is? Who says that 12 crackers or 1 slice of bread is what should be consumed at one time? The company that makes the packaged food decides what the serving size for the product is. Then, they base the rest of the nutrition label on the serving size.

-The exception to this rule is fruits and vegetables. The United States Department of Agriculture (USDA) determines the serving sizes for fruits and vegetables. In this case, 1 serving = 1 cup. This follows their guidelines for the amount of servings of fruits and vegetables needed per day. The recommendation is 5 to 9 a day. Since fruits and vegetables are rarely packaged, it can be difficult to determine their serving sizes. Explain that one cup of a fruit or vegetable cut up is approximately the size of a baseball. *(Note: This issue is addressed more thoroughly in the 5 to 9 a day lesson)*

Serving Size Tip: A good way to make sure that you do not eat too many servings of foods without many nutrients is to divide the packages into smaller baggies of one serving each. Then, when they eat a snack that does not have a lot of nutrients, they are eating just one serving instead of many servings- or the whole package- without thinking about it.

Learning Activity: Reading Nutrition Labels

Materials:

1. Reading Nutrition Labels worksheet: 1 per student or group of students
 2. Calculators if students are not expected to use mental math or long hand
 3. Food packages with nutrition labels: enough for 2 per group or individual*
- *If this activity is assigned as homework, students may be asked to compare two foods by using labels from home.
4. Use the example provided to demonstrate what the students are supposed to do.

Example: Reading Nutrition Labels Activity

Nutrition Facts	
Serving Size $\frac{3}{4}$ cup (55g)	
Servings Per Container 5	
Amount Per Serving	
Calories 250	Calories from Fat 50
% Daily Value*	
Total Fat 6g	9%
Saturated Fat 0.5g	3%
Cholesterol <5mg	<2%
Sodium 200mg	8%
Total Carbohydrate 40g	13%
Dietary Fiber 4g	16%
Sugars 18g	
Protein 9g	18%
Vitamin A 25% • Vitamin C 50% • Calcium 30% • Iron 25%	
*Percent Daily Values based on a 2,000 Calorie diet.	

Name of Food: soup	Serving Size: $\frac{3}{4}$ cup
Servings per container: 5	
Sugar: Per Serving: 18g Per Container: $(18g \times 5) = 90g$	Fat: Per Serving: 6g Per Container: $(6g \times 5) = 30g$
Fiber: Per Serving: 4g Per Container: $(4g \times 5) = 20g$	Vitamin C: Per Serving: 50% of the daily value Per Container: $(50 \times 5) = 250\%$ of the daily value

Reading Nutrition Labels

Name _____

Directions:

Use the information on the nutrition label to fill in the chart. Follow the example done in class.

Nutrition Label #1

Name of Food:	Serving Size:
Servings per container:	
Sugar: Per Serving:	Fat: Per Serving:
Per Container:	Per Container:
Fiber: Per Serving:	Vitamin C: Per Serving:
Per Container:	Per Container:

Nutrition Label #2

Name of Food:	Serving Size:
Servings per container:	
Sugar: Per Serving:	Fat: Per Serving:
Per Container:	Per Container:
Fiber: Per Serving:	Vitamin C: Per Serving:
Per Container:	Per Container:

Questions:

1. Do you think the serving sizes for either of your foods are realistic? Explain.

2. Did either of your foods have many nutrients listed under the Nutrient Bar? Which food(s)? Which nutrients did it contain?

3. What is one reason why someone might eat more than one serving of either of your foods?

Sample Nutrition Label

Serving Size: the amount of food a person should eat at one time.

The number of servings in the package: Given here as an exact amount.

Nutrient Bar

Nutrients

Nutrition Facts			
Serving Size 1 cup (228g)			
Servings Per Container 2			
Amount Per Serving			
Calories 260		Calories from Fat 120	
% Daily Value*			
Total Fat	13g		20%
Saturated Fat	5g		25%
Trans Fat	2g		
Cholesterol	30mg		10%
Sodium	660mg		28%
Total Carbohydrate	31g		10%
Dietary Fiber	0g		0%
Sugars	5g		
Protein	5g		
Vitamin A	4%	•	Vitamin C 2%
Calcium	15%	•	Iron 4%
* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:			
	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g
Calories per gram:			
Fat 9	•	Carbohydrate 4	• Protein 4

Assessment:

Journal Entry:

Students should write a journal entry answering the following questions:

1. Who does the grocery shopping at home? Do you ever get to help pick food out?
2. What did you learn about reading nutrition labels that you can share with your family or caregivers?
3. Do you think you will take the time to make sure you are only eating one serving of a food or drink at a time? Do think that you normally eat more than one serving at a time?
4. Describe a meal or snack that you eat on a regular basis. Make a guess or prediction about the serving sizes for those foods. Next time you have that snack or meal, come back to this journal entry and write at least three sentences about what you found out about the foods that you eat a lot.

Additional Assessment: Nutrition Label Math

If time allows for some extra practice with the math needed to read a food label. Have the students do the problems on the next page.

Nutrition Label Math

Directions:

Complete the following math problems. Remember to label your answer and show your work.

Example: A can of soup has 3 servings in it. One serving is 2 cups. How many cups are in the can?

$$2 \text{ cups} \times 3 \text{ servings} = 6 \text{ cups}$$

1. The nutrition label for a box of crackers says there are 5 servings in the box. There are 8 crackers in a serving. How many total crackers are in the box?
2. The serving size for sour cream is 2 tablespoons. The nutrition label says that there are *about* 8 servings in the container. How many tablespoons are in the container?
3. There are 16 ounces in a bottle of soda. The nutrition label says there are 2 servings per container. How many ounces is one serving of soda?
4. Annie ate one serving of cereal that was $1 \frac{1}{2}$ cups (1.5 cups). The box of cereal has $4 \frac{1}{2}$ cups (4.5 cups). How many servings are left in the box?
5. Jim, Chris and Todd want to share a container of ice cream. One serving is $\frac{3}{4}$ cup. The whole container is $3 \frac{1}{2}$ cups. Is there enough ice cream for each person to have a serving? Show your work.
6.
 - a. There are 6 cups of pasta in a box. A serving is $1 \frac{1}{2}$ cups. How many servings are there per box?
 - b. If Kimberly and Emily each ate one serving of pasta and the box was full when they opened it, how many cups of pasta are left in the box?

Lesson 13: Fruits and Vegetables Inside and Out

Established Goals:

National Health Education Standards:

- 2.5.2** Identify the influence of culture on health practices and behaviors
- 5.5.1** Identify a health-related situation that might require a thoughtful decision
- 5.5.5** Choose a healthy option when making a decision
- 7.5.1** Identify responsible personal health behaviors
- 7.5.2** Demonstrate a variety of health practices and behaviors to maintain or improve personal health

Ohio Benchmarks (3-4 Program):

Science: Scientific Inquiry: ABC, Scientific Ways of Knowing: ABC

Ohio Indicators (Grade 4):

Science: Scientific Inquiry: 1,3,6; Scientific Ways of Knowing: 1,2,4

English language Arts: Acquisition of vocabulary: 4 (If the synonym/antonym extension is used)

Understandings:

Students will understand...

- That fruits and vegetables offer us different nutrients and nutritional value based on their color classification.
- That in order to be healthy, they should strive to eat a variety of fruits and vegetables rather than just a few that are their favorites.

Students will be able to...

- Use a scientific method to discover the answer to a question.
- Talk about how fruits and vegetables are different from each other, both in physical characteristics and in nutritional value.
- Classify fruits and vegetables based on their physical characteristics

Essential Questions:

- What affect do culture and family have on our daily fruit and vegetable intake?
- How does exposure to a variety of fruits and vegetables affect food choices and fruit/vegetable intake?
- Why are fruits and vegetables an essential part of being healthy?

Learning Plan:

Note to the Teacher: Fruits and vegetables are a very important part of maintaining health. Without proper intake of fruits and vegetables, people lack essential nutrients that help with normal body function. Many people know that fruits and vegetables are healthy, but they do not know why. There are a variety of reasons why people do not eat fruits and vegetables. One of the main reasons is that they do not have access to fruits and vegetables. Another barrier might be that they were never exposed to fruits and vegetables and therefore never developed a like for their taste. This exercise is to familiarize children with the tastes and names of fruits and vegetables. The goal is for children to find out what a fruit or vegetable is through scientific inquiry. By gaining an appreciation for a fruit or vegetable's taste, students will hopefully begin to eat a wider variety of fruits and vegetables. In addition, students will understand how fruits and vegetables benefit them and how to get a variety of fruits and vegetables in their diet by eating different colored vegetables.

Very Important: The activity in this lesson includes tasting fruits and vegetables. It is necessary to pay very close attention to any food allergies that your students may have.*

Discussion:

Begin by asking students to name their favorite fruits and vegetables. Write down their responses on the chalkboard or on a transparency. Is there a wide variety of fruits and vegetables listed? Ask the students if they think they can get the nutrients that they need from *just* the foods listed. Explain that one fruit or one vegetable does not contain all the nutrients your body needs to be healthy. Explain that fruits and vegetables and how they help our bodies can be put into categories by color. The color groups and their descriptions are listed below:

Blue/Purple: Fruits and vegetables in this group help to reduce one's risk of developing some cancers and improve one's memory function. This group includes: blackberries, blueberries, black currants, plums, purple grapes, raisins, purple cabbage and eggplant.

Green: Fruits and vegetables in this group promote vision health, strong bones and teeth and a reduction for the risk of some cancers. This group includes: avocados, green apples, green grapes, limes, green peppers, broccoli, green beans, cucumbers, celery, spinach, zucchini, peas and leafy greens (lettuce).

White: Fruits and vegetables in this group promote heart health and a lower risk of some cancers. This group includes: bananas, cauliflower, mushrooms, onions, white corn and potatoes.

Yellow/Orange: These fruits and vegetables promote a healthy immune system, heart health, vision health and a lower risk of some cancers. This group includes: cantaloupe, grapefruit, lemon, mangoes, peaches, pineapple, carrots, yellow peppers, sweet corn and oranges.

Red: These fruits and vegetables promote heart health, memory function and a lower risk of some cancers. They include: red apples, cherries, cranberries, red

grapes, pink/red grapefruit, strawberries, watermelon, beets, red pepper and tomatoes.

•More information can always be obtained at www.5aday.org . There is a special section for educators. Additional ideas for conveying these messages to children are also provided.

•Students should strive for five fruits and vegetables a day. They can try to eat one fruit or vegetable from each color group to make it easy to remember. It is not as important that students remember how each fruit helps us stay healthy. It is most important that they increase their fruit and vegetable intake and eat a variety of fruits and vegetables.

Learning Activity: Fruit and Vegetable Line Up

Materials:

- A variety of fruits and vegetables
- Index cards
- 1 student worksheet per student

Preparation:

1. Thoroughly wash all fruits and vegetables and have the students wash their hands before beginning this activity.
2. Slice small samples of each fruit and vegetables for tasting and smelling purposes.
3. Line up each sample of fruit and vegetable.
4. For each sample, you will need one whole example (for items with seeds you will want to cut the whole sample in half so that the seeds are exposed) and enough bite size taste and smell samples for each student.
5. Next to each sample, place an index card with the number of that particular sample.
6. Record for yourself the name of the fruit or vegetable for each sample.

Directions:

1. Either individually or in groups, have the students spend a few minutes with each sample.
2. On the students' worksheet, have the students record each sample's outside color, inside color, size & shape, inside texture, outside texture, taste and whether or not it has seeds. Students should make a guess as to the identity of each fruit and vegetable. Then, they can fill in the space that says "name" in the classification charts.
3. After all students have had a chance to record the data for each sample, pass out the 5 classification charts titled "Discovering fruits & vegetables through classification." Using the classification charts, have students identify the correct fruit or vegetable, or confirm their guesses. These charts will show students how to answer a question using deductive reasoning.
4. Optional extensions:

- Students are bound to use a variety of adjectives to describe taste, texture, etc. Use this opportunity to discuss synonyms and antonyms.
- Ask the students to bring in fruits and vegetables that are culturally significant to them.

Assessment Evidence:

Fruit and Vegetable Line-Up Worksheet

Fruit and Vegetable Line Up



Student Worksheet

Name _____

Sample	Does it have seeds?	Outside Color	Inside Color	Size & Shape	Inside Texture	Outside Texture	Taste	What is it? (guess)	Name
1									
2									
3									
4									
5									
6									
7									
8									
9									
10									

Outside color = color of the fruit or vegetable's skin

Inside color = color of the fruit or vegetable on the inside when it is cut open or bitten into

Size = the size of the ENTIRE fruit or vegetable (small or large)

Shape= Triangle, circle, tube

Inside texture = how it feels when you chew it (soft or crunchy)

Outside texture = how the surface of the entire fruit or vegetable feels on the outside (smooth, rough, fuzzy)

Taste = flavor (sweet, bitter, sour, salty)

Fruit and Vegetable Line Up: Follow-Up Questions

Name _____

Directions: *Answer the follows questions after completing the Fruit and Vegetable Line-Up. Keep this sheet as an entry in your journal.*

1. Which sample was your favorite? (Give the name of the fruit or vegetable)

2. Had you ever tried that fruit or vegetable before?

3. What did you like about it?

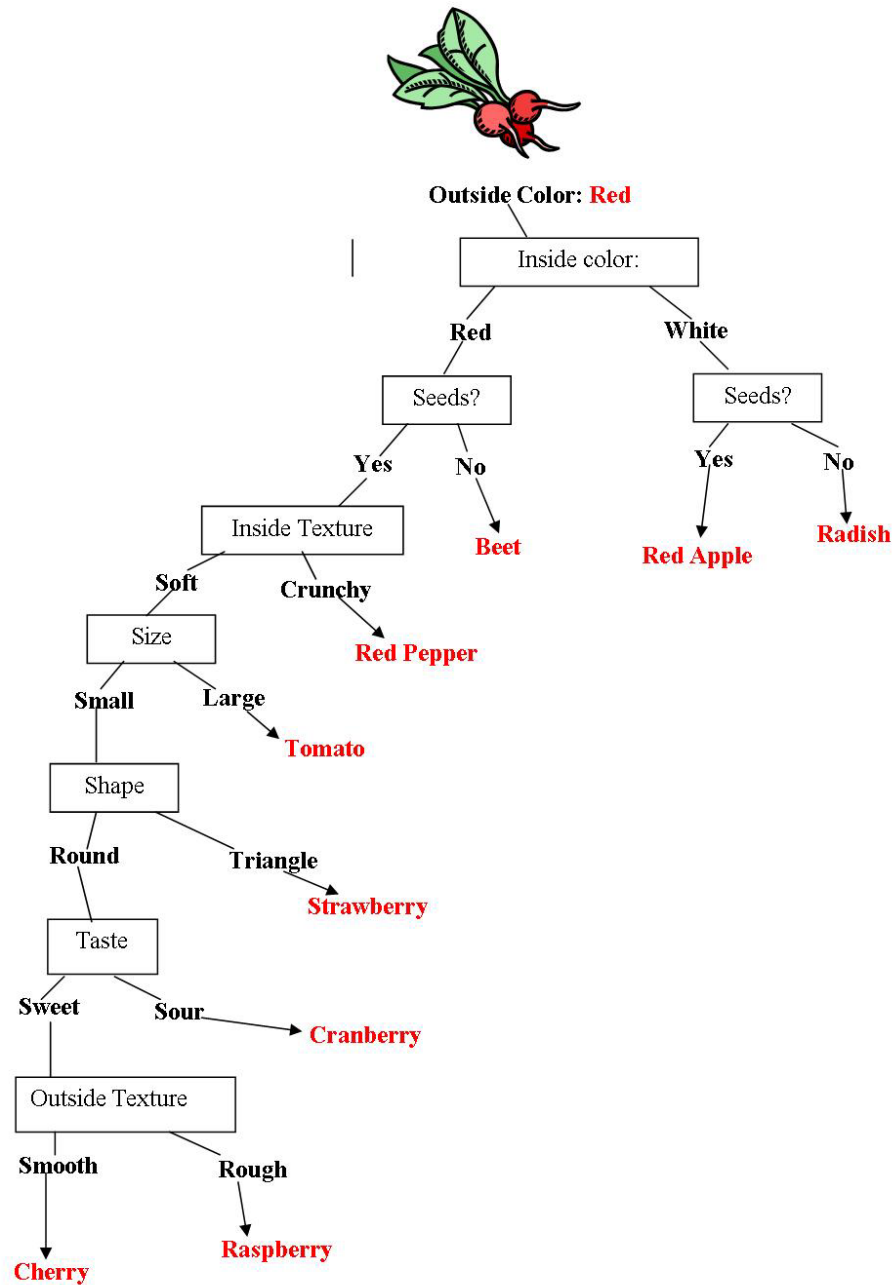
4. What can you do to try eat a variety of fruits and vegetables?

5. Were you able to guess the fruits and vegetables before seeing the answer sheet?
What information led you to your hypothesis (guess)?

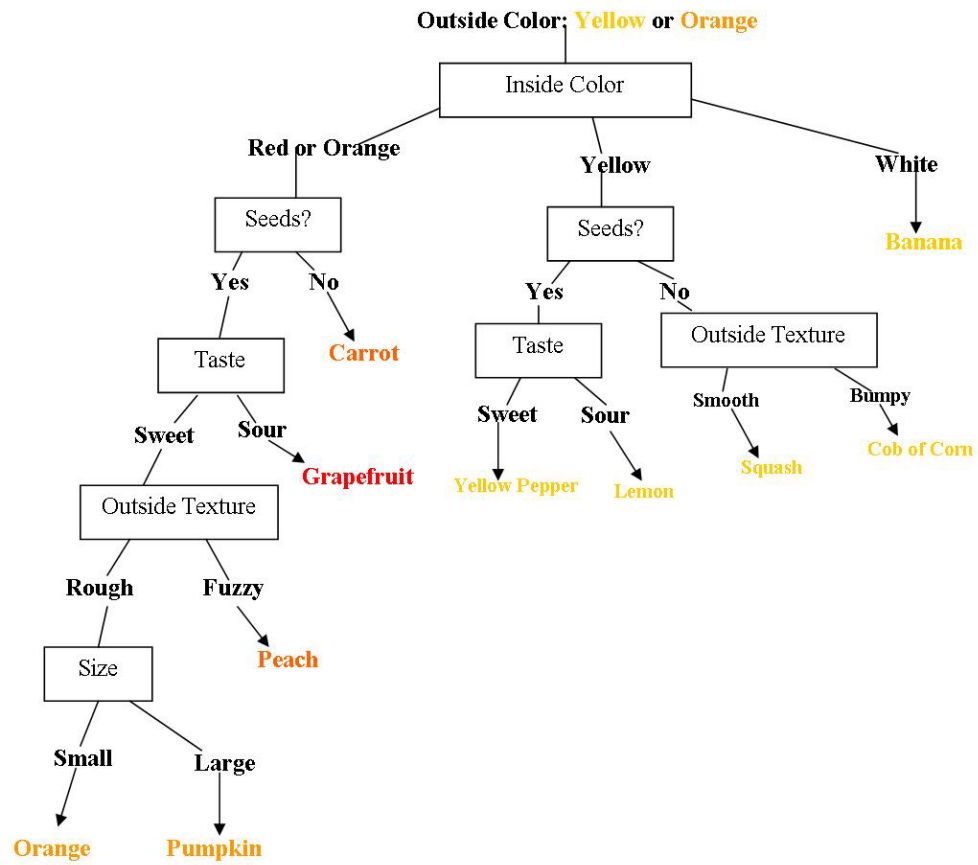
6. In a scientific observation, it is very important to record accurate data. Explain how writing down incorrect information could lead to an incorrect conclusion. (Example: All data leads to the sample being a watermelon, but you wrote down that the sample did not have seeds)

7. Name one person you are going to encourage to try a new fruit or vegetable and explain what you will say to convince them.

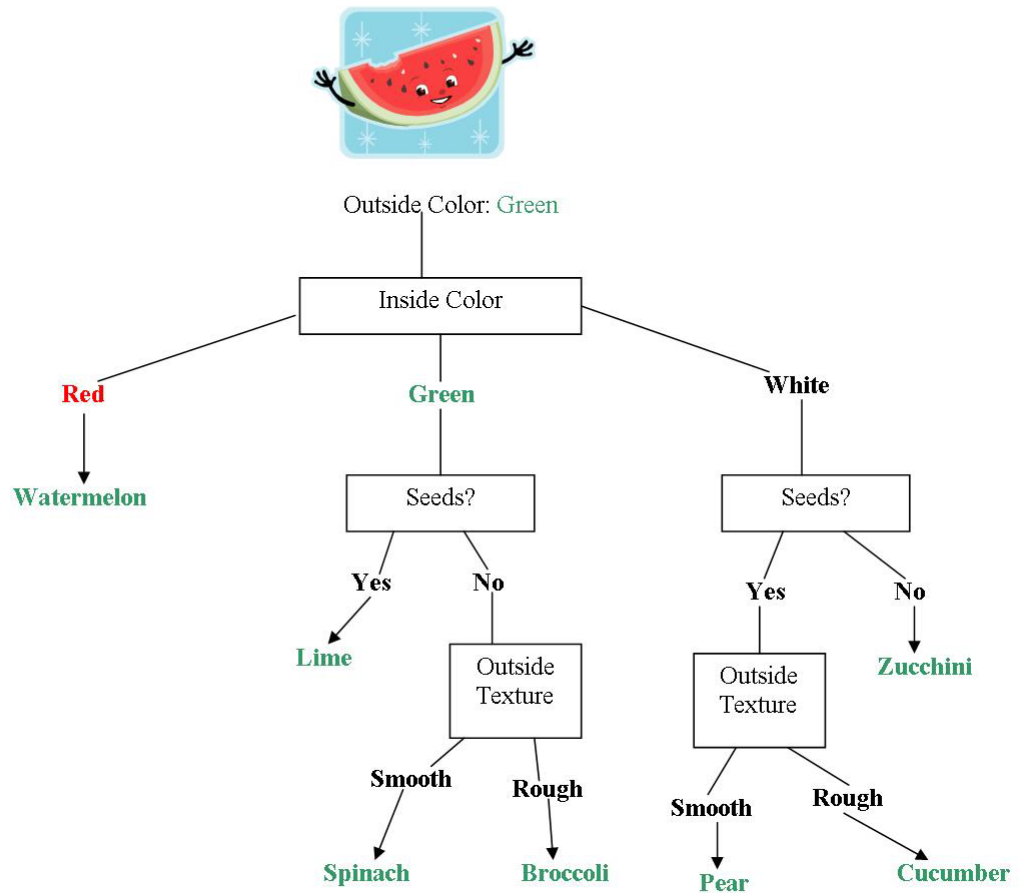
Discovering Fruits & Vegetables Through Classification



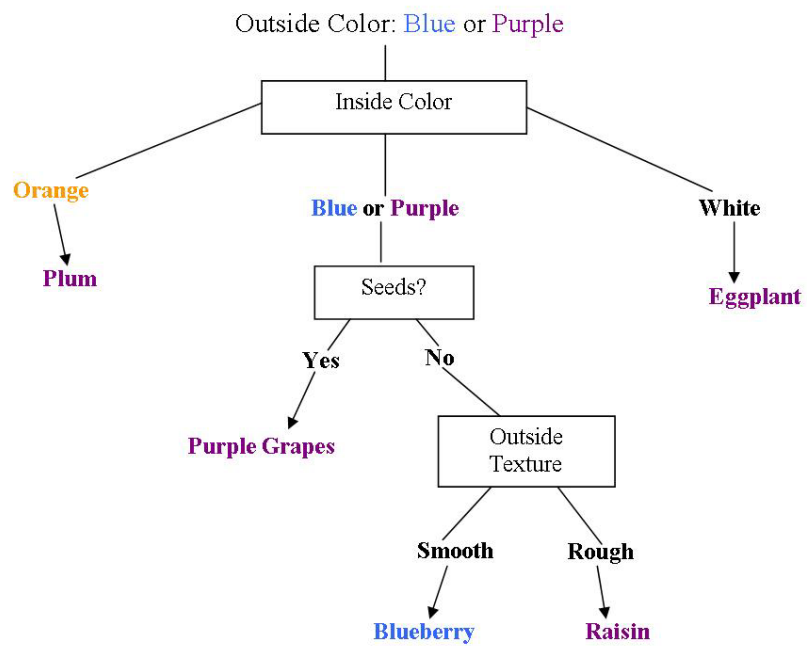
Discovering fruits & vegetables through classification



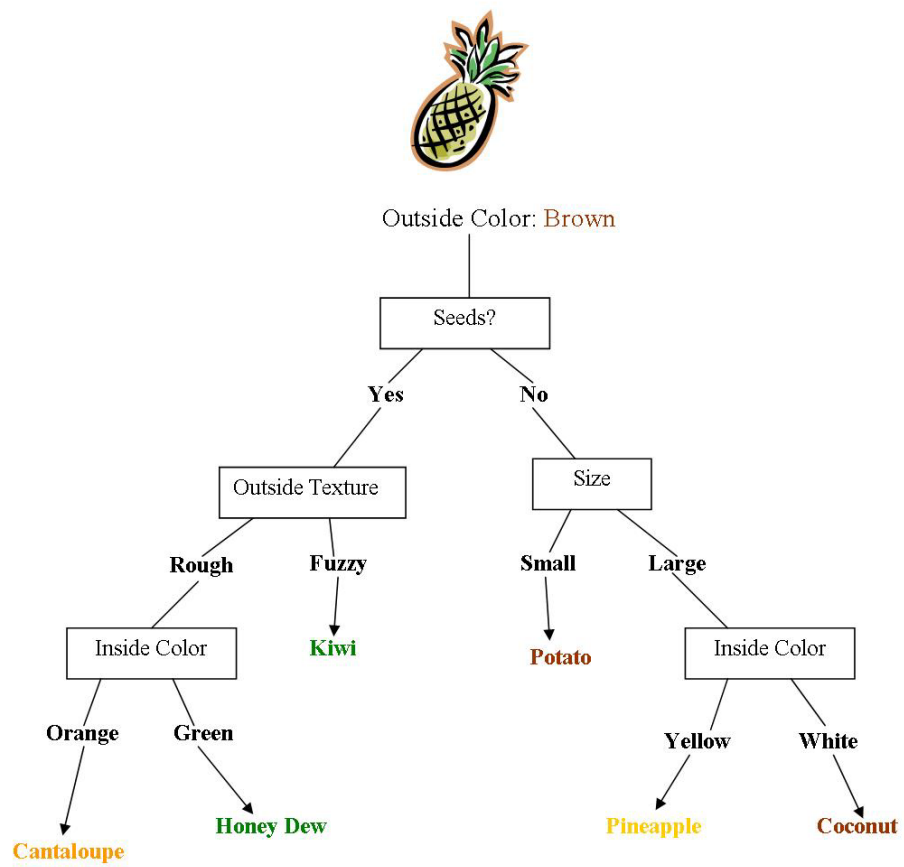
Discovering fruits & vegetables through classification



Discovery fruit & vegetables through classification



Discovering fruits & vegetables through classification



Lesson 14: 5 to 9 A Day

Established Goals:

National Health Education Standards:

5.5.5 Choose a healthy option when making a decision

6.5.1 Set a personal goal and track progress toward its achievement

7.5.2 Demonstrate a variety of healthy practices to maintain or improve personal health

7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks

8.5.1 Express opinions and give accurate information about health issues

Ohio Benchmarks (3-4 Program):

Mathematics: Number, Number Sense and Operation: IKLM, Measurement: C, Mathematical Processes: BF

Ohio Indicators (Grade 4):

Mathematics: Number, Number Sense and Operation: 9, 12,13,14; Measurement: 5,6

Understandings:

Students will be able to...

- Estimate the number of servings of fruit they are eating by comparing it to the size of a baseball.
- Use a recipe to find out how many servings of fruit or vegetables are in one serving of a food.
- Evaluate their diet to find out if they are getting enough fruits and vegetables each day.

Essential Questions:

- How can we use math in an everyday situation such as counting servings of fruits and vegetables?
- What is the best way to track fruit and vegetable intake when you have limited resources (no recipe, no measuring cup, etc)?

Learning Plan:

Materials*:

- 1-cup measuring cup
- Regulation-sized baseball (not a softball)
- 1-cup serving of a fruit or vegetable

*These items will also be needed for the estimating exercise.

Discussion:

Review from *Reading Nutrition Labels* what a *serving* and a *serving size* are. If the aforementioned lesson has not been done, then a *serving* or a *serving size* may be a new concept for your students. The definitions are:

Serving = one portion or helping of food that is eaten at one sitting or at one time.

Serving Size = is the amount of a particular food that equals one serving

Do the students recall how a *serving size* varies for different foods? A quick and easy way to explain that a serving size varies is to describe a nutrition label. All foods that come in boxes, bottles, wrappers or other packages always have a nutrition label on them that will tell you this information. How do you know what a *serving size* is for foods that do not come in packages with nutrition labels on them (i.e., fresh fruits)?

According to the United States Department of Agriculture, a *serving size* for fruits and vegetables is one cup. The 1-cup measuring cup should be displayed at this point in the discussion. One *serving* of fruit or vegetables would fit into the measuring cup. (You may wish to cut up fruit and put it in the measuring cup to let students see what constitutes a *serving*.)

What if you do not have a measuring cup? How could the students **estimate** a *serving*? One cup of fruit or vegetables is roughly equal to the size of a baseball. Show the students what a baseball looks like. What is an **estimate**?

Estimate = an approximate judgment of (*in this case*) a serving size

How many servings of fruits and vegetables should you eat in one day? Health experts say that you should try to eat 5 to 9 servings per day. This does not mean you need to eat 5 to 9 servings all at one time. The servings can and should be spread out throughout the day. They should be incorporated into all of your meals, including snacks.

How do you know how many servings of fruits and vegetables are in the foods that you eat? You can use two methods: Conversion and estimation. Use the next two learning activities to demonstrate each method.

Learning Activity: Converting a recipe into servings

Materials:

- Worksheet with recipe and questions, one per student or group (or a transparency that has the recipe and questions)
- Pencils

Directions:

1. Explain to students that one way of finding out how many fruit and vegetable servings you get from a food is to convert the recipe into cups, since we know that one serving = one cup.
 2. Either individually, in groups or as a class, use the recipe on the worksheet to calculate how many servings of fruits and vegetables are in the recipe and then how many servings are in one serving size of the recipe. **The Summer Salad recipe is easier than the Vegetable Lasagna recipe. You may want to go through the Summer Salad recipe together as a whole class and then have the students work on the Vegetable Lasagna recipe individually or as homework.*
 3. To calculate:
 - Identify what ingredients in the recipe are fruits or vegetables.
 - Convert the fruit and vegetable amounts into cups.
 - Add the total number of cups of fruits and vegetables.
 - Divide by the number of servings the recipe makes. Your answer is the number of cups of fruits and vegetables in one serving of the recipe.
- Explain to students that this method works best before you have the actual food in front of you, when you are getting ready to eat. You need to have a recipe to use this method.

Summer Salad

Conversion Worksheet

Conversion Key:

1 cup = 8 oz (1oz = 1/8 cup)

Summer Salad

Serves: 4

32 ounces spinach leaves

16 ounces strawberries

1 cup onions

8 ounces oranges

Combine all ingredients in a large bowl. Add lemon poppy seed dressing.

Figure out how many servings of fruits and vegetables you get from eating **one** serving size of the recipe.

1. List the fruits and vegetables from the recipe:

•Fruits:

•Vegetables:

2. Convert the recipe so that all the fruit and vegetable amounts are in cups.

•Fruits:

•Vegetables

3. Add the total number of cups of fruits and vegetables.

•Total cups of fruit:

•Total cups of vegetables:

4. Divide the total number of cups of fruits and vegetables by the number of servings the recipe makes.

• (a) Fruits:

• (b) Vegetables:

5. Write your answer to 4a here _____. You will get this many servings of **fruit**.
Write your answer to 4b here _____. You will get this many servings of **vegetables**.

Vegetable Lasagna

Conversion Worksheet

Conversion Key: 1 cup = 8 oz (1oz = 1/8 cup)

Vegetable Lasagna

Serves: 6

4 lasagna noodles	2 teaspoons olive oil
1 cup head fresh broccoli, chopped	2/3 cup carrots, thinly sliced
1/2 cup large onion, chopped	1/3 cup green bell peppers, chopped
2 cup small zucchini, sliced	2 tablespoons and 2 teaspoons all-purpose flour
1 cup milk	1/4 cup parmesan cheese, divided
1/2 cup red grapes	16 ounce package chopped spinach
1/8 teaspoon salt	1/2 pound ricotta cheese
8 oz container small curd cottage cheese	
3/4 cup and 1 tablespoon and 1 teaspoon Shredded mozzarella cheese, divided	

Figure out how many servings of fruits and vegetables you get from eating **one** serving size of Vegetable Lasagna.

1. List the fruits and vegetables from the recipe:

•Fruit:

•Vegetables:

2. Convert the recipe so that all the fruit and vegetable amounts are in cups.

•Fruit:

•Vegetables:

3. Add the total number of cups of fruits and vegetables.

•Total cups of fruit:

•Total cups of vegetables:

4. Divide the total number of cups of fruits and vegetables by the number of servings the recipe makes.

•(a) Fruit:

•(b) Vegetables:

5. Write your answer to 4a here: _____. You will get this many servings of **fruit**.
Write your answer to 4b here: _____. You will get this many servings of **vegetables**.

Learning Activity: Estimating fruit and vegetable servings

Materials:

- Baseball
- 1-Cup measuring cup
- Several whole fruits and vegetables cut up into small pieces
- Foods that visibly combine fruits and vegetables with other foods, such as vegetable pizza or salad
- Plates to put the cut-up pieces of fruits and vegetables

Preparation:

1. Cut up some of the fruits and vegetables and place different amounts of them on plates. Record how many servings of each fruit or vegetable you are placing on each plate.

Directions:

1. Explain to the students that estimating servings of fruits and vegetables by looking at them is an easy way to keep track of your daily servings when you do not have the recipe to look at.
2. Be sure that the students recall that 1 cup = 1 serving
3. Remind the students that 1 cup is approximately the **size** of a baseball. If the serving, whole or cut-up, is about the **size** of a baseball, it is 1 serving. Make sure that students know how to distinguish between **size** and **weight**.
4. Pass around the baseball so that the students can get a feel for its actual size.
5. After you get the baseball back, put it out of the students' view. Have the students estimate how many servings of fruit or vegetables are in each sample.
6. For each sample:
 - Carry it or pass it around the room so that the students can get a close look at it.
 - Ask students how many servings they believe are in the sample.
 - Reveal the correct answer. Measure the samples of cut-up fruits and vegetables with a 1-cup measuring cup.

Assessment Evidence:

5 to 9 a day Worksheet: Students will fill out the “Am I getting my 5 to 9 a day?” chart for one week. Then, they will answer the questions that follow it. The charts and questions should be kept in the students' journals.

Am I getting my 5 to 9 a day?

Directions:

Fill out the following chart for each day of the week. Write down all the fruit or vegetables that you eat for each meal. Count up how many servings of fruit or vegetables you have each day. Remember that a *serving* is equal to **1 cup** or about the size of a baseball. Remember, an 8oz. glass of 100% fruit juice counts as a serving of fruit.

Monday

Breakfast: # of servings: _____	Lunch: # of serving: _____	Dinner: # of servings: _____	Snacks: # of servings: _____	Total number of servings of fruits & vegetables for Monday:
---	--	--	--	--

Tuesday

Breakfast: # of servings: _____	Lunch: # of serving: _____	Dinner: # of servings: _____	Snacks: # of servings: _____	Total number of servings of fruits & vegetables for Monday:
---	--	--	--	--

Wednesday

Breakfast: # of servings: _____	Lunch: # of serving: _____	Dinner: # of servings: _____	Snacks: # of servings: _____	Total number of servings of fruits & vegetables for Monday:
---	--	--	--	--



Thursday

Breakfast:	Lunch:	Dinner:	Snacks:	Total number of servings of fruits & vegetables for Monday:
# of servings: _____	# of serving: _____	# of servings: _____	# of servings: _____	

Friday

Breakfast:	Lunch:	Dinner:	Snacks:	Total number of servings of fruits & vegetables for Monday:
# of servings: _____	# of serving: _____	# of servings: _____	# of servings: _____	

Answer the following questions after you have completed your charts for the entire week.

1. Did you eat at least five servings of fruit and vegetables any day of the week? Which days? _____
2. Did you do anything different to make sure you got 5 to 9 servings of vegetables each day or did you stick to your normal foods? _____

3. If you didn't get 5 to 9 servings, what can you do differently? _____

4. Explain why it is important to get 5 to 9 servings a day. _____

Lesson 15: The Importance of Breakfast

Established Goals:

National Health Education Standards:

- 3.5.1** Identify characteristics of valid health information, products and services
- 3.5.2** Locate resources from home, school and community that provide valid health information
- 4.5.4** Demonstrate how to ask for assistance to enhance personal health
- 5.5.1** Identify health-related situations that might require a thoughtful decision
- 5.5.4** Predict the potential outcomes of each option when making a health-related decision
- 5.5.5** Choose a healthy option when making a decision
- 8.5.1** Express opinions and give accurate information about health issues
- 8.5.2** Encourage others to make positive health choices

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Research Standard: ABCD, Communications: Oral & Visual Standard: EFG

Ohio Indicators (Grade 4):

English Language Arts: Acquisition of vocabulary: 1, Writing Processes: 1,3,4,16; Reading Process: 4,5; Writing Applications: 4; Writing Applications: 4; Research: 1,2,3,6; Communication: Oral and Visual: 8 a-f

Understandings:

Students will understand...

- Why it is important to eat a healthy breakfast.
- How skipping breakfast can have a negative impact on your health and your day.
- The concept of a complete breakfast.

Students will be able to...

- Evaluate information about breakfast food and express an opinion on its nutritional value.
- Present information on a breakfast product based on research.
- Identify ways to overcome barriers to eating breakfast.

Essential Questions:

- Are the students in a home environment that is conducive to eating breakfast on a regular basis? What other options are available? (A breakfast program at school, etc)
- What is the difference between breakfast and a healthy breakfast?

Learning Plan:

Discussion:

•What does breakfast mean?

Students should understand that breakfast is a compound word, meaning it is two words together to make one word. It consists of the words 'break' and 'fast.' Each word has several definitions. If time allows, have the students use dictionaries to find the definition of each word. Discuss the various definitions and determine which ones apply. The following definitions should be used:

Break = to separate or divide

Fast = to abstain from food; to not eat for a certain amount of time

Emphasize the importance of breakfast. As we sleep, you are fasting, but your body is still using the energy inside of it. Energy is the power or ability to be active. We give our bodies energy through food. Breakfast replenishes the energy that your body has been using up all night. During sleep, your body uses energy from the day before. When you wake up, your body is low on energy. In order to have enough energy until lunch, your body needs breakfast.

Use this analogy to emphasize the concept above: Let's say that someone left a car with a full tank of gas in the garage overnight. However, they left the engine on, so the engine is using up all the gas the whole night, even though it is not moving. In the morning, the tank of gas will be almost empty. The car will then not be able to go very far without refueling.

Your body is like the car. Even though you are not moving while you sleep, your engine (your heart, lungs, brain and other organs) are still working and doing their jobs throughout the night. You need to refuel your body and "fill your energy tank" by eating food when you wake up.

•What are the consequences of skipping breakfast?

- You do not have enough energy, you feel tired and you fall asleep when you should be awake.
- You feel cranky, grumpy or irritable.
- Your stomach grumbles or aches.
- You feel nauseous, dizzy or faint.
- You have a hard time concentrating.

Why might some people skip breakfast?

1. They are in a rush to get to school or the bus stop or maybe they woke up late.
2. They do not feel hungry right after they wake up.
3. They do not have "breakfast" foods at home or do not like breakfast food.
4. They do not have much food at home.

What are ways to overcome the barriers to eating breakfast listed above?

1. Many people skip breakfast due to lack of time. These students should focus on using better time management to overcome this barrier. They can:
 - Set your alarm clock 15 minutes early to avoid being rushed and to give yourself ample time to eat before leaving home.
 - Keep a box of granola bars (or another breakfast bar) in your locker, desk or with the teacher in case you do not have time to eat before leaving home.
 - Have your lunch packed, clothes picked out and homework done before going to bed. This will save time in the morning and allow for more time to eat breakfast.
2. Some people do not like to eat right away when they wake up. Students can get ready for school before eating to give themselves a little time to feel hungry. They can also take breakfast with them to school, like mentioned above.
3. Many people do not like typical breakfast foods such as cereal, toast, oatmeal or eggs. Breakfast does not have to be typical breakfast foods. Kids can eat leftovers from dinner, fruits, or any other food that is nutritious. Breakfast is about getting energy, not about eating any one particular food.
4. Students should be made aware of any breakfast programs that their school may offer. Students may also want to eat part of their lunch for breakfast if they have packed a lunch.

•What is a *healthy* breakfast?

A healthy breakfast is one that has many nutrients. Whatever students choose to eat for breakfast, whether it is a typical breakfast food or not, should be:

- Low in sugar
- High in vitamins

It is also good to aim for:

- High fiber
- High protein

A very healthy breakfast will include:

- 100% fruit juice
- And/Or
- A serving of fruit

Learning Activity: Breakfast Habits

Use the following worksheet to get students looking at their own breakfast habits.

It's Breakfast Time!



Name _____

Answer the following questions and set a breakfast goal for yourself at the bottom of the page.

I eat breakfast _____ days a week.

My favorite food to eat for breakfast is _____.
(Remember, it does not have to be an actual breakfast food)

I think this food is healthy/unhealthy (circle one) because _____
_____.

I first started eating this food _____.

I know that if I skip breakfast, these things might happen:

1. _____
2. _____
3. _____

Breakfast is important because _____.

I have made the following breakfast goal for myself:

I will work very hard to accomplish my goal. I will use small steps to accomplish my goal. I will reward myself for doing a good job and for reaching my goal.

Assessment Evidence:

Breakfast Food Consumer Report

Students will choose a breakfast food to research. They will then design and write a consumer bulletin based on their findings. Suggested products/foods for this assignment include:

Cereal + milk (must choose a specific one)
Pancakes (with syrup)
Pop Tart
Biscuits
Eggs
Sausage
English muffin

Oatmeal
Waffles (with syrup)
Toaster Strudel
Doughnuts
Bacon
Bagels
Breakfast bar (Nutrigrain, etc)

The report should answer the following questions:

1. What are the ingredients? (List them in order)
2. What is the sugar content? (This will be stated in grams on the nutritional label and the symbol for grams is g)
3. What is the fiber content? (Also listed on the nutrition label in grams)
4. Does the food have any vitamins? Which ones? What percent (%) of the daily value does that food provide?)
5. How much is one serving?
6. Any other important health information that would be important for consumers.

After answering these questions, make a recommendation for consumers. Is eating this food a good way to start the day? Use the following grid to determine whether or not you should recommend the food:

Question	Answer: YES	Answer: NO
Is sugar (or high fructose corn syrup) one of the 3 main ingredients?	+ 0	+ 1
Does it contain at least 3 grams of fiber?	+ 1	+ 0
Does it contain at least 3 essential vitamins? (Example: A, C, D)	+ 1	+ 0
Does it contain at least one of the two: calcium or protein?	+ 1	+ 0

If your food got 3+ points, you should recommend the food.

If your food got 2 points or less, you should NOT recommend the food.

Along with your recommendation, please include the following:

- Is this food by itself a complete breakfast? Explain. What could be added to it to make it healthier?
- Decide whether this breakfast item would be good to have before school or whether it would be better for the weekend. Consider:
 - The time it takes to make the food.
 - Sugar content. Foods with a lot of sugar might be better on the weekend because you have more time to be active on the weekends.
- If you have tried the food, rate its taste. (Give it the thumbs up or thumbs down)

Presenting your research: Create one of the following:

- Poster
- Brochure
- Bulletin
- News cast
- TV advertisement

Make sure your report includes your information sources **and** a copy of the nutrition label.

Additional Resources:

Breakfast Food Consumer Report websites to use:

www.cheerios.com

www.pillsbury.com

www.generalmills.com

www.krispykreme.com

www.kellogs.com

www.quakeroatmeal.com

www.eggowaffles.com

www.thedailyplate.com

www.aeb.org (American Egg Board)

Lesson 16: Snack Math

Established Goals:

National Health Education Standards:

3.5.1 Identify characteristics of valid health information, products and services

5.5.1 Identify health-related situations that might require a thoughtful decision

5.5.1 Choose a healthy option when making a decision

7.5.2 Demonstrate a variety of healthy practices and behaviors to avoid or reduce health risks

Ohio Benchmarks (3-4 Program):

Mathematics: Number, Number Sense and Operations: FK, Data Analysis and Probability: ABC, Mathematical Processes: GJ

Ohio Indicators (Grade 4):

Mathematics: Number, Number Sense and Operations: 8,12; Data Analysis: 1,2,5

Understandings:

Students will understand...

- The importance of reading nutritional information before choosing a snack.
- That a nutrition label is a display of data that has been collected by investigators.
- The importance of choosing snacks that are low in fat, sugar and/or salt.

Students will be able to...

- Extract data from a nutrition label, organize it, and display it in a graph.
- Demonstrate the ability to make healthy snack choices.
- Solve problems involving money and count change using coins and paper bills.

Essential Questions:

- How can we use math to help us make a health-related decision?
- What do we need to know about a snack to be able to decide if it is healthy?

Learning Plan:

*Note to teacher: Be sure you have shared the *Reading Nutrition Labels* lesson with your students before attempting this activity.*

Learning Activity: Data Analysis

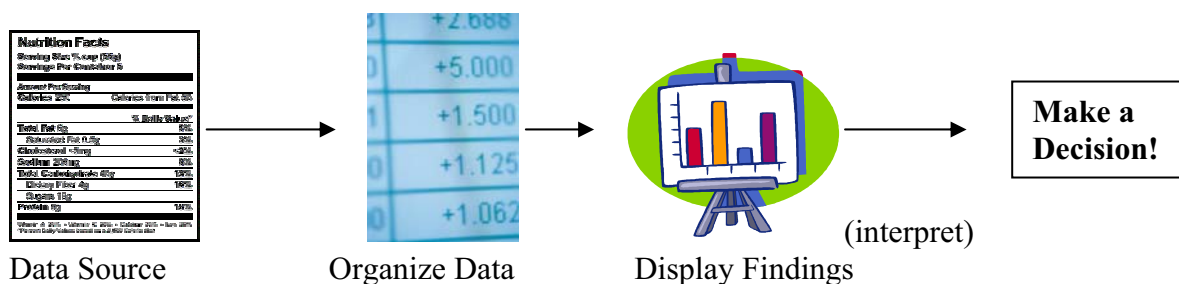
Students should create a plan for collecting and analyzing data to make healthy decisions about snack consumption. Give the students the following information:

Goal: To determine which snacks are the healthiest/best choices based on nutritional information.

Data Source: The nutrition label. Nutrition labels are simply a display of data that researchers have discovered about a food or drink.

Question: What is the fat, sugar and salt (sodium) content of the foods in this activity?

The students will find out the necessary information and organize their answers. After their data is organized, they will need to figure out a way to display their results. After the data is displayed, they will need to interpret the data and choose three healthy choices for snacks. The process should mimic the following model:



The students can use the following worksheet to organize their data. The questions at the bottom of the worksheet will help them determine how they will display their findings. They will also place their final snack choices at the end of the worksheet.

After completing the worksheet (except for their three snack choices), give them the worksheet to make their graphs. The graphing worksheet only allows them to make bar graphs. Therefore, if they have the worksheet ahead of time, they might be able to guess the answer. Go over their choice(s) of graphs before they actually make them. Explain why a bar graph is best. Furthermore, explain why two graphs are necessary; Increments measured with different units can't go on the same graph.

Bring in nutrition labels from home or find some on the internet and print them off.

Data Analysis: Snacks

Name _____

Directions: Fill in the information below to help you find three snacks that are healthy.

What is your source for data? _____

What are you trying to discover about the food?

Place your data findings below:

Snack food	Fat g	Sugar g	Salt mg

Displaying your data:

How can you display your data so that you can compare the fat, sugar & salt content for each for all at once? (Hint: choose the best kind of graph) _____

What units are used to measure fat on the nutrition label? _____

What units are used to measure sugar on the nutrition label? _____

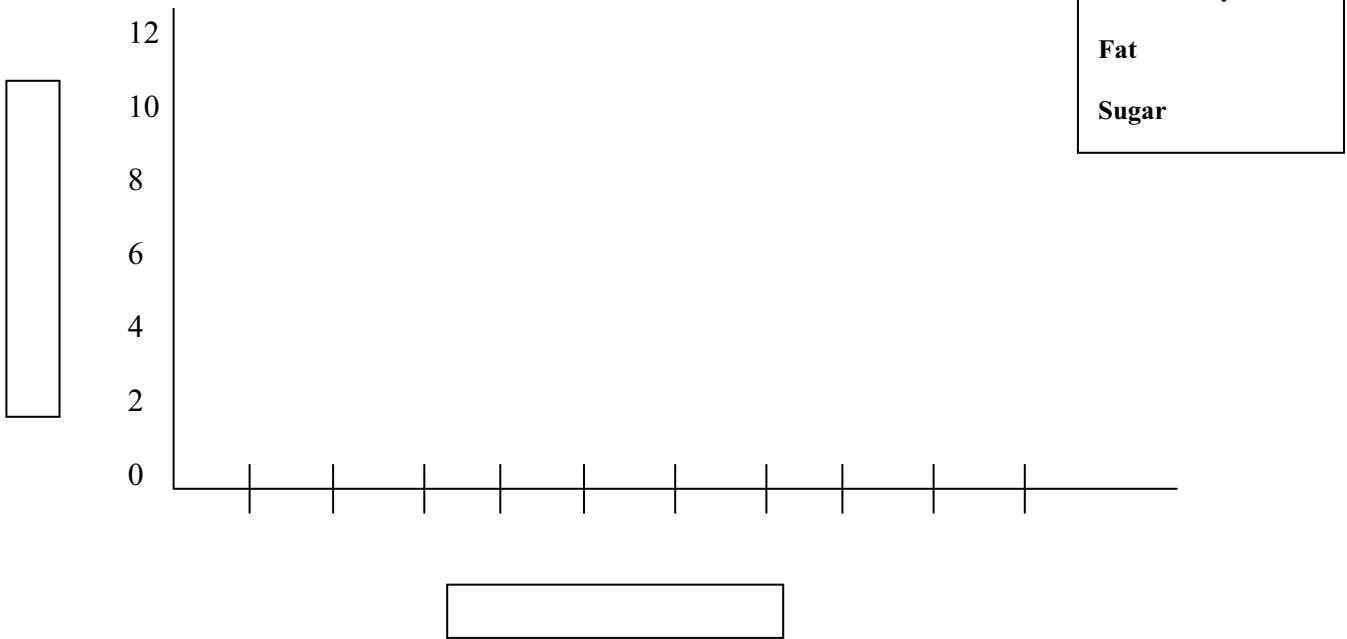
What units are used to measure salt (sodium) on the nutrition label? _____

Can you put all of the above on the same graph or will you need more than one graph? Explain. (Hint: Looks at the units of measurement) _____

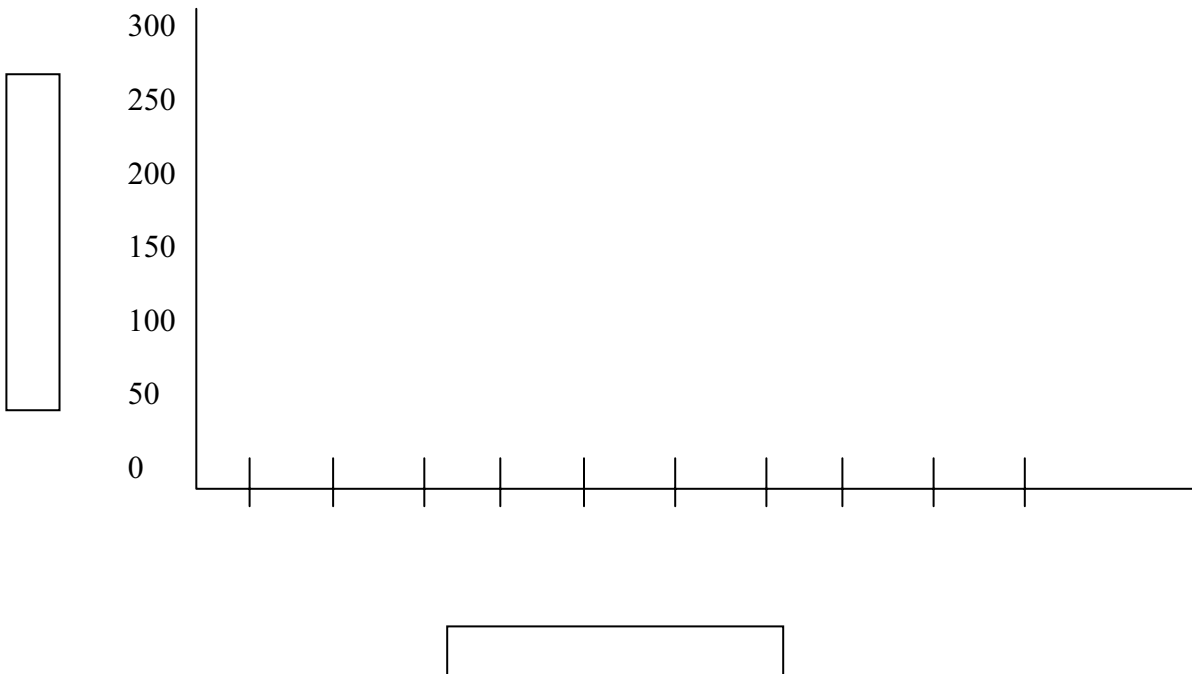
Based on an analysis of your data, what are three healthy snacks? _____

Display your data on this page. (Make sure you use labels!)

Graph #1: Title _____



Graph #2: Title _____



Learning Activity: Snack Shop

Materials:

1. Enough currency (paper bills) for each student to have \$10 (a ten-dollar bill)
2. Enough currency for the students to make change for the students' purchases. (They will need \$1 bills and coins)
3. Round 1 price tags with pictures (several copies)
4. Round 2 price tags with pictures (several copies)
5. 2 receipt worksheets for each student

Preparation:

1. Print out currency and price lists.
2. Cut out currency and price tags.

Directions (Round 1):

1. Students should be matched in pairs. The student purchasing food will have a ten-dollar bill and the student making change will have several ones and quarters.
2. One student will be the cashier and one student will purchase snacks.
3. The student purchasing the snacks will need to choose 5 snacks, one for each day of the week. They can choose a snack more than once.
4. The student will choose whatever s/he desires and the cashier will write a receipt, total the purchase and make change.
5. Then the students will switch roles and repeat steps 3 & 4.

***Note:** The students should choose snacks based on desire in the first round. The prices are set so that students can purchase five snacks for \$10, without having to choose foods with nutritional value.

Debrief (Round 1):

1. Students should lay their food choices in front of them. Ask if any of their choices would be found on the food guide pyramid. Which foods? If they chose foods that are not included on the food pyramid, ask why they chose them. Will they be able to get a lot of nutrients from those foods? Explain.
2. Have the students raise their hand if they had **more than** \$2 left after purchasing five snacks. Ask them what foods they chose. This should show the class that students who made at least a couple healthy choices had money left over.
3. Have the students raise their hand if they had no money left or less than \$2. Ask the students what foods they chose. This should show several unhealthy choices.
4. Students who had \$2 or more left over should be given a reward. (optional)
5. Snacks are one way of putting energy and nutrients into our bodies. If snacks don't have a lot of nutrients, how will we get the nutrients we need? If you have eaten very well throughout the day, you may be able to choose a snack with fewer nutrients.

Directions (Round 2):

1. Students are going play Round 2 exactly the same way they played Round 1. However, they have a different price list.
2. Students can't spend more than \$10. In round 2, the snack prices for foods without a lot of nutrients have increased. They will have to buy at least a few healthy foods.
3. There is no prize this round.

Debrief (Round 2):

1. In order to spend less than \$10, everyone had to buy at least two healthy foods. Hold up what you bought that you think is healthy.
2. Do you think you made better choices the first or the second round?
3. Do you think you will feel better after eating your choices from the first or the second round?

Learning Activity: Poem

Have students write a poem about snacks. Somewhere in the poem you must include:

- Your favorite snack
- A snack that is healthy (make sure your readers know it's healthy)
- A snack to avoid (make sure readers know it's unhealthy)
- Why healthy snacks are important.

The poem can take any form. There is a sample poem below.

Sometimes I eat fruit

No one should have a sundae for a snack

Apples are a great choice

Crackers are my favorite, especially when they're graham crackers!

Keep a list of healthy foods to try

Share your healthy snacks, their nutrients make us strong!

Assessment Evidence:

Completed Data Analysis worksheet

Completed graphs

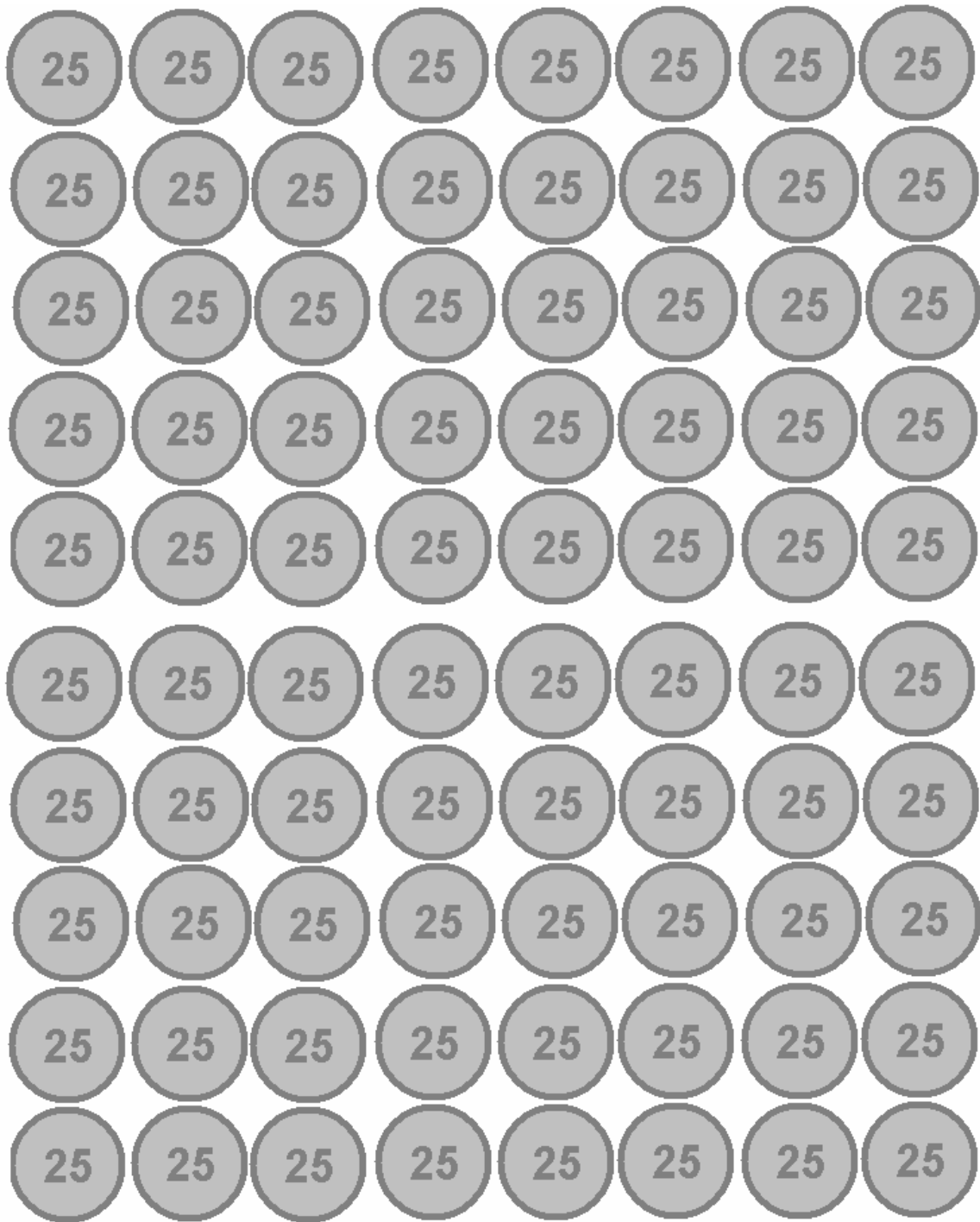
Poem

Currency: Snack Shop









Price Tags: Round 1



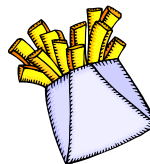
**Ice Cream
Sundae
\$1.75**



**Potato
Chips
\$2.00**



**Chocolate
Candy bar
\$1.75**



**French
Fries
\$2.00**



**Soda Pop
\$1.25**



**Doughnuts
\$1.75**



**Banana
\$.25**



**Trail
Mix
\$1.00**

Price Tags: Round 1 (Continued)



**Yogurt
\$.75**



**Bottled
Water
\$.50**



**Apple
\$.50**



**Orange
\$.25**



**Pretzels
\$.75**



**Apple
Juice
\$1.00**



**Brownies
\$2.00**



**Cookies
\$1.25**

Price Tags: Round 2



**Ice Cream
Sundae
\$2.75**



**Potato
Chips
\$3.00**



**Chocolate
Candy bar
\$2.75**



**French
Fries
\$3.50**



**Soda Pop
\$3.00**



**Doughnuts
\$3.00**



**Banana
\$.25**



**Trail
Mix
\$1.00**

Price Tags: Round 2 (Continued)



**Yogurt
\$.75**



**Bottled
Water
\$.50**



**Apple
\$.50**



**Orange
\$.25**



**Pretzels
\$.75**



**Apple
Juice
\$1.00**



**Brownies
\$3.00**



**Cookies
\$2.75**

Lesson 17: Food is our Energy Source and More

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>2.5.2 Identify the influence of culture on health practices</p> <p>2.5.6 Describe how technology can influence personal health</p> <p>3.5.2 Locate resources from home, school and community that provide valid health information</p> <p>8.5.2 Express opinions and give accurate information about health issues</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>Social Studies:</i> History: A, People in Societies: AB, Geography: C, Social Studies Skills and Methods: B</p> <p><i>English Language Arts:</i> Writing Process: BCD, Writing Application: D, Writing Conventions: ABCD, Research: ABCD, Communications: EFG</p> <p><i>Technology:</i> Technology and Society Interaction: E, Technology & Productivity Applications: B</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p><i>Social Studies:</i> People in Societies: 1 (f) & 3, Geography: 5, Social Studies Skills and Methods: 1,8,9</p> <p><i>English Language Arts:</i> Reading Process: 4,5; Reading Applications- Informational, Technical & Persuasive Text: 2-5; Writing Processes: 1-16; Writing Applications: 4; Research: 1-4,6; Communications: 8 (a-f)</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •That food is an energy source for human beings. •Agriculture and farming provide humans with foods from all five food groups. •Food is necessary for humans to survive •Farming has been an important part of Ohio industry throughout history and in the present. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Discuss the impact that agriculture has on our culture. •Identify how food and agriculture impact our health. •Describe the difference between unprocessed and processed foods.
Essential Questions:	
<ul style="list-style-type: none"> • How does the food industry affect our lives and our health? •How has the culture of food changed over time? •How has technology changed the food industry? 	

Learning Plan:

Background:

The food industry, including agriculture and farming, has changed dramatically over the past century. Although we have shifted from a society that depends on agriculture to a society that often depends largely on processed foods (fast food, frozen foods, etc), agriculture is still the largest industry in the state of Ohio. According to the Ohio Department of Agriculture, food and agriculture is a 73-billion dollar industry, 44% of land in Ohio is classified as prime farm land and 1 in 7 people is employed in some aspect of agriculture. Therefore, it is important for children to understand just exactly where does the food we put into our bodies come from? How have the changes in the industry impacted our lives and our health? Access to food is better, but what has happened to the quality of the food we eat? Through research, students will talk about how the food industry has changed, where agriculture is prominent in Ohio, and the importance of agriculture for our health.

Discussion:

What is food and why do we need it?

Food = a substance that is put into our bodies to sustain life, provide energy and promote growth.

Without food, people would not survive. Food contains calories, and our bodies turn calories into energy. Energy gives us the ability to do work. If our bodies do not get enough calories, our organs will begin to shut down and we will not be able to function. As we go through the day, our bodies use up energy gained from the last meal that we ate. So, we become hungry and we need to eat again. That is why it is important to eat three meals a day and eat a snack if necessary. The more energy we use up, the more we need to eat. So, if we do a lot of physical activity, we will need to eat more. If we are not very active, then we will eat less.

All living things need food to survive. All living things belong to a process called a food chain. The food chain works like this:



The sun is the energy source for plants. Plants use a process called photosynthesis to use the energy from the sun to mix up water and carbon dioxide and turn it into sugar. The sugar is the plant's food.



- Animals get energy from plants such as grass (and from other animals if they are carnivores).
- People get energy from eating plants, animals and animal products (milk, meat, eggs, etc)

Agriculture v. Processed foods

Agriculture = cultivating land and raising livestock; farming

Think of agriculture in terms of the five food groups. Farmers grow food and raise livestock (cattle, sheep, chickens, etc) in order to provide the foods we need from the five food groups.

Fruits: Fruits are grown all over the world, and many different fruits are grown in Ohio. A large area of land is usually designated for a particular fruit, such as a strawberry patch or an apple orchard.

Vegetables: Many vegetables are common to Ohio. Have you ever seen a cornfield? What else grows in Ohio?

Grains: Grains are what make bread, cereal and pastas. Grains are also used to feed livestock. Grains are often considered a “staple” food, which means they are the main means of survival for many people. Grain is also turned into a product called flour. Flour is a main ingredient in bread, muffins, cakes, cookies and more.

Meat and Beans: Beans grow in a field the same way grains, fruits and vegetables do. Meat comes from animals that are raised on a farm, such as cattle (beef), chicken, turkeys, and pigs (pork, bacon, ham). Chickens also give us eggs.

Dairy: Dairy products, such as milk, cheese and yogurt come from cows and goats.

People who work on farms work 365 days a year and often work from sun-up to sun-down in order to provide food for not only their community or state, but their country and the rest of the world. Food products produced in Ohio help to feed people all across America and sometimes in other nations. Agriculture is Ohio’s largest industry.

What about food that is not made from plants or animals on farms? These foods are called processed foods. Processed foods include potato chips, fast food, frozen food, soda pop, candy, much more. Many foods that are grown on farms become processed food after they are purchased from the farmer. For example, has anyone ever had chicken nuggets? The chicken was raised on a farm. The farmer then sold the meat to a company that sells chicken products. The chicken is breaded and prepared. After that, it is frozen and sent to grocery store, where you buy it and cook it again before eating it. Sometimes, unhealthy ingredients are added to the chicken to preserve it or keep it edible. Most food from fast food restaurants is prepared elsewhere, frozen and then sent to the restaurant. The food is often fried and then served to you.

- How do you think this affects the quality of the food?
- How do you think it affects how healthy or nutritious the food is?
- What are some benefits to not eating processed foods?

The agriculture and food industry through time.

Over time, the food and agriculture industry has changed quite a bit. This is due to major advances in technology, a largely increased population and the ability to mass produce food. Our lives have become busier, and as a culture, we want to spend less time preparing our meals and doing the grocery shopping. There are significantly fewer farmers today than there were 100 years ago and many more people to feed. The only way to understand the impact of the food industry on our lives and culture is to study what farming is like today compared to earlier times.

Learning Activity: Research Paper

The history of the food and agriculture industry and how it impacts our lives and our health.

Students will do an extensive research project on the history of the farming industry and its impact on our culture, our lives and our health. Their report should answer the following questions or areas:

1. Discuss how the farming industry in Ohio has changed over time.
 - a. Is farming/agriculture an industry that brought people to Ohio? Explain.
 - b. What differences has technology made for farming?
 - c. Discuss who has typically farmed throughout Ohio's history.
 - d. Discuss where farming occurs. What are the agricultural regions in Ohio?
 - e. **Make a timeline to present your findings for a-d.**
2. Describe how the farming industry has affected cultural practices of people who have come to Ohio.
 - a. Ohio has a lot of migrant labor. Discuss migrant labor and its affect on cultural practices in Ohio.
 - b. Have people come to Ohio specifically for opportunities in agriculture?
 - c. How do non-farming families participate in farm culture? (ex. State/county fairs)
3. Discuss why land in Ohio is good for farming.
 - a. What is the climate?
 - b. Why is the land/soil good for farming?
 - c. What is grown or raised in Ohio?
4. Explain the impact of farming on the physical environment.
 - a. pesticides
5. Why do you think less people farm to today than in the past?
6. How does farming remain an important part of our lives?
7. What role does farm life play in the value system of people in Ohio?

***This assignment is very time consuming. If you do not have the time to complete the assignment in its entirety, use the following suggestions to simplify it.**

1. Break the students into groups of seven students and have them work as a team. Each student in the group can answer one question. They can combine their research into a presentation. A written paper would be optional.
2. Break the students into seven different groups and assign a different research question to each group. The group can then present to the entire class and share what they learned. Again, the written paper would be optional.
3. Have the students interview someone in agriculture to briefly answer the seven questions. They can write down the answers they receive and share them with the class rather than write a report.

Assessment Evidence:

Completed research paper and timeline

- Timelines may be hand-written and should also include graphics to enhance the quality for presentation.
- The rest of the paper *should* be typed. Students should write a rough draft, submit the draft to the teacher or to a peer for review before turning in a final draft. If students do not have access to a computer, the reports should be neatly written and double spaced.

Presentation

- Students will present their findings to the class
- Students will use their timelines as a visual aide
- Students should give a clear and concise summary of their findings

Additional Resources:

Ancona, George. Harvest. New York: Marshall Cavendish, 2001.

Kushner, Jill Menkes. The Farming Industry. New York: Franklin Watts, 1984.

Spilsbury, Louise. Food and Agriculture. Chicago: Raintree, 2006.

Walpole, Brenda. Feeding the World. New York: Franklin Watts, 2000.

www.ohioagriculture.gov

Lesson 18: The Importance of Water

Established Goals:

National Health Education Standards:

- 2.5.2.** Identify the influence of culture on health practices and behaviors
- 2.5.6.** Describe ways technology can influence personal health
- 7.5.2.** Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health
- 7.5.3.** Demonstrate a variety of behaviors to avoid or reduce health risks
- 8.5.1.** Express opinions and give accurate information about health issues.

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions Standard: ABCD, Writing Process Standard: ABDEFGH, Writing Applications Standard: D, Writing Conventions Standard: ABCD, Research Standard: ABCD, Communications Standard: CE

Science: Science Technology: A

Technology: Technology and Information Literacy: BC

Ohio Indicators (Grade 4):

English Language Arts: Writing Process: 1-16, Writing Applications: 4,5, Writing Conventions: 1-13, Research: 1-3,6 Communications: 8(a-f)

Science: Science and Technology: 12

Technology: Technology and Information Literacy: 1-6; 1-4,

Understandings:

Students will understand...

- Water is necessary for all living things to survive
- Water is the largest component of the body and the earth

Students will be able to...

- Research topics related to a health issue
- Recognize how water relates to different cultures
- Recognize the importance of water and how it can affect health
- Identify how technology is used to solve health issues

Essential Questions:

- What role does water play in different societies and cultures?
- How has technology improved the well-being of humans in diverse settings?

Learning Plan:

Background:

In order to survive humans need water, food and shelter. These three basic elements provide a foundation for humans to sustain life. Since the earth is composed of 70% water, it has been argued that water is the most important of these elements. Without clean water to drink, a person cannot live longer than a couple of days. In comparison, a person can live for weeks without food and shelter. One major component of a functioning society in ancient times involved clean drinking water, and today some third world countries still are not afforded this necessity.

Discussion:

Invite students to brainstorm ideas about the composition of the earth and the human body. After students have discussed the different components of the earth and the human body, explain to the students that the body and the earth are mostly made of water.

Human Body: More than half of the human body consists of water.

Earth: 70% of the earth is made of water.

Note to Teacher: Students may find it difficult to understand that the human body is made mostly of water when humans have an epithelial (skin) outer covering. In order to illustrate this point you may choose to do the Fruit Demonstration Activity.

Ask students to identify the purpose of water. What do humans use water for and how does water benefit the human race? Humans need water to drink, and to clean their bodies as well as other objects. Water also serves as a tool to prevent dental cavities through fluoridation.

Learning Activity: Research Project

Divide the class into groups of five students. Each group is responsible for researching water as it relates to different cultures around the world and giving a brief presentation about their results. The students are allowed to use the library and the internet to gain useful information.

Within the group, have each student volunteer to complete a portion of the research project and presentation. The five duties include examining the culture, identifying the problem, discovering the impact of the water-health issue, recognizing the solution, and the references used for research.

1. Culture: background and history including population, location or region of the world, and land composition
2. Problem: water related health issue that affects the population
3. Impact: How does this health issue affect humans?
4. Solution: explain how technology from different area (transportation, communication, nutrition, healthcare, agriculture, entertainment, and manufacturing) could solve the problem
5. References: books, articles, and websites used in research and other suggestions to learn more about the topic

If students are having trouble identifying topics to research some, some examples include the lack of fluoridation in third world countries, clean drinking water, sewer systems, and polluted lakes, rivers, and streams.



Water is a pioneer which the settler follows, taking advantage of its improvements.

Author:

[Thoreau,](#)
[Henry David](#)

Fruit Demonstration

Fruit Demonstration

- This demonstration further explains the somewhat abstract concept that the human body is composed mainly of water, despite the fact that it is not seen due to our skin.

Materials:

- Grapefruit
- Sharp knife

Directions and Debrief:

1. (Cut open the fruit) Inform students that this grapefruit is like our bodies. On the outside, it is firm, solid, and can sit up on its own, but on the inside it is filled with water.
2. Slice the fruit and give a piece to each student, allowing them to feel the outside and the inside of the fruit. Discuss the structure of the fruit and how the peel or the outer covering of the fruit aids in protecting the more vulnerable parts inside of the fruit. Discuss how this concept relates to the human body and how the skin helps to protect the inner parts of the body.
3. Conclude by explaining to the students that the water that gives us shape and form is inside our body. If possible, dissect the grapefruit and extract the tiny bits of the grapefruit that actually hold the water and juices. These tiny pieces of the grapefruit illustrate how the water in the human body is encapsulated in the organs. In fact, that is the reason why we as humans are not like huge puddles or all wet and soggy.



Assessment Evidence:

Class participation**Journal Entry:**

Have students write a one page summary about the chosen health issue. Students should use all the information from the research to complete the one page summary. However, students can emphasize their portion of the health project in the summary. Include responses to the following prompt. How has what you've learned made you feel? How will you use the knowledge that you've learned in your everyday life? How is the information that you've learned meaningful or significant? The journal entry can be completed as an in-class assignment or as homework.

Presentation: Rubric**Presentation Rubric**

5 - Excellent	<ul style="list-style-type: none">• The student knows 8-10 facts about the importance of water.• The student demonstrates in-depth understanding of the relevant and important ideas.• Presentation is fully developed and includes specific facts or examples.• The response is exemplary, detailed and clear.
4 - Good	<ul style="list-style-type: none">• The student knows 5-7 facts about the importance of water.• The student has a good understanding of the topic.• The student includes some of the important ideas related to the topic.• Presentation demonstrates good development of ideas and includes adequate supporting facts or examples.• The response is good, has some detail, and is clear.
3 - Fair	<ul style="list-style-type: none">• The student knows 2-4 facts about the importance of water.• The student includes some of the important ideas related to the topic.• Presentation demonstrates satisfactory development of ideas and includes some supporting facts or examples.• The contribution is satisfactory. It contains some detail, but the response may be vague or not well developed and may include misconceptions or some inaccurate information.
2 - Poor	<ul style="list-style-type: none">• The student knows 1 fact about the importance of water.• Presentation contains misconceptions, inaccurate or irrelevant information.• The student may rely heavily on the group activity.• Contribution to discussion is poor and lacks clarity.
1 - Unacceptable	<ul style="list-style-type: none">• The student shows no knowledge or understanding of the topic.

Lesson 19: To Drink or Not to Drink

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>1.5.1 Describe the relationship between healthy behaviors and personal health</p> <p>5.5.4 Predict the potential outcomes of each option when making a health-related decision</p> <p>5.5.5 Choose a healthy option when making a decision</p> <p>5.5.6 Describe the outcomes of a health-related decision</p> <p>7.5.1 Identify responsible personal health behaviors</p> <p>7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks</p> <p>8.5.1 Express opinions and give accurate information about health issues</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>English Language Arts:</i> Writing Conventions Standard: ABCD, Writing Application Standard: D, Research Standard: BD, Communications: E, Writing Process Standard AB</p> <p><i>Sciences:</i> Life Sciences B, Scientific Inquiry: ABC, Scientific Ways of Knowing: ABC</p> <p><i>Mathematics:</i> Number, Number Sense and Operations: G, Data Analysis and Probability: ABCE</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p><i>English Language Arts:</i> Writing Applications: 5; Writing Conventions: 1-13; Communications: 8(a-f) Writing Process: 2,3 Research: 4</p> <p><i>Science:</i> Scientific Inquiry: 1-4,6; Scientific Ways of Knowing: 2,4;</p> <p><i>Mathematics:</i> Number, Number Sense and Operations: 12,13; Data Analysis and Probability: 1,2,5,8</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> • The difference between healthy and unhealthy beverages. • The benefits and consequences of drinking healthy beverages. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Follow instructions to complete an experiment using the scientific method. • Accurately complete each step of the scientific method. • Present scientific information to the class.
Essential Questions:	
<ul style="list-style-type: none"> • Can students use the scientific method accurately to provide evidence to support a hypothesis? • Why is it important to drink water, 100% fruit juice, and milk? 	

Learning Plan:

Background: As children age, they begin to consume more and more unhealthy beverages including pop and artificial fruit juices instead of water, milk and natural fruit juices. Taste tends to persuade the decision-making process of youth, and the concept of drinking healthy beverages is somewhat forgotten during the shift from adolescence to adulthood. However, what you drink affects your health, and neglecting to choose healthy beverages that serve as replenishment and provide necessary nutrients for the body results in negative consequences.

Discussion:

- Begin by brainstorming the meaning of nutrients and dehydration. Nutrients are substances that help nourish the body. Inform students that nutrients are responsible for helping hair, nails, teeth, and gums stronger and making skin clear and healthy. Nutrients give energy, help to speed up the healing process from illnesses and can help improve eyesight. Nutrients also aid in concentration and clarity in thinking. Dehydration occurs when you lose too much water from your body before you are able to replace water by drinking the recommended amount of water. The recommended amount of water to drink for children includes 3-5 glasses of water per day. Inform students that symptoms of dehydration include headaches, feeling hungry, irritability, tiredness, dizziness, and nausea.

- Create a list of beverages by identifying the students' favorite drinks or the beverages that students prefer to drink. Write the results on the chalkboard or on a transparency so that the children can see the different types of beverages. Did the students mention water, milk and 100% fruit juice in their responses? Ask the students if there is a difference between different types of fruit juices. Explain to students that although there are a variety of different beverages available to drink, water, 100% fruit juices and milk are the best beverages to drink because they provide nutrients and prevent dehydration.

- Water replenishes the body and prevents dehydration.
- 100% Fruit Juice has important nutrients including Vitamin C.
- Milk is an important source of calcium and can include Vitamin D that helps keep bones healthy and strong.

In contrast, pop and artificial fruit juices are not beneficial to drink.

- Pop aids in dehydration and bone calcium depletion.
- Artificial fruit juices do not have the essential vitamins and nutrients that are useful for helping the body stay healthy.

Explain to students that drinking water, 100% fruit juices, and milk will help in preventing dehydration and aid in acquiring nutrients that help keep your body healthy.

- To reinforce these concepts students will do three scientific experiments that will explore the concept of dehydration, and examine the nutrient concentration of beverages. Each experiment teaches the students how to use the scientific process to produce an evidence-based conclusion. Each experiment builds on the previous to improve scientific experimental skills. The first experiment focuses on writing a hypothesis. The second experiment focuses on following a procedure, and collection of data and the third

experiment involves writing a conclusion based on the results. Since there are three different experiments, each activity can be done separately.

Learning Activity: Sponge-Bobby Demonstration

Explanation of Experiment:

This demonstration helps to show that our bodies lose water while doing everyday activities and how it is important to drink water to stay hydrated.

Materials:

- 4" x 6" dishwashing sponge
- 4" x 6" gingerbread man cookie cutter (optional)
- Scissors (sharp enough to cut through a dishwashing sponge)
- Straw
- Cup of water
- Plate or paper towel on which to sit a moist sponge.

Preparation:

Take a 4" x 6" sponge and draw a man on it, like the outline of a gingerbread man. Cut the sponge-man out using scissors. Sit the sponge out for four days before using it in the lesson, so that it is dried out and stiff to begin the lesson.

Note to Teacher: This demonstration can conclude after several hours or several days, depending on how long it takes the sponge to completely dry out. Therefore, it is important that enough water is added to the sponge so that information can be collected at two time periods. Students should observe Sponge-Bobby in the wet stage and in the dry stage.

Directions:

1. Gather students around a table with a sponge, cup of water and plate.
2. Introduce them to Sponge-Bobby and explain that Sponge-Bobby is like us, because he is healthiest and feels his best when his body is full of water.
3. Pass the dry sponge around the class and discuss the texture of Sponge-Bobby. Emphasize that in this state, Sponge-Bobby is dehydrated and doesn't have any water.
4. Add water to Sponge-Bobby until he is full of water.
5. Have students write a hypothesis (guess) about what will happen to Sponge-Bobby. Have students keep observations in their journals.
6. Let Sponge Bobby sit until he is once again dry.

Learning Activity: Vitamin C Experiment

Explanation of Experiment:

In this experiment, each group will make an Iodine-Starch solution which will enable them to identify the beverage that has the most Vitamin C. The nutrient Vitamin C in each beverage will react with iodine, turning the Iodine-Starch solution from blue to clear. The beverage that has the most Vitamin C will require the least amount of drops to turn the Iodine-Starch solution from blue to clear. Orange Juice should have the most Vitamin C in comparison to Orange Kool-Aid. Therefore, orange juice should require the least number of drops to react with iodine, turning the solution from blue to clear. This reaction will demonstrate that some foods and drinks have more nutrients than others, even if they look and taste similar.

Materials:

For each group, you will need each of these things:

- Lab Sheet
- Writing materials
- Spray Starch
- 4 plastic cups per group
- Container of warm water
- 2 teaspoons per group
- Iodine
- 2 eye droppers per group
- Orange Kool-Aid and Orange Juice

Preparation:

Lay out the materials that the students will need for the experiment. Make sure to have warm water available for students to use for the Vitamin C Test Cups. Also, label two cups orange Kool-Aid and orange juice. Fill each cup with the correct beverage.

Directions:

1. Divide the class up into groups of 5 and have the students assign job responsibilities for each group member. The duties include 2 juice testers, 1, solution maker, 1 recorder and 1 observer. Ask students to predict the amount of drops of each beverage required for each solution to turn from blue to clear. Write some of the predictions on the chalkboard. Have the students fill in the “Hypothesis” on their Lab Sheets.
2. After students have made their hypotheses and checked the materials using the checklist on the Lab-Sheet, have the students label the cups. Pour warm water in the Vitamin C Test Cups (cups 1 and 2) or have warm water available for students to pour. Add four drops of iodine in the Vitamin C Test Cups (cups 1 and 2).
3. Have students complete the experiment using the directions outlined on the Lab Sheet and answer the follow-up questions.

At the conclusion of the experiment, write the results of each group on the chalkboard. Have the students calculate the classroom averages for the orange Kool-Aid and orange juice within their groups.

Group Lab Sheet – Vitamin C Experiment

Names: _____

Objective

To determine which beverage has more Vitamin C

Materials

Put a checkmark next to all the materials you have

Container of warm water _____
Spray starch _____
4 plastic cups per group _____
2 teaspoons _____
2 eye droppers _____
Orange Kool-Aid _____
Orange juice _____

* Iodine - teacher has this.

Hypothesis (Pre-experiment predictions):

1. Which drink do you think has more Vitamin C, orange Kool-Aid or orange juice?

2. How many drops of the orange Kool-Aid or orange juice do you think it will take to turn the solution from blue to clear?

3. Write the entire hypothesis using answers from question 1 and 2.

Example: Orange Kool-Aid has more Vitamin C than orange juice and it will take 2 drops to turn the solution from blue to clear.

Procedure

1) Labeling

At your station there should already be two cups labeled and filled with orange Kool-Aid and orange juice. Label the remaining two cups.

Cup 1: Vitamin C Test/ Kool-Aid

Cup 2: Vitamin C Test/ Orange Juice

2) Prepare the Vitamin C Test Cups

Cup 1

- a) Fill Cup 1: Vitamin C Test/ Kool Aid $\frac{3}{4}$ full of water.
- b) Add spray starch until the water looks milky or cloudy.

Cup 2

- a) Fill Cup 2: Vitamin C Test/ Orange Juice $\frac{3}{4}$ full of water.
- b) Add spray starch until the water looks milky or cloudy.

Raise your hand and let the teacher know that you are ready to have 4 drops of iodine added to Cup 1 and 2. Mix well and make sure the solution turns blue.

3) Test Reaction

Cup 1

- a) Using the cup labeled **orange Kool-Aid**, take the eye dropper and add one drop at a time of **orange Kool -Aid** to cup 1 and stir with the spoon. Add another drop of Kool-Aid and stir. Keep adding drops and stirring until the mixture turns clear
- b) Record the amount of drops it took for the mixture to turn from blue to clear.

Cup 2

- a) Using the cup labeled **orange juice**, take the eye dropper and add one drop at a time of **orange juice** to cup 2 and stir with the spoon. Add another drop of orange juice and stir. Keep adding drops and stirring until the mixture turns clear
- b) Record the amount of drops it took for the mixture to turn from blue to clear.

Data: Group
(Fill in Group #)

Beverage	Number of Expected Drops	Number of Actual Drops
Orange Kool- Aid		
Orange Juice		

Groups	Group 1	Group 2	Group 3	Group 4	Group 5	Average
Example:						
Orange Kool-Aid	5	4	5	3	3	$20/5 = 4$
Orange Kool-Aid						$/5 =$
Orange Juice						$/5 =$

Getting the average is easy and fun. Just add the drops in each group, then divide by the number of groups. Lets look at our example, there are 5 groups, therefore add the drops in group 1, 2 ,3,4,5 and divide by 5.

For Example Orange Kool – Aid: $5 + 4 + 5 + 3 + 3 = 20$ and $20/5 = 4$

Results: Follow-Up Questions

- Which drink has more Vitamin C, orange Kool- Aid or orange juice? How do you know? (*Hint: Which drink turned the solution from blue to clear using the least amount of drops*)

- Which is healthier, orange Kool- Aid or orange juice? Why?

- Other than doing the experiment, how else could we have known that orange juice has more nutrients than orange Kool-Aid?

Learning Activity: pH Level of Pop

Explanation of Experiment:

Bone calcium is turned into alkaline by the body to neutralize pH in pop, thus depleting bone calcium. This experiment is designed to test the pH level in various beverages to identify the beverage with the lowest pH level. The lower the pH, the more likely the beverage will aid in bone calcium depletion.

Materials

- 12 oz. Coca-Cola (6-pack)
- 12 oz. Pepsi Cola (6-pack)
- 12 oz. Mountain Dew (6-pack)
- 12 oz. Sprite (6-pack)
- 12 oz. Orange Soda (6-pack)
- 12 oz. Root Beer (6-pack)
- Milk
- Water
- pH meter or pH strips for each group
- Pack of cups

Note to teacher: It may be more cost-effective to purchase 2-liters instead of 6-packs of pop. Also, even though the students are conducting the experiment individually, have students share a pH meter in groups of 6 unless you have opted to use the pH strips.

Preparations

Lay out all the materials for the students. Mark the inside of the plastic cups at the same level so the students pour the same amounts of pop in the cup for testing. Make sure not to open the pop before the experiment. The results may change depending on the flatness of the pop.

Directions

1. Assign students to test Coca-Cola, Pepsi, Mountain Dew, Sprite, Orange Soda, Root Beer, water, or milk. **Note:** Please make sure that the class is evenly dispersed with the different types of beverages. Ask students to predict the pH levels of their respective beverage. Write some of the predictions on the chalkboard. Have the students fill in the “Hypothesis” and pH level guesses on their Lab Sheets.
2. Have each student gather their 3 cups and pour their respective beverage into the first cup up to the designated mark. To test the pH level, place the pH meter or pH strips in the beverage and wait 10 seconds or until the numbers or color stops changing. Have students record the number that is on the pH meter or the number that is associated with the color on the pH strips. The student should repeat this process two more times and take the average of the results. **Note: Since the**

students will be sharing a pH meter within the group, have each student wait to open their pop until it is their turn to test the pop using the pH meter.

3. Have students complete the experiment using the directions outlined on the Lab Sheet and answer the follow-up questions.
4. At the conclusion of the experiment, have each student present their findings and discuss their conclusions.

Student Lab Sheet – pH Level of Pop

Name: _____

Objective

To determine the pH level in Coca-Cola, Pepsi, Mountain Dew, Sprite, Orange Soda, Root Beer, water, and milk

Pop: Circle your pop.

Coca-Cola	Pepsi	Sprite	Orange Soda
Root Beer	Mountain Dew	Water	Milk

Hypothesis (Pre-experiment predictions):

1. What is your hypothesis? What do expect to happen?

Example: I predict that Sprite will have the lowest pH level.

Procedure

1) Labeling

Label the three cups.

Cup 1: Test 1

Cup 2: Test 2

Cup 3: Test 3

2) Test pH Level

Cup 1

a) Pour the beverage from the container into the first cup until it reaches the outlined mark in the cup.

b) Hold the pH meter in the cup for ten seconds or until the numbers stop changing.

Alternative: Hold the pH strip in the cup for ten seconds until the color changes.

c) Record your result

Cup 2

a) Repeat directions from cup 1

Cup 3

a) Repeat directions from cup 1.

Data:

**Example:
pH Meter:**

Example Pop: Mountain Dew	pH Level
Test 1	3
Test 2	2.5
Test 3	2.1
Average	2.53

*To get the average: Add the pH Levels in Test 1, Test 2, and Test 3 and divide by 3
For Example $3 + 2.5 + 2.1 = 7.6$ and $7.6/3 = 2.53$*

pH Meter:

Pop:	pH Level
Test 1	
Test 2	
Test 3	
Average	

pH Strips:

Pop:	Color	pH Level
Test 1		
Test 2		
Test 3		
Average		

Conclusion

1. Is your hypothesis (guess) correct? Why?

2. What do your results show? (**Hint: Put your beverages in order from the lowest pH level to the highest pH level**)

3. What things did you have to worry about in the experiment and if you could do the experiment again what could you do differently that would make the project better?

Assessment Evidence:

Vitamin C Group Lab Sheets

pH Student Lab Sheets

Presentation

Journal Entry:

Have students write a one page summary about each activity in their journal.

Sponge Bobby:

Understanding that the water evaporated leaving Sponge-Bobby dry, have the students relate the experiment to the human experience. Focus on the specific questions. Do humans lose water? How do they lose water? How will humans feel if they become dehydrated and how can humans replenish themselves or prevent dehydration?

Vitamin C Experiment

Why was it important to keep conditions constant in the experiment, for example using the same amount of water for each Vitamin C Test Cup Solution?

pH Level of Pop Experiment:

Now that students are able to understand that what you drink affects your health, have students answer the following questions. How has your previous understanding been changed about the definition of a healthy lifestyle? How will you teach others about the importance of drinking healthy beverages?

Additional Resources:

Optional: Have students research the skeletal system and the meaning of pH in order to fully understand the importance of bones and how pH measures the acidity in substances.

- http://www.chem.iastate.edu/group/Greenbowe/sections/projectfolder/flashfiles/acidbasepH/ph_meter.html
- http://www.shopzilla.com/8B--Fish_Supplies_-cat_id--31000400_keyword--digital%20ph%20meter_kw--cheap%2Bdigital%2Bph%2Bmeter_mkt_id--76257530_qcid--395930703298
- <http://www.nextag.com/digital-ph-meter/search-html?nxtg=375a0a1c0526-3BFFAC1C8D29E9B4>
- http://www.phmiracleliving.com/ph_strips.htm

Lesson 20: Making Healthy Choices in Restaurants

Established Goals:

National Health Education Standards:

- 1.5.1** Describe the relationship between healthy behaviors and personal health
- 5.5.1** Identify health-related situations that might require a thoughtful decision
- 5.5.3** List healthy options to health-related issues or problems
- 5.5.5** Choose a healthy option when making a decision
- 7.5.1** Identify responsible personal health behaviors
- 7.5.2** Demonstrate a variety of health practices and behaviors to maintain or improve personal health
- 7.5.3** Demonstrate a variety of behaviors to avoid or reduce health risks

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Conventions: ABCD, Writing Applications: D,

Mathematics: Number, Number Sense and Operations: F,

Technology: Technology and Information Literacy: C

Ohio Indicators (Grade 4):

English Language Arts: Writing Conventions: 1-13; Writing Applications: 5;

Mathematics: Number, Number Sense and Operations: 8

Understandings:

Students will understand...

- Although restaurant food is typically unhealthy, there are healthy food options at your favorite fast food restaurants.
- There is a variety of fruits, vegetables and other healthy foods available at restaurants.

Students will be able to...

- Plan and make healthy food choices.
- Distinguish between nutritious and unhealthy foods.
- Calculate the price of a purchased meal and supply change.

Essential Questions:

- What does a healthy meal consist of and what options on the menu can create a healthy meal?
- How can you stay within your budget and still eat a healthy meal?
- What types of fast food restaurants are more likely to have healthy food options?

Learning Plan:

Background:

Eating at fast food restaurants can be a quick option to providing a meal in the event a parent is unable to prepare a meal at home. However; the nutrition and financial burden of purchasing a quick meal at a restaurant can be costly. This lesson is designed to teach students how to make healthy decisions in any environment and especially in a restaurant setting.

Discussion:

When eating at a restaurant, what are many of the things considered before making an order or purchasing a meal? Is taste, nutrition, and cost all factors for consideration when purchasing a meal? After purchasing an order, are the selected items healthy and nutritious? Explain to students that even when they are not preparing food, it is important to think about the foods they are eating. Begin by asking students a series of questions about which meal is healthiest.

Which is a healthier meal, Wendy's Grilled Chicken Sandwich or McDonald's Garden Salad?

Wendy's Grilled Chicken Sandwich actually has *less* fat than McDonald's Garden Salad with ranch dressing. The garden salad has 21 grams of fat (all from the ranch dressing). The grilled chicken sandwich has only 8 grams of fat.

	Item	Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
Wendy's	Grilled Chicken Sandwich	310	8	1.5	35	27
McDonald's	Garden Salad with Ranch Dressing	265	21	3	17	3

Which is a healthier meal, Boston Market's quarter chicken without skin or Boston Market's half chicken with skin?

The quarter chicken has 33 fewer fat grams compared to the half chicken with skin. The quarter chicken has **no** skin, and the skin has a lot of fat in it.

Item	Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
Quarter Chicken without Skin	160	4	1	0	31
Half Chicken with Skin	630	37	10	2	74

Which is a healthier meal, McDonald's Fish Fillet Deluxe or McDonald's Grilled Chicken Deluxe?

McDonald's Grilled Chicken Deluxe has only 20 grams of fat, and McDonald's Fish Fillet has 28 grams of fat. Although fish is sometimes healthier than chicken, McDonald's Fish Fillet is **deep fried** in oil. The chicken is grilled.

Item	Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
Grilled Chicken Deluxe	440	20	3	38	27
Fish Fillet Deluxe	560	28	6	54	23

Explain to students that even when they are eating out at restaurants (or the school cafeteria) which may or may not provide healthy food selections, they can make healthy food choices. Tell students that it is okay to eat fast food, but emphasize that it is important to eat fast food in moderation. Explain to students that it is possible to eat a healthy meal in a restaurant as long as you try to incorporate fruits and vegetables into the purchase. To illustrate this concept, display the following information:

Recommended daily allowance (RDA) for one full day:

Calories	Total Fat	Saturated Fat	Carbohydrates
2000	65	20	300

McDonalds

A hamburger, grilled chicken salad deluxe with fat-free herb vinaigrette dressing, and a small Sprite.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
530	22	7.5	61	18

Burger King

A hamburger, broiled chicken salad with reduced calorie light Italian dressing, and a medium Coke.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
815	23.5	10	110	40

Wendy's

A grilled chicken sandwich, side salad with fat-free French dressing, and an iced tea.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
575	11	1.5	48	31

Taco Bell

A regular taco, cinnamon twists, and a large Pepsi.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
520	16	4	82	9

Boston Market

A quarter white meat chicken without skin, new potatoes, whole kernel corn, and a Diet Coke.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
471	10	1.5	55	39

Subway

A six-inch turkey breast sub with lettuce, onions, tomatoes, pickles, and peppers and a medium Sprite.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
480	6	1	99	17

Arby's

A roast turkey deluxe, regular fries, and a Dr. Pepper.

Calories	Total Fat	Saturated Fat	Carbohydrates	Protein
666	20	5	103	22

KFC

An Original breast, mashed potatoes and gravy, garden salad with Italian dressing, and a Coke.

Calories	Total Fat	Carbohydrates
571	16	86

To further illustrate this concept, have students complete the making healthy choices activity.

Learning Activities: Making Healthy ChoicesMaterials:

- One menu for each pair of students
- Two receipts for each pair of students
- Paper money
- Butcher paper/chalkboard/transparency (to make a large graph with the class)

Directions:*Round 1*

1. Divide the students into pairs and give each pair a menu and five dollars. Designate one student as the cashier and the other as the customer.
2. Using their budget of five dollars, have one student order a meal from the menu provided. The partner will total up their order and make change. Have the partner create a receipt with the items purchased, the total cost, and the change received. Then, have the students switch roles.
3. Poll the class to determine which items were ordered. You may wish to make a graph depicting the students' selections. After Round 2, you will poll the class again regarding their selections. After both polls have been taken, you can determine in which round the students made the healthiest selections.

Begin by discussing the contents of each meal selection. Did students choose food based on taste, nutrition or cost? It may be helpful at this point to have a student or students collect data on the amount of children who purchased food based on the different categories of taste, nutrition or cost. Ask each child to report their purchased items and

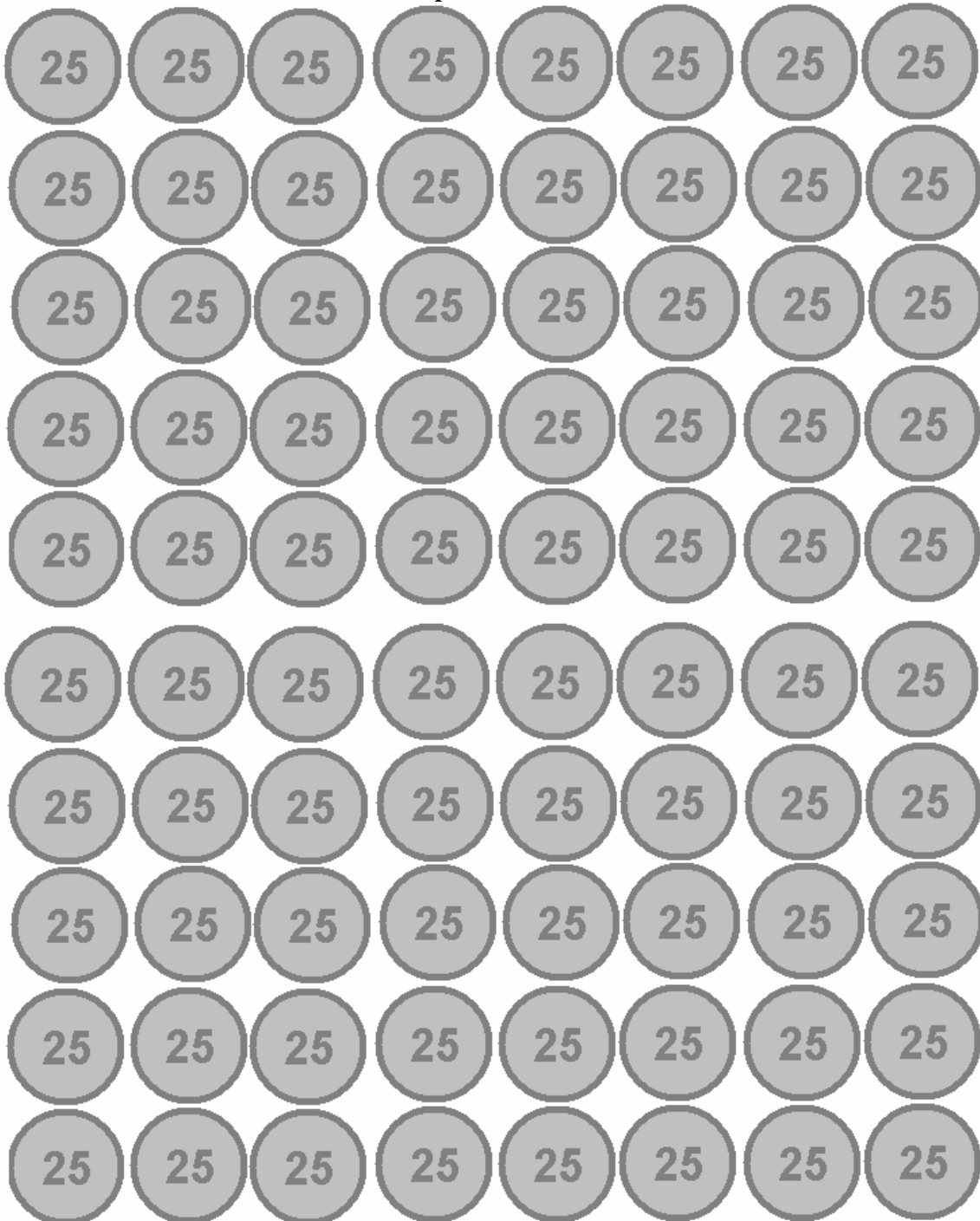
graph the results accordingly using a bar graph. Continue to ask the students if they thought that their purchase was healthy and nutritious. Once you have established if each child's selection was healthy or unhealthy, ask the students which items on the menu are nutritious (i.e., salads, fruit cups and meats) and which items on the menus have few nutrients (i.e., french fries, cookies and ice cream).

Round 2

1. Take the pairs from Round 1 and combine them into groups of four. Each person still has a budget of five dollars. However, two members of the group will pretend that they are going out to lunch. Therefore, they have the option of sharing items if they choose to do so. The other two group members are responsible for calculating the cost of the order. Each role should be determined before starting the next round.
2. Advise students to make the healthiest meal choices in this round. Some tips include:
 - Order regular sized meals instead of the extra-large or “super-sized” meals
 - Split items with a friend
 - Order water instead of pop
 - Order a side salad instead of french fries
 - Order a fruit cup instead of ice cream, cookies or pie for a sweet dessert
 - Eat half of your order and take the rest home
3. After one pair purchases a meal, have the group members switch roles.
4. Following the activity, poll the class again to see how many people ordered each item this round. Create a graph of the Round 2 choices. Compare the first and second round graphs. Using the graphs, have students determine which round included the healthiest choices.

Discuss with the class which items were bought the **most** from Round 1 to Round 2 and which items were bought the **least** from Round 1 to Round 2. Did more students purchase water, fruits, and vegetables in Round 1 or Round 2? Identify in each round the amount of water, fruits and vegetables purchased. Explain to the students that it is OK to order food that does not have a lot of nutrients. But, it is important to try to eat nutrient-rich food and to stay active so that you are able to concentrate in school and interact well with others.

Sample Materials:
















Mmmm! Good Eats!



Sandwiches		Regular	Large	X-Large
	Hamburger.....	\$1.75	\$2.25	\$3.00
	with cheese...add 25 cents			
	Chicken.....	\$1.75	\$2.25	\$3.00
	Fish.....	\$1.75	\$2.25	\$3.00
Sides				
	French Fries.....	\$1.00	\$1.25	\$1.75
	Side Salad.....	\$1.00	\$1.25	\$1.75
	Fruit Cup.....	\$1.00	\$1.25	\$1.75
Desserts				
	Ice Cream.....	\$1.50	\$1.75	\$2.00
	Cookies.....	\$1.50	\$1.75	\$2.00
Drinks				
	Soda.....	\$1.00	\$1.25	\$1.50

Receipt

NAME _____

Menu Choices	Price
	\$
	\$
	\$
	\$
	\$
TOTAL:	\$
Payment:	\$5.00 - \$.
Change:	\$

Thank you for shopping at

Mmmm! Good Eats!



Assessment Evidence:

Journal Entry:

Many national chain restaurants have interactive nutrition tutorials on their websites. Check out websites first to see if they have an easy to use drop-down menu and include the percentage of daily value of nutrients that students are familiar with (vitamins, iron, calcium). Give students the list of websites you have browsed. Have them choose one site and use its menu to place a typical order. Have students write a one page summary of their findings.

Completed Receipt

Additional Resources:

[Real Truth about Fast Foods and Nutrition](http://library.thinkquest.org/4485/frames.htm)

<http://library.thinkquest.org/4485/frames.htm>

Lesson 21: Review of Lessons 10-20 (Nutrition)

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>2.5.1 Describe how family influences personal health practices and behaviors 3.5.2 Locate resources from home, school and community that provide valid health information 5.5.4 Predict the outcomes of each option when making a health-related decision 5.5.6 Describe the outcomes of a health-related decision 7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks 8.5.1 Express opinions and give accurate information about health issues.</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p>English Language Arts Writing Applications Standard: D, Writing Conventions Standard: ABCD, Research: ABCD, Communications: EG</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p>English Language Arts Reading Process: 4,5; Reading Applications: 2,3,4; Writing Applications: 4, Research: 1,2,3,6; Communications: 8 a-f</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The impact nutrition has on our health. •The diseases that they are at risk for due to family history. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Discuss one disease that is affected by nutrition. •Discuss the importance of nutrition and how the choices we make can either prevent disease or increase our risk. •Discuss what a person can do to become healthier through nutrition.
Lessons Reviewed:	
<ul style="list-style-type: none"> •Food Groups and the Food Guide Pyramid (10) •Growing Essentials (11) •Reading Nutrition Labels (12) •Fruits and Vegetables Inside & Out (13) •5 to 9 a Day (14) •The Importance of Breakfast (15) •Snack Math (16) •Food is our Energy Source (17) •The Importance of Water (18) •To Drink or not to Drink (19) •Making Healthy Choices in a Restaurant (20) 	

Background:

What we eat has a large impact on our health. The impact is so great that it can cause, contribute to or worsen a health condition. It is important for students to understand that the decisions that they make now may not be problematic next week, but they can cause serious problems in the future. Many health conditions are influenced by genetics. If your mother has high blood pressure, you are at a higher risk for having it. Therefore, controlling your diet now may prevent the problem. Students often do not talk about these issues with their families. They do not know that someone in their family has a health condition. If they do know, they are often not educated about its causes, symptoms and effects on a person's life. This lesson is meant to help children learn about their family health histories. It will provide them with the opportunity to research a disease that has affected their family and/or is a disease that they may be at risk for. They will see how nutrition impacts this disease and they will discuss what a person can do to eat more healthily. This will give them an opportunity to put together all the knowledge they gained in the nutrition unit.

Discussion: How nutrition affects our health

The students have already learned about how essential nutrients are to our health (*To Drink or Not to Drink* and *Growing Essentials*). They help our bodies function normally and healthily. They learned that to get all the nutrients our bodies need, we have to:

- Eat a variety of foods from all five of the food groups (*Food Groups and the Food Guide Pyramid*)
- Eat a variety of fruits and vegetables and get 5 to 9 servings a day (*Fruits and Vegetables Inside and Out & 5 to 9 a Day*)
- Eat a healthy breakfast and eat breakfast every day (*The Importance of Breakfast*)
- Choose healthy snacks (*Snack Math*)
- Read the nutrition label to ensure that the foods we eat provide nutrients (*Reading Nutrition Labels*)
- Drink Vitamin C-rich drinks, milk and 100% fruit juice instead of sugary drinks (*To Drink or Not to Drink*)
- Hydrate our bodies with water (*The Importance of Water*)

What happens when we do not get the nutrients we need?

- Example: Without enough Vitamin C, our immune system will be weak. We can't fight off viruses or bacteria, such as the common cold or an ear infection.
- Example: Without protein, we can't build strong muscles.

There are lots of other examples. What do the kids remember?

What happens when we don't eat unhealthy foods in moderation? In other words, what happens when we eat too much sugar, salt, fat and cholesterol?

- Example: If we eat unhealthily and do not exercise, we become overweight. Being overweight can lead to a variety of health problems such as diabetes and heart disease.

- Example: Not eating a diet low in sodium and cholesterol can lead to high cholesterol, high blood pressure and heart disease.

Are all diseases caused by or a result of poor nutrition?

- NO! Many diseases have no relation to nutrition. Eating healthily simply helps us survive and fight diseases if we contract them.

Determining risk for diseases: Nutrition as Prevention

Eating well now can mean less chance for health conditions in the future. Look at your parents or grandparents; do they have any health conditions? Genetics can play a part in our chances for getting certain disease. Genetics are characteristics that we inherit from our parents. For example, your eye color, hair color and height are probably similar to your parents'. Health conditions also run in families. Parents pass on certain health risks to their children. Eating well can help us lower our chances for many diseases.

It's important to know your risk factors and understand how eating healthy can help you now and later in life. To help you with this, you will do the family tree exercise and then research a condition that someone in your family has that is affected by nutrition.

Learning Activity: Family Tree Drawing



Step 1:

Family Tree Drawing

Students will create a family tree. They should include:

- Themselves
- All Siblings, including half-brothers and sisters
- Their mother and father
- Their grandparents on both their mother's side and their father's side
- Any other family members that are alive or that are accessible (aunts, uncles, great grandparents, cousins, etc)

Students should include siblings, parents and grandparents at a minimum, even if they have passed away. Students do not have to indicate on their tree that any of their relatives have passed away if they do not want to. The trees will be shared, and any information that students might be sensitive about should be omitted. Students should draw a tree with the names and birthdates of their family members. There are numerous trees that can be found on the web if you prefer to provide a ready-made outline for your students.



Step 2:

Family Member Interview

Students should use the interview sheet provided to find out information about their family members' health histories. If a parent is knowledgeable about all the members in their family, they can use them as a single source. If a parent is unfamiliar with the health history of a family member, the student can ask that relative directly. If a family member is not accessible or information is not readily available, this should not be counted against the student.

Family Member Interview Sheet

Name _____

Directions: Ask as many family members as possible about their health history. If a family member is not available or has passed away, ask another family member about them. If there is no information, leave those questions blank. If a family member is too young to answer the questions, ask someone to help you.

Start with you....

1. Do you have any health-related conditions? If so, what are they? _____

Questions for your Mother

1. How old are you? _____
2. Do you have any health conditions? _____
3. How does this affect your life? _____

Questions for your Father

4. How old are you? _____
5. Do you have any health conditions? _____
6. How does this affect your life? _____

Questions for your Brother or Sister, Half-Sister or Half-Brother (circle one)

7. How old are you? _____
8. Do you have any health conditions? _____
9. How does this affect your life? _____

Questions for your Brother or Sister, Half-Sister or Half-Brother (circle one)

10. How old are you? _____
11. Do you have any health conditions? _____
12. How does this affect your life? _____
- _____

Questions for your Brother or Sister, Half-Sister or Half-Brother (circle one)

13. How old are you? _____
14. Do you have any health conditions? _____
15. How does this affect your life? _____
- _____

*If you have more brothers, sisters, half-sisters or half-brothers, add their information under the "other" section.

Questions for your Grandmother (your mom's mother)

16. How old are you? _____
17. Do you have any health conditions? _____
18. How does this affect your life? _____
- _____

Questions for your Grandfather (your mom's father)

19. How old are you? _____
20. Do you have any health conditions? _____
21. How does this affect your life? _____
- _____

Questions for your Grandmother (your dad's mother)

22. How old are you? _____
23. Do you have any health conditions? _____
24. How does this affect your life? _____
- _____

Questions for your Grandfather (your dad's father)

25. How old are you? _____
26. Do you have any health conditions? _____
27. How does this affect your life? _____
- _____

OTHER:

Questions for my _____

28. How old are you? _____
29. Do you have any health conditions? _____
30. How does this affect your life? _____
- _____

Questions for my _____

31. How old are you? _____
32. Do you have any health conditions? _____
33. How does this affect your life? _____
- _____

Questions for my _____

34. How old are you? _____
35. Do you have any health conditions? _____
36. How does this affect your life? _____
- _____



Step 3:

Making the Connection: *Researching how food affects a disease*

Students should choose one health condition (disease) that has affected their family. They will research the disease and its relation to nutrition (if applicable). They will try to find out:

- **Is this disease caused by poor nutrition?** (i.e. Type II diabetes, heart disease, obesity, etc)
- **Does nutrition affect a person while they have this disease?** (i.e. People with high blood pressure must watch their diet to improve their condition.)
- **Is nutrition's effect on this disease short term or long term?** In other words, does eating poorly cause this problem in the near future (6 months, 1 year) or in the distant future (20 years).

If there are no diseases in the student's family they can choose a disease that is affected by nutrition. Further, if there is a disease that the student does not feel comfortable discussing, they may choose an alternative condition to research.

Students should write a brief summary of their findings, answering the questions listed above. In addition, they should write an "action plan" for someone who wants to prevent the disease. This will be a list of 5 to 10 specific actions a person can take to eat well and prevent a disease or lessen their chances for facing disease later in life. See a sample list below:

Sample Action Plan:

1. Eat foods from the five food groups and use the food guide pyramid to tell you how many servings you need.
2. Eat a variety of fruits and vegetables. Eat from the 5 color groups.
3. Eat 5 to 9 fruits and vegetables per day.
4. Limit how many sodas and sugary drinks you have each day.
5. Read nutrition labels to make sure the foods you eat have nutrients.
6. Eat the recommended serving size on the nutrition label.
7. Drink lots of water.
8. Eat enough food to have energy, but make sure you balance how much you eat with how much physical activity you get.
9. Eat fruit or other healthy foods for snacks.
10. Drink 100% fruit juice with your breakfast.

Assessment Evidence:

Completed family tree: Students will present their tree to the class. They should have the information displayed creatively.

Completed summary of a disease that has affected a member of their family (written). Students will present the information that they learned to the class along with their family tree. Presentations should be approximately 5 minutes long.

Completed Action Plan: Action plan should be presented with the family tree and disease summary.

Unit 3:

Physical Activity

Lesson 22: Active Every Day

Established Goals:	
<p><u>National Health Education Standards:</u> 1.5.1. Describe the relationship between healthy behaviors and personal health 7.5.2. Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health 7.5.3. Demonstrate a variety of behaviors to avoid or reduce health risk</p> <p><u>Ohio Benchmarks (3-4 Program):</u> English Language Arts: Writing Conventions Standard ABCD, Writing Applications Standard: A, Writing Processes Standard: B Mathematics: Data Analysis and Probability: ABC</p> <p><u>Ohio Indicators (Grade 4):</u> English Language Arts: Writing Conventions: 1-13, Writing Applications: 5, Writing Processes: 5 Mathematics: Data Analysis and Probability: 1,2,5</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The importance of doing high energy activities. •That physical activities can be accomplished in any season and weather condition. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Define low and high energy activities. •Classify actions into one of the following categories: Screen Time, Active Time, School Time or Down Time.
Essential Questions:	
<ul style="list-style-type: none"> •What is their motivation to do a high energy activity? •What is their ability to do high energy activities? 	
Three Part Series:	
<p>Fitness is comprised of three components including strength, endurance, and flexibility. Each physical activity lesson targets components of fitness. Part One: Active Every Day – Strength with minor emphasis on Endurance Part Two: Cardiovascular Health – Endurance with minor emphasis on Strength Part Three: Stretching – Flexibility</p>	

Learning Plan:

Part One

Background: Nine out of ten parents believe their children are physically fit, but in reality only 1 in 3 children are physically active. In fact, 63% of children are physically inactive by the time they are in high school. Instead, children spend approximately 20% of their waking hours playing videogames, watching television or playing on the computer/internet. According to the American Academy of Pediatrics (AAP), the average child is watching about 3 hours of television a day and the average kid spends 5 1/2 hours on all media combined as reported by the Kaiser Family Foundation. According to the 2005 dietary guidelines from the U.S. Department of Agriculture (USDA) and the Department of Health and Human Services (HHS), **all** children 2 years and older should get 60 minutes of moderate to vigorous exercise on most, preferably all, days of the week. The AAP recommends that children under the age of 2 years watch no TV at all and that screen time should be limited to no more than 1 to 2 hours of *quality programming* a day for children 2 years and older.

National Association for Sport and Physical Education (NASPE): Recommended Guidelines

Age	Minimum Daily Activity	Comments
Infant	No specific requirements	Physical activity should encourage motor development
Toddler	1 1/2 hours	30 minutes planned physical activity AND 60 minutes unstructured physical activity (free play)
Preschooler	2 hours	60 minutes planned physical activity AND 60 minutes unstructured physical activity (free play)
School age	1 hour or more	Break up into increments of 15 minutes or more

References: <http://kidshealth.org/parent/fitness/general/exercise.html>
<http://missourifamilies.org/features/childcarearticles/childcare9.htm>
<http://www.globalhealthandfitness.com/children.htm>

Discussion:

Ask students to name low- and high-energy activities. List them on the chalkboard, transparency or butcher paper. Ask students to identify the best type of activity: low-energy or high-energy activities? Explain that one is not better than the other. Both types of activities can be done each day. Low-energy activities include reading or doing homework. High-energy activities include running, playing four square, and hopscotch. Doing high- and low-energy activities are important because they provide a balance.

Explain that many of the activities that we do every day are low-energy, so we need to make an effort to make sure that we do at least one high-energy activity every day. Ask students why they think it is important to do one high-energy activity every day. List their responses on the chalkboard. Explain that doing high-energy activities:

- Gives the heart a good workout and makes it stronger.

- Makes muscles and bones stronger. Strong muscles and bones will help us to grow
- Reduces stress and anxiety. Doing a high-energy activity for 20 minutes relieves stress and can make us feel better.
- Improves the immune system which makes us less likely to get sick.
- Increases a sense of calmness and helps us sleep better at night.
- Makes us feel more energetic and better able to concentrate on schoolwork.

The more you do high-energy activities, the better you will become at them. Your whole body gets a workout and gets stronger when you do high-energy activities. A healthy and strong body is able to do many activities well.

Now that students know why it is important to make sure that they do a high-energy activity every day, ask them for strategies to do so. Ask them when, how and which activities they could fit into their days. List their answers on the chalkboard. Some strategies include the following:

- Do push-ups, crunches or sit-ups during commercials.
- At recess, play a high-energy game with your friends or play hard by yourself.
- During gym class, participate as much as you can. Gym classes usually involve doing high-energy activities and supervised weight lifting.
- Cut Screen Time to 30 minutes every day. Screen time is any time you spend watching a screen--watching TV or a movie, playing a video game or using the computer. Screen Time cuts into your time to do a high-energy activity.
- Join a sports team. Your school or community most likely has sports teams like soccer, football or cheerleading. Ask your parents if you can join one.
- Take lessons in a high-energy activity which you like. Dancing, swimming and martial arts are some examples. If you do not know a high-energy activity that you like, try doing different things until you find something you like.
- Do your chores at a fast pace. You can make just about anything high-energy if you do it quickly and move around a lot. Outside chores like raking the leaves and gardening are some high-energy chores.

Now have students brainstorm different activities that can be done during different seasons or weather conditions.

Extension: Complete the *Physical Activities in All Seasons* Activity (see *Additional Resources*).

Students will design a Weekend Activity Book to identify how much time they've spent on specific activities that include screen time, down time, school time, and active time. After they have completed their Weekend Activity Books, students will create a Pie Chart of Weekend Activity that further illustrates how they spent their time.

Learning Activity: Weekend Activity Book

Explanation of Activity:

Seventy six (76) percent of elementary school girls and Twenty six (26) percent of boys cannot do one chin up; therefore, this activity will help students identify high energy activities that will improve strength and endurance.

Materials:

- Paper on which to write an outline
- Construction paper or the “My Weekend Activity Book”
- Staples, glue or yarn and paper punch (to bind the book)
- Markers, pens, art supplies

Preparation:

To create a “My Weekend Activity Book”, fold 3 sheets of construction paper in half and staple or bind in the middle to make a booklet for each student. Then, label the pages in the booklet in the following order:

- Saturday Morning
- Saturday Afternoon
- Saturday Evening
- Sunday Morning
- Sunday Afternoon
- Sunday Evening

You may wish to have the students do this preparation themselves.

Note to Teacher: This lesson should be done on a Monday, as it involves recalling and recording the past weekend’s activities. Doing the lesson later in the week will make it much more difficult for students to be able to recall and record their weekend activities accurately.

Directions:

1. Before the students begin writing in their books, have them create an outline to organize their thoughts. The outline should include the time of the day (morning, afternoon or evening) and what activity they did. Most likely the students did more than one thing during each specified time frame. Encourage them to recall what they did the majority of the weekend. ***(If it is difficult for them to remember, ask them to identify the activities that stick out in their minds.)***
2. Using their outlines, have each student write at least two sentences about what they did during the specified time period for each page of the book.
3. After students have completed the “My Weekend Activity Book,” allow them to illustrate their books and share them with the class in small groups or in pairs.
4. *Allow students to look through their books while having the following discussion.* Do you think your weekend activities were mostly high-energy or low-energy? Do you think you could have been more active? If so, what are some ways you can be more active and do more high-energy activities? What are some benefits to being active and doing at least one high-energy activity per day?

Learning Activity: Pie Chart of Weekend Activity Level

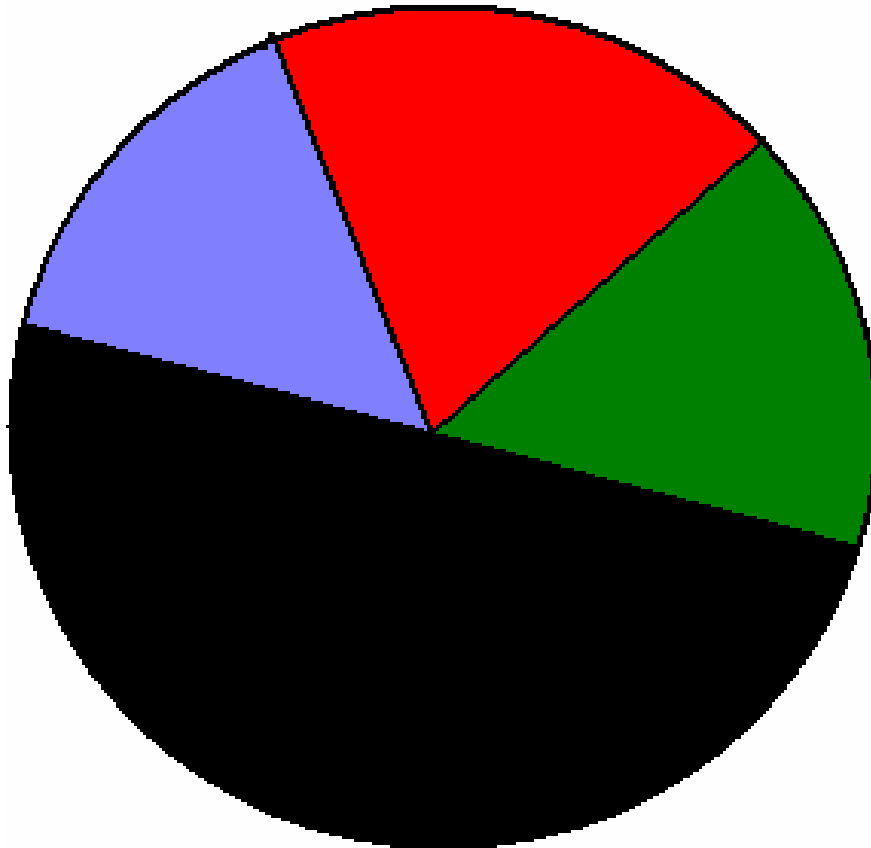
Materials:

- A Weekend Activity Book for each student
- Pie Chart worksheet
- Red, black, green and blue crayons or markers

Directions:

1. Have each student look through the Weekend Activity Book that they created in Activity 1.
2. Have the students place each of the activities described in their Weekend Activity Books in one of the four categories: Screen Time, Active Time, School Time and Down Time. Some of their activities may not fit neatly into one category, but have them choose the most appropriate category for each activity. The categories are listed below.
 - **Screen Time:** time spent playing video games, watching TV and using a computer.
 - **Active Time:** time spent actively playing, exercising, walking, doing household chores, etc. High-energy activities fit in this category.
 - **School Time:** time spent in classes or doing homework or reading for school or for fun.
 - **Down Time:** time spent relaxing, talking with family or friends, doing art, etc. Low-energy activities fit in this category.
3. Incomplete fractions are under the pie chart on their worksheet. These fractions show the fraction of the weekend spent doing each of the four categories listed above. Have the students write down the number of activities in each category, to complete the fractions.
4. Then, have the students color in the pie chart above according to their fractions' colors. The slices depicting *active time* should be colored red. *Screen time* should be colored in black. Color *school time* green and *down time* blue. For example if $\frac{2}{6}$ of their weekend was spent on *Active Time*, then two of the slices on the pie chart should be colored in red.
5. Discuss with students the composition of the pie chart. Explain to students that if the pie chart is mostly one color it means that all of the activities you wrote about were in the same category. In contrast, if your pie chart is many different colors, it means that you did something from all, or many, of the categories. Ask students to identify the color that is not necessary to include on the pie chart. Inform students that the pie chart does not need to include black because it represents *Screen Time*; however, *Active Time*, *School Time* and *Down Time* are all things you need every day to be healthy. *Screen Time* does not add to your health. It is OK to have some *Screen Time*, but it is more important to do things from the other categories.

Example of Finished Pie Chart:



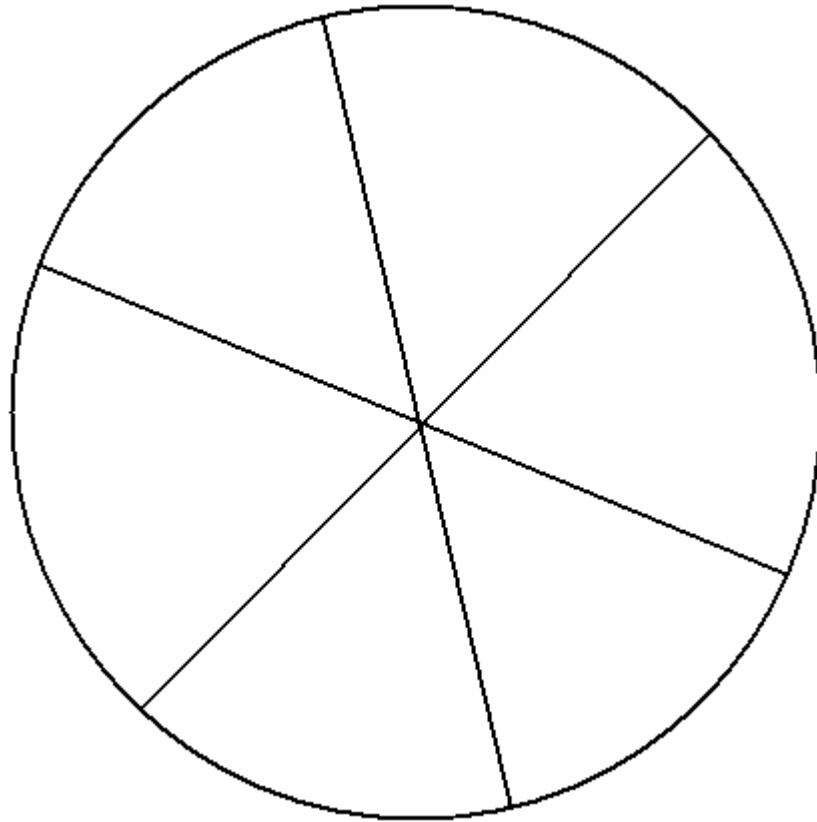
Active Time: 1 / 6

Screen Time: 3 / 6

School Time: 1 / 6

Down Time: 1 / 6

NAME _____



What activity did you spend most of your weekend doing?

Active Time: /6

Screen Time: /6

School Time: /6

Down Time: /6

Additional Exercise:

Extension: Physical Activity in All Seasons

Physical Activity in All Seasons Activity

Materials:

- At least four large sheets of butcher paper
- Pencils, markers, or crayons
- Masking tape

Preparation:

Create posters that have each season written at the top. In parentheses, write the weather condition that is specifically associated with the respective season. For example, if winter was the season, snow would be written in parentheses. Place the butcher paper posters and writing utensils around the room.

Directions:

1. Remind students that it is important to do a high-energy activity each day to improve cardiovascular health and strengthen muscles. Explain to students that weather conditions do not have to be perfect for them to be physically active. Students can be active indoors when it is cold, raining, snowing, or very hot outside. Some activities can be done when it is cold or snowy and others are accomplished best in hot weather during the spring or summer.
2. Divide students into groups and send each group to a poster station.
3. Give the groups 2-3 minutes to brainstorm fun activities and write the activities in each category. Allow students to write both high-energy and low-energy activities.
4. After 2-3 minutes, rotate the groups to give each group an opportunity to write an activity in each category. After each group has identified an activity for each category, post the results in front of the class.
5. Go through each “fun activity” written on the posters, and have the students determine if each activity is high-energy or low-energy.
6. Begin discussion with students using the following questions. Are there high-energy and low-energy activities in each category? Are some activities listed in more than one category? Can some activities be done during more than one season (or weather condition)? Are there some activities which can only be done during one season? Are high-energy activities only sports or exercises, like sit-ups?

Assessment Evidence:

Weekend Activity Book
Pie Chart of Weekend Activity

Journal Entry:

Have students write a personal narrative detailing their favorite physical activity memory. Encourage students to include the season and weather condition in the one page personal narrative. Journal entries should include name and date.

Lesson 23: Cardiovascular Health

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>1.5.1 Describe the relationship between healthy behaviors and personal health</p> <p>1.5.2 Identify examples of emotional, intellectual, physical, and social health</p> <p>6.5.1 Set a personal goal and track progress toward its achievement</p> <p>7.5.2 Demonstrate a variety of health practices and behaviors to maintain or improve personal health</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p>English Language Arts: Writing Application Standard: D, Write Conventions Standard ABCD, Communication: CE</p> <p>Science: Life Sciences: B, Scientific Inquiry: ABC, Scientific Ways of Knowing: ABC</p> <p>Mathematics: Number, Number Sense and Operations: G, Data Analysis and Probability: ABE</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p>English Language Arts: Writing Applications: 5; Writing Conventions: 1-13; Communications: 8(a-f)</p> <p>Science: Scientific Inquiry: 1; Scientific Ways of Knowing: 2,4;</p> <p>Mathematics: Number, Number Sense and Operations: 12,13; Data Analysis and Probability: 1,2,5,8</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The cardiovascular system and the functions of the heart. •The positive attributes of doing a cardiovascular fitness plan. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Determine where and how to take a pulse. •Calculate the Target Heart Rate. •Trace and diagram the important components of the circulatory system.
Essential Questions:	
<ul style="list-style-type: none"> •How does a cardiovascular fitness program help to improve fitness? •What are the major components in the circulatory system? 	
Three Part Series:	
<p>Fitness is comprised of three components including strength, endurance, and flexibility.</p> <p>Each physical activity lesson targets components of fitness.</p> <p>Part One: Active Every Day – Strength with minor emphasis on Endurance</p> <p>Part Two: Cardiovascular Health – Endurance with minor emphasis on Strength</p> <p>Part Three: Stretching – Flexibility</p>	

Part Two

Background:

Students will learn about the cardiovascular system and the function of the heart. In order to emphasize the importance of a healthy heart, students will trace the cardiovascular system, take their pulse, identify their target heart rate, and construct a cardiovascular fitness plan.

Discussion:

Begin the discussion by revealing to the student that the cardiovascular system includes one of the most important organs in the body--the heart. Without the heart, oxygen and nutrients would not get transported throughout the body to vital organs and muscles. The right side of the heart receives blood from the body and pumps it to the lungs. The left side of the heart receives the blood from the lungs and pumps the blood carrying oxygen and other important nutrients throughout the body. Wastes are carried away in the blood. This process is called circulation, and the heart is responsible for circulating blood through arteries to the organs and back to the heart via veins.

Explain to students that the heart is a muscle and it is important to exercise all muscles to keep them healthy and strong. Exercise helps the heart function better and prevents it from working as hard or as fast to supply the same amount of blood throughout the body with the same amount of force. The stronger and the healthier the heart, the less likely the heart will be stressed from doing extra work. A healthy heart can be conditioned by exercising the heart so that it reaches its target heart rate. **Complete Pulse and Target Rate Activity.**

Now that students understand the importance of exercising the heart, introduce the concept of using a cardiovascular fitness program as a way for students to stay healthy. Cardiovascular fitness programs involve doing a scheduled physical activity or exercise to make your heart and cardiovascular system stronger. Fitness programs help to increase muscular strength, increase endurance, improve the quality of life, and extend life. Explain the importance of a cardiovascular fitness program. Emphasize that exercise makes your heart stronger by making your heart beat harder and faster. Also, explain that doctors recommend that people exercise at least three times a week for at least 20 minutes each time.

Ask students to identify activities that they could incorporate into a cardiovascular fitness program. Brainstorm with students how they could fit certain activities into their days. List their answers on the chalkboard. Some strategies include:

- Exercises: jumping jacks, yoga, pilates, lifting weights, jump rope
- After-school activity: cheerleading, swimming, sports
- Extra-curricular activity: martial arts, dancing

Learning Activity: Diagram Worksheet

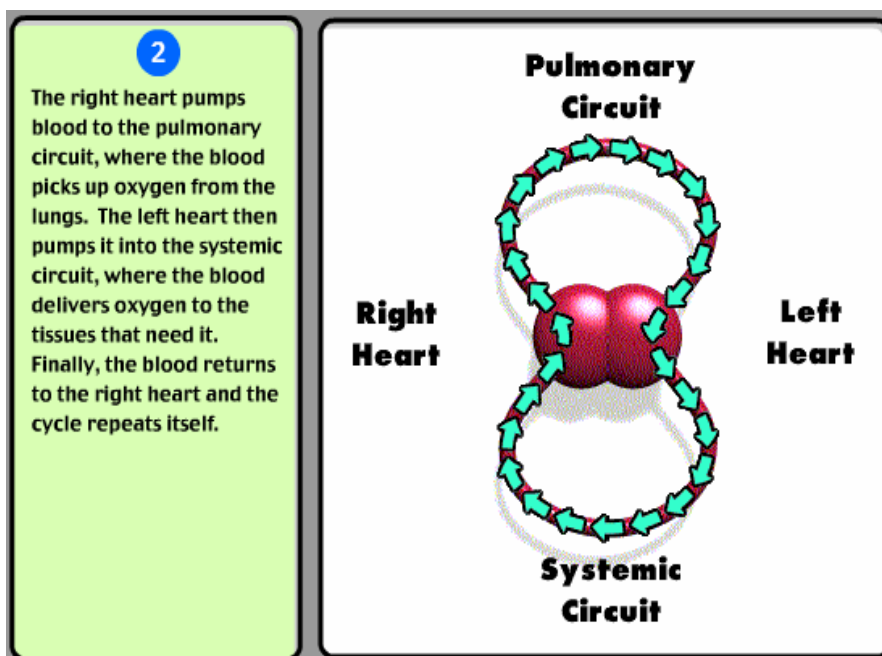
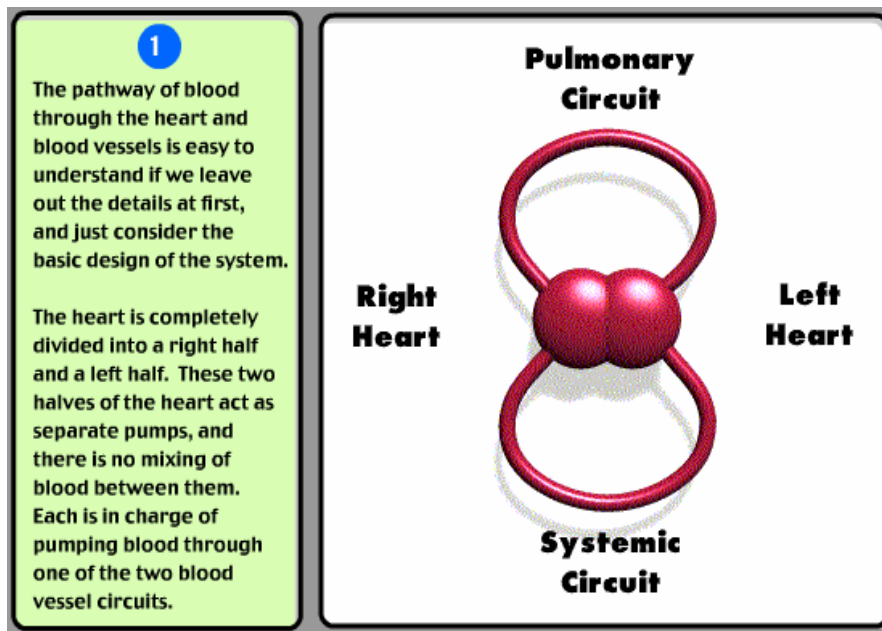
To familiarize the students with the components of the cardiovascular system, have the students trace the diagram provided. Emphasize the important body parts including the arteries, veins, bloodstream, lungs and the parts of the heart.

Diagram Worksheet

To view the following activity in motion visit:

(Copyright by Leif Saul, <http://www.biologyinmotion.com/cardio/index.html>)

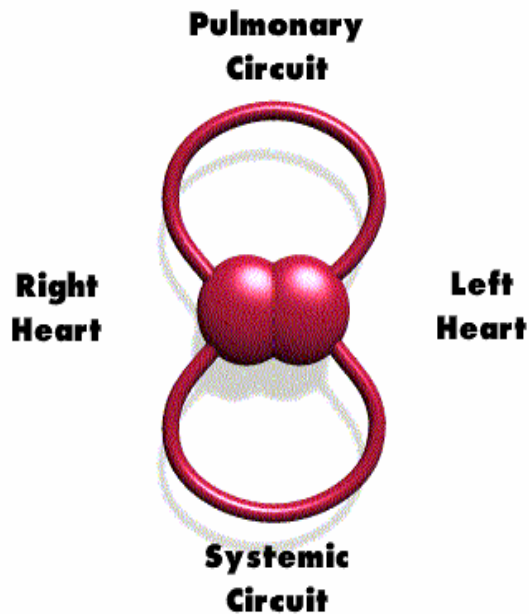
Read each text box to understand the circulatory system. Box 1 discusses the parts of the heart. Box 2 describes the flow of blood through the body. Box 3 and 4 illustrate the complete circulatory system.



3

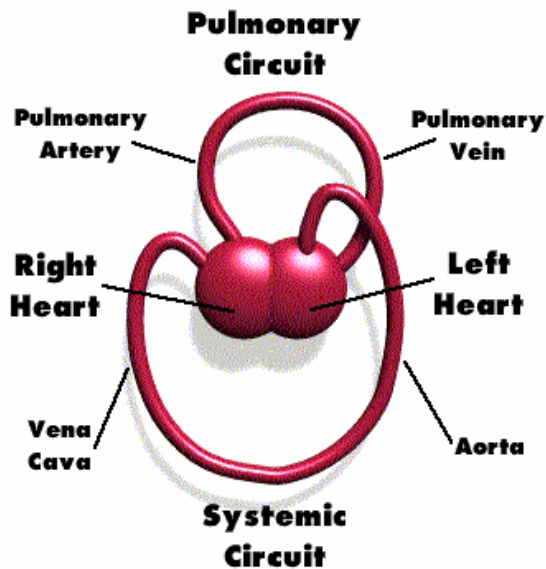
The actual appearance of the cardiovascular circuits is much more complex than this. But it still uses the same basic design that we have discussed. To see this, we can gradually bend the blood vessels around to resemble the way they are positioned in real life.

Press the green triangle to start the animation.



4

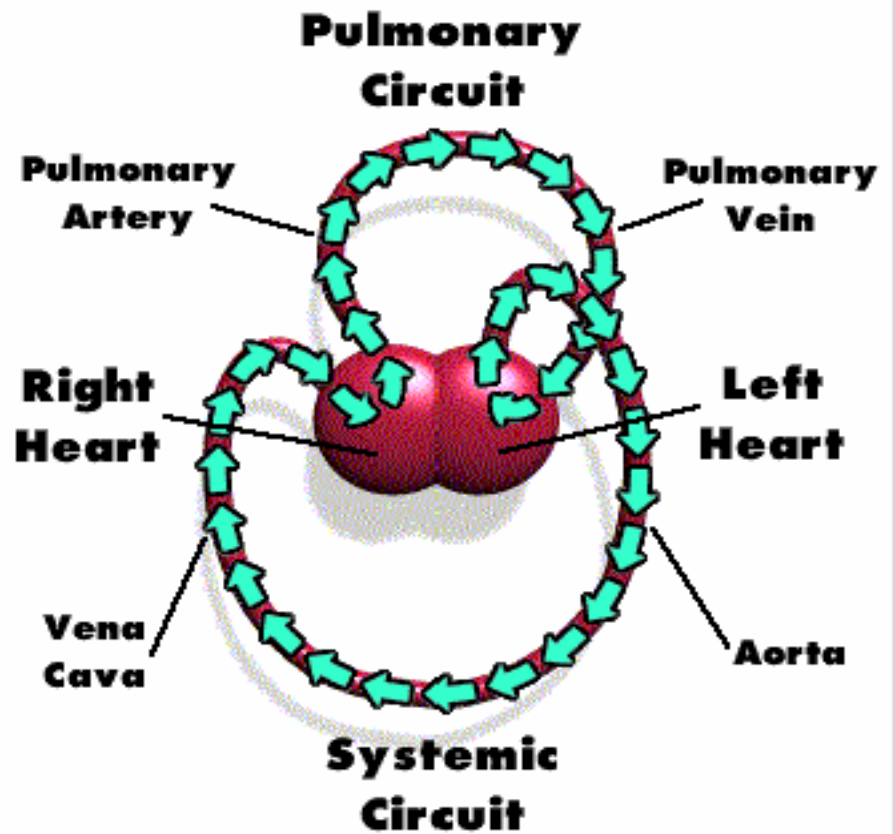
We can now label the major blood vessels that are connected to the heart. The pulmonary arteries and veins lie in the pulmonary circuit. The aorta and vena cava are part of the systemic circuit.



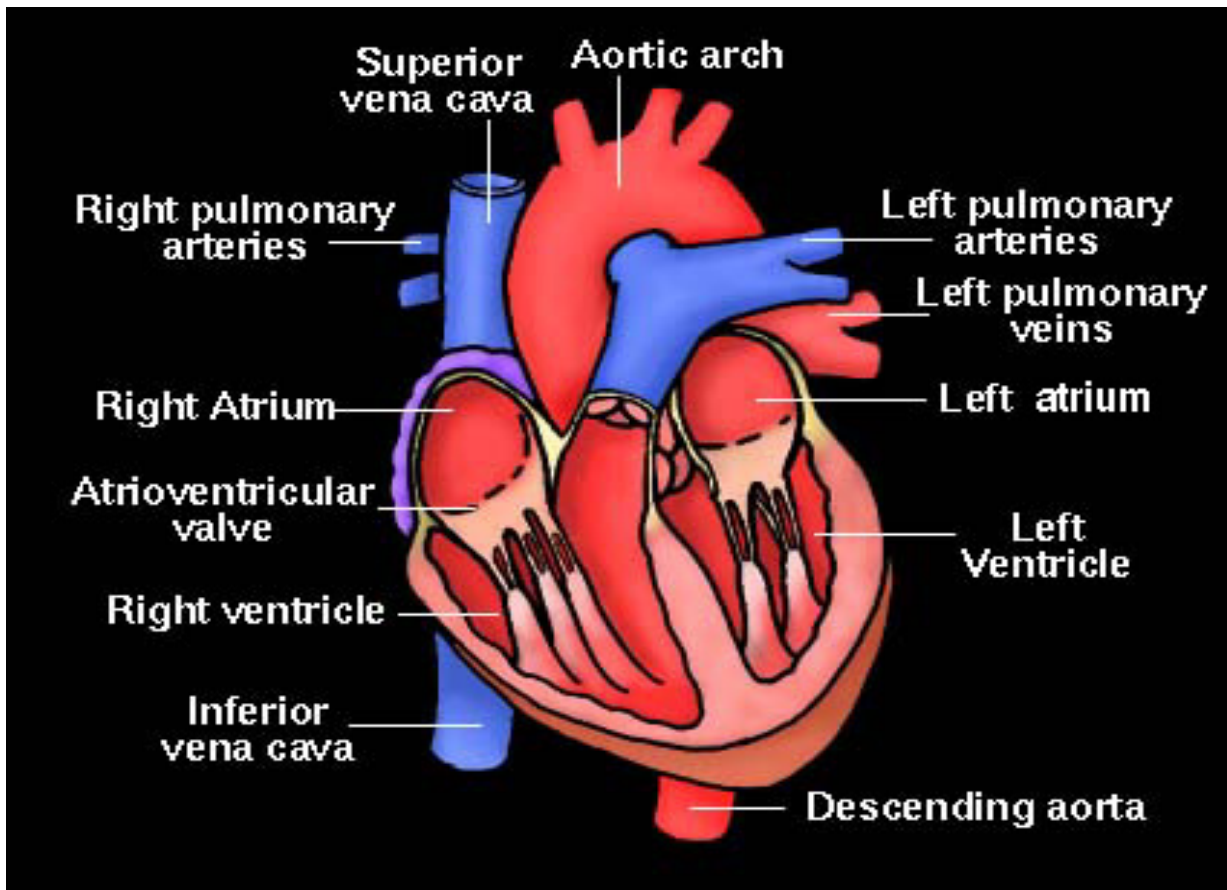
Now trace the arrows in the diagram so that you can understand how the heart pumps blood through the circulatory system.

5

Blood always leaves the heart through arteries, which include the aorta and pulmonary arteries. Conversely, blood enters the heart through the veins, the largest being the pulmonary veins and the vena cava.



Fun Fact: Arteries are colored blue because the blood in the arteries hasn't reached the lungs yet to get oxygen. Blood is blue in color until oxygen is added to it. After the blood has reached the lungs and becomes oxygenated, the color changes to red. Arteries are red because after the blood travels through the body, it returns back to heart in the veins that have oxygenated blood.



www.kensbiorefs.com/humphy.html

Learning Activity: Finding Your Pulse

Materials:

- Chalkboard or transparency
- Writing Materials

Preparation:

Introduce the concept of a pulse by stating that a healthy heart should take less than 60 seconds for circulation to occur. Complete the Pulse Activity to show students how long it takes for the heart to pump blood through the body.

Directions:

1. Explain to students that a pulse can be calculated by determining the number of times a heart beats in one minute.
2. Have students feel their pulse on their wrist or on their neck at the baseline of their jaw using the tips of the index and middle finger. **Note to the teacher:** Do not use the thumb because it has its own pulse.
3. Starting at the same time, have them count to themselves the number of beats for 15 seconds and multiply that amount by four. Have students record their pulse.
4. Take the average of the class's pulse and compare it to the average for children their age:
Ages 1-10 70-120 beats per minute
Ages 10 and up 60-100 beats per minute
**Note: You may want to review the concept of ranges with students.*
5. For the next ten minutes, have students engage in a game or activity that gets them moving around (i.e., have them run in place, do jumping jacks next to their desks). Have students record their pulse.
6. After ten minutes of physical activity, have them re-take their pulses.
7. Take the average of the class's pulse and write it on the board again.
8. Discuss the following questions with the class. What happened to your pulse the second time in comparison to the first time? What does this tell you about the heart as it relates to doing high energy activities?

Pulse	(Example Beats/Minute)	Beats/Minute
Pulse (before activity)	65	
Class average (before activity)	72	
Pulse (after activity)	95	
Class average (after activity)	93	

Learning Activity: Finding Your Target Heart Rate

Materials:

- Chalkboard or transparency
- Writing Materials

Directions:

1. Explain to students that there is a formula used to determine if our hearts are working at a level that is safe during exercise.
2. Explain that there is a limited amount of work that our hearts can do safely. We want to make them beat faster but not too fast.
3. The formula used to determine the safe level is called the Target Heart Rate.
4. The first step in finding the Target Heart Rate is to find the Maximum Heart Rate. The formula for this is 220 minus your age.

Example: $220 - 10 = 210$

5. The next step is to figure out the Target Heart Rate, which is where we want our heart rate to be when we are being physically active. The Target Heart Rate is a range instead of a steady rate. When being physically active and doing high-energy activities, it is necessary for our pulse to fall into this range to give our heart a hard enough workout. This will make the heart stronger without working it too hard.
6. To figure out the low end of the Target Heart Rate range, take the Maximum Heart Rate divided by 2.

Example: $210 \div 2 = 105$

7. To figure out the high end of the Target Heart Rate range, divide your previous result by 2 again and add that number to the previous result.

Example: $105 \div 2 = 52.5$

$$105 + 52.5 = 157.5$$

Target Heart Rate for 10 year old is: $105 - 157.5$ beats per minute

8. Have students look at the results of taking their pulse in Activity 1. Did their pulse fit within the Target Heart Rate the first time they took it before doing a physical activity? What about after doing a physical activity?

****Optional: The Target Heart Rate is 50-75 percent of the Maximum Heart Rate. If your students can calculate percentages, use percentages instead of the whole number formulas used above. Example: Target Heart Rate 1 = Max Heart Rate x .5
Target Heart Rate 2= Max Heart Rate x .75***

Since it is not always practical to stop and take your pulse for a whole minute during exercise, there is a short-cut. Using stopwatches or a clock with a second hand, have students count the number of beats using their wrist or neck for 10 seconds. Then multiply that number by 6. Repeat the 10 minute game or exercises. But, this time have the students use the short-cut method three times during the exercise and raise their hands if they are in the Target Heart Range.

Learning Activity: Cardiovascular Health Worksheet

Students will choose one activity and design a weekly workout schedule. Use the time worksheet to plot their current schedule and identify times to incorporate their fitness schedule. Ask students to present their respective cardiovascular fitness programs to the class. Discuss why they chose that activity and how they plan to incorporate this in their weekly schedule.

Cardiovascular Health Worksheet

Time	Activity	Location
7:00 - 7:30 AM		
7:30 - 8:00 AM		
8:00 - 8:30 AM		
8:30 - 9:00 AM		
9:00 - 9:30 AM		
9:30 - 10:00AM		
10:00 - 10:30AM		
10:30 - 11:00 AM		
11:00 - 11:30AM		
11:30 - 12:00 PM		
12:00 -12:30 PM		
12:30 - 1:00 PM		
1:00 - 1:30 PM		
1:30 - 2:00 PM		
2:00 - 2:30 PM		
2:30 - 3:00 PM		
3:00 - 3:30 PM		
3:30 - 4:00 PM		
4:00 - 4:30 PM		
4:30 - 5:00 PM		
5:00 - 5:30 PM		
5:30 - 6:00 PM		
6:00 - 6:30 PM		
6:30 - 7:00 PM		

Assessment Evidence:

Presentation**Journal Entry:**

The benefits of a cardiovascular fitness program in the community

Cardiovascular Fitness Programs are typically used by public servants to stay in shape, or to be healthy and well-prepared for any situation. Students should write a journal entry that describes the ways in which a cardiovascular fitness program is beneficial to policemen, firefighters, medics, and others who serve in the community. Journal entries should include the following information:

- Name
- Why are cardiovascular fitness programs beneficial to police officers and firemen?
- How do cardiovascular fitness programs benefit those who serve the community?
- What consequences would community officials face if they did not use fitness programs?

OR

The importance of understanding pulse and target heart rate

To identify if the students have grasped the concept concerning pulse and target heart rate, have the students answer the following questions in their journals. Journal entries should include name, date, and answers to the questions.

Pulse Activity/ Finding Your Target Heart Rate

9. What happened to your pulse the second time you took it in comparison to the first time? Did the number stay the same, increase, or decrease?
10. What does this tell you about your heart as it relates to doing high energy activities?
11. Explain why it is important to keep records of observations and investigations.
12. What are the benefits of increasing your pulse to achieve the Target Heart Rate? What are some high-energy activities that you can do to achieve your Target Heart Rate

Lesson 24: Stretching

Established Goals:

National Health Education Standards:

- 1.5.1.** Describe the relationship between healthy behaviors and personal health
- 1.5.4.** Describe ways to prevent common childhood injuries and health problems
- 7.5.1.** Identify responsible personal health behaviors
- 7.5.3.** Demonstrate a variety of behaviors to avoid or reduce health risks

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Applications: D, Writing Conventions Standard ABCD

Science: Life Sciences B

Ohio Indicators (Grade 4):

English Language Arts: Writing Applications: 5, Writing Conventions: 1-13

Understandings:

Students will understand...

- The concept of flexibility.
- The function of each type of muscle in the human body.
- Stretching can be accomplished anytime and anywhere.

Students will be able to...

- Follow a stretching routine.
- Identify muscles and their anatomical names.

Essential Questions:

- What are the benefits of stretching?
- What are the main functions of muscles?

Three Part Series:

Fitness is comprised of three components including strength, endurance, and flexibility. Each physical activity lesson targets components of fitness.

Part One: Active Every Day – Strength with minor emphasis on Endurance

Part Two: Cardiovascular Health – Endurance with minor emphasis on Strength

Part Three: Stretching – Flexibility

Part Three

Discussion:

Ask students to define muscle or the muscular system. If students are having trouble defining the terms, ask students to describe the function of a muscle. What does a muscle help us do? The muscular system includes all of the muscles in the body and muscles are bundles of cells and fibers that work by tightening up (contracting) and relaxing. Explain to the students that there are over 600 muscles in the body. Muscles function to move the body. There are three main types of muscles; Smooth Muscles, Cardiac Muscles, and Skeletal Muscles.

Smooth Muscles are involuntary muscles that work all the time without intentional thought or without a choice. Smooth muscles are found in the stomach, bladder, and eyes. Explain to students that muscles in the stomach help to digest food after it has been swallowed. Also, when someone is feeling sick, these same muscles aid in throwing up. In the bladder, muscles relax to hold in urine and contract to push the urine out. Blinking muscles in the eye help to protect the eye, keep the eye moisturized, and clear pollutants from the eye.

The cardiac muscle also known as the heart is an involuntary muscle. The heart contracts as blood is pumped through the circulatory system and relaxes to allow blood back to the heart.

Skeletal muscles are voluntary muscles. These muscles carry out pre-conceived or intentional actions. For instance, in order to move a hand, the brain processes the thoughts about moving the hand and sends signals to the hand to move. The hand in return moves. This is accomplished by tendons that attach the muscle to the bone. This muscle, bone and tendon group pulls to cause movement. In fact, muscles usually work in pairs to pull and relax. For instance, to bend the arm, the bicep muscle pulls and the tricep muscle relaxes. In contrast, extending the arm or making it straight requires the tricep muscle to pull and the bicep muscle to relax. Some examples of skeletal muscles include pecs, deltoids, and quadriceps.

Brainstorm with students the meaning of flexible and the purpose of stretching. Explain that flexible means capable of being bent or twisted without being injured. Explain to students muscles must move to remain healthy and functional. When muscles are not used, they lose their ability to contract and perform as they were intended. They may become weak or they may become tight, and when eventually used, be painful. Stretching is significant because it provides a workout for your muscles and enables muscles to become flexible when doing physical activity.

Ask students when they should stretch. Stretching should be done before and after exercise also explain that it is good to stretch at any time of the day. Stretching can be done in the morning when you wake up, while you watch TV, during breaks at school or any other time. The more you stretch, the more flexible you will become.

Explain that students should stretch before doing a high-energy activity. High-energy activities work your muscles, and your muscles are more likely to get strained or injured when they are working hard. Stretching makes it easier for a person to bend and flex the body without sustaining an injury.

Review the benefits of stretching:

1. Stretching makes muscles more flexible. Flexible muscles are less likely to become strained or injured.
2. Being flexible increases agility which improves the performance. Physical activities that require bending and moving, like sports, dancing, martial arts and even everyday things like chores are better accomplished after becoming more flexible.
3. Stretching helps to relieve stress. Stretching can reduce anxious and nervous feelings. Stretching and breathing helps with concentration and relaxation.
4. Stretching uses energy from your body without causing sweat. Therefore, stretching is possible in any setting or environment, and can be done in any and all attire. Stretching does not require any special equipment and can be done for short or long periods of time.
5. Stretching can make tight muscles feel better. If muscles are tight, light stretching can loosen them.

To cultivate interest in stretching, flexibility and muscle types, students will participate in a stretching routine and a scavenger hunt. Emphasize that stretching can be accomplished at anytime but it is important to stretch before and after physical activity and exercising.

Learning Activity: Stretching Routine

Note to Teacher: You may want to consult a physical education teacher or a certified fitness instructor at a local community center to help develop or supervise a simple stretching routine for the students.

Preparation:

Remind students of the three rules of stretching before beginning the routine. Make a poster of these rules so that you may refer to it when reviewing the rules of stretching and during the routine.

1. Stretch comfortably and stop if it hurts.
2. No bouncing during stretching, ease into the stretching stance.
3. No competing against others to see who can bend or stretch more.

Students can use floor mats/carpet squares or students can position themselves an arm's length apart on the floor.

The stretching routine can be done in the morning, between subjects or at breaks throughout the day.

Extension:

To promote an understanding of anatomy, have students name the muscles or muscle groups that are stretched during the routine.

Materials:

- Carpet squares or floor mats

Stretching Routine:

1. Stand and reach for toes. (20 seconds)
2. Stand and reach for the ceiling. (20 seconds)
3. Arm circles. (20 seconds)
4. Holding arms straight out, alternate between making a tight fist and spreading fingers with a flat palm. (20 seconds)
5. Hold right ankle behind back. (20 seconds)
6. Hold left ankle behind back. (20 seconds)
7. Sit down with legs straight out and reach for toes. (20 seconds)
8. Sit down with legs spread apart and reach forward. (20 seconds)
9. Sitting down with legs spread apart and reach toward right ankle. (20 seconds)
10. Sitting down with legs spread apart and reach toward left ankle. (20 seconds)

Learning Activity: Scavenger Hunt

Preparation:

View the Teacher's Key. Create clues that can be attached to surfaces throughout the classroom. On the back of the clues, write the information contained in the suggested exercise category. Provide dictionaries to each group. **Optional:** Using colored paper, copy the Student Group Scavenger Hunt Worksheet on red, blue, green, and yellow paper.

Extension:

Use the student worksheets as a homework assignment instead of a classroom activity and have each student complete the worksheet.

Materials:

- Student Group Scavenger Hunt Worksheet
- Teacher Scavenger Hunt Activity Worksheet Key
- Dictionary

Directions:

1. Hide clues throughout the classroom for students to find.
2. Divide students into groups and give each group a red, blue, green, or orange student group scavenger worksheet and a dictionary. The color coded worksheets have a theme connected with the clues. The red worksheet organizes the clues by listing the muscles from head to toe. The blue worksheet lists muscles from toe to head. The green worksheet lists the muscles in alphabetical order, and the yellow worksheet lists the anatomical names for the muscles in alphabetical order. Therefore, each color coded worksheet will have a different starting clue so teams can start at different points. This will prevent competing group members from copying from each other.
3. Instruct students to follow the directions outlined on the Student Scavenger Hunt Worksheet
4. Students should identify the answer for the first clue. Then, the students will search for clues throughout the classroom until they are ultimately led to the grand prize. The grand prize could include extra-credit or a purchased gift for the winning team
5. In order to win the grand prize, each team must have the name of the muscle, anatomical name of the muscle, the location of the clue, and the exercise that was attached to the clue listed in the correct order on the worksheet. Students will use the dictionary to look up the anatomical muscle name.

Teacher's Key

Clue	Muscle	Proper Muscle Name	Suggested Location	Suggested Exercise
This muscle is the same shape as a dime, and eye use this muscle to tell time.	Eye	Orbicularis oculi	Hide behind clock	Blink eyes 10 times before opening the next clue
Don't get frustrated and backed against the wall, learning about muscles is not hard at all.	Upper back	Deltoid	Hang on the wall	Clasps both hands behind the back and pull up for 20 seconds before opening the next clue
You are already armed with a lot of knowledge about the muscular system, but you can always learn more. The opportunity is waiting at the door.	Front arm	Biceps	Hide on the front of the door	Raise your hand straight above your head, bend the elbow and hold this position for 20 seconds before opening the next clue
Your understanding of the muscular system is quite alarming, I must admit. But to get the next clue search for it at the exit.	Back arm	Triceps	Hide on the back of the door	Use your left hand to pull your right arm across your chest as tightly as you can. Hold it for 20 seconds to stretch your left tricep, then switch arms.
Now, buck up and do your best, The next clue is hidden like a treasure chest; The clue is here, where X marks the spot	Upper chest	Pectoralis major (pecs)	Write a huge X on the chalkboard and hide under the chalkboard	Go give someone a big bear hug. When you squeeze with your arms, you're flexing your pectoralis major.
To stomach the next clue, if you are able, take a good hard look around a table.	Abdominal (stomach)	Rectus abdominis (abs)	Table	Have a friend hold your feet while you do 5 sit-ups. This exercises your rectus abdominis.
Stretching before doing physical activities is not a waist of your day. You should always try to stretch if you can before you play.	Waist	Obliques	Hide under the waste basket or trash can	Twist your body from left to right for 20 seconds before opening the next clue
With your hands on your lap, you are touching this muscle; Go look on the teacher's desk. Come on, kids, hustle!	Thigh	Quadriceps (quads)	Teacher's desk	Squat down so that your knees are bent slightly; hold that position for 30 seconds and you will feel your quadriceps.
This muscle is a great cushion, butt it can get soar if you use it too much.	Butt	Gluteus maximus	Hide under chair	Sit on the floor and pull your knees into your chest to stretch your gluteus maximus.
This muscle is the name of a baby cow, Go look around the coatroom; check it out now!	Calves	Gastonemius	Coatroom, Cubbies	Stand on the edge of a stair step, with your goes on the step and your heels hanging over the edge. Lower your heels and hold the position for 20 seconds to stretch your gastonemius.
Your muscles will feel free when you stretch this place below your knee. Come out the dark and look for the next clue on something shiny.	Shin	Tibialis anterior	Hang on the light or something shiny	Sit on a chair and point your toes as far as you can. Hold it for 20 seconds to stretch your tibialis anterior.

Student Group Worksheet:

Search the classroom for hidden clues about the muscular system. Each team is responsible for completing this worksheet. Using the clues fill in the muscle name, the anatomical muscle name, the location of the hidden clue and the exercise. Use the dictionaries to find the proper muscle name

Good Luck!

Red Team

First Clue: This muscle is the same shape as a dime, and **eye** use this muscle to tell **time**.

Muscle	Anatomical Muscle Name	Location	Exercise

Student Group Worksheet:

Search the classroom for hidden clues about the muscular system. Each team is responsible for completing this worksheet. Using the clues fill in the muscle name, the anatomical muscle name, the location of the hidden clue and the exercise. Use the dictionaries to find the proper muscle name
Good Luck!

Blue Team

First Clue: Your muscles will feel free when you stretch this place below your knee. Come out the dark and look for the next clue on something shiny.

Muscle	Anatomical Muscle Name	Location	Exercise

Student Group Worksheet:

Search the classroom for hidden clues about the muscular system. Each team is responsible for completing this worksheet. Using the clues fill in the muscle name, the anatomical muscle name, the location of the hidden clue and the exercise. Use the dictionaries to find the proper muscle name

Good Luck!

Green Team

First Clue: To **stomach** the next clue, if you are able, take a good hard look around a **table**.

Muscle	Anatomical Muscle Name	Location	Exercise

Student Group Worksheet:

Search the classroom for hidden clues about the muscular system. Each team is responsible for completing this worksheet. Using the clues fill in the muscle name, the anatomical muscle name, the location of the hidden clue and the exercise. Use the dictionaries to find the proper muscle name
Good Luck!

Orange Team

Orange Team: You are already **armed** with a lot of knowledge about the muscular system, but you can always learn more. The opportunity is waiting at the **door**.

Muscle	Anatomical Muscle Name	Location	Exercise

Assessment Evidence:

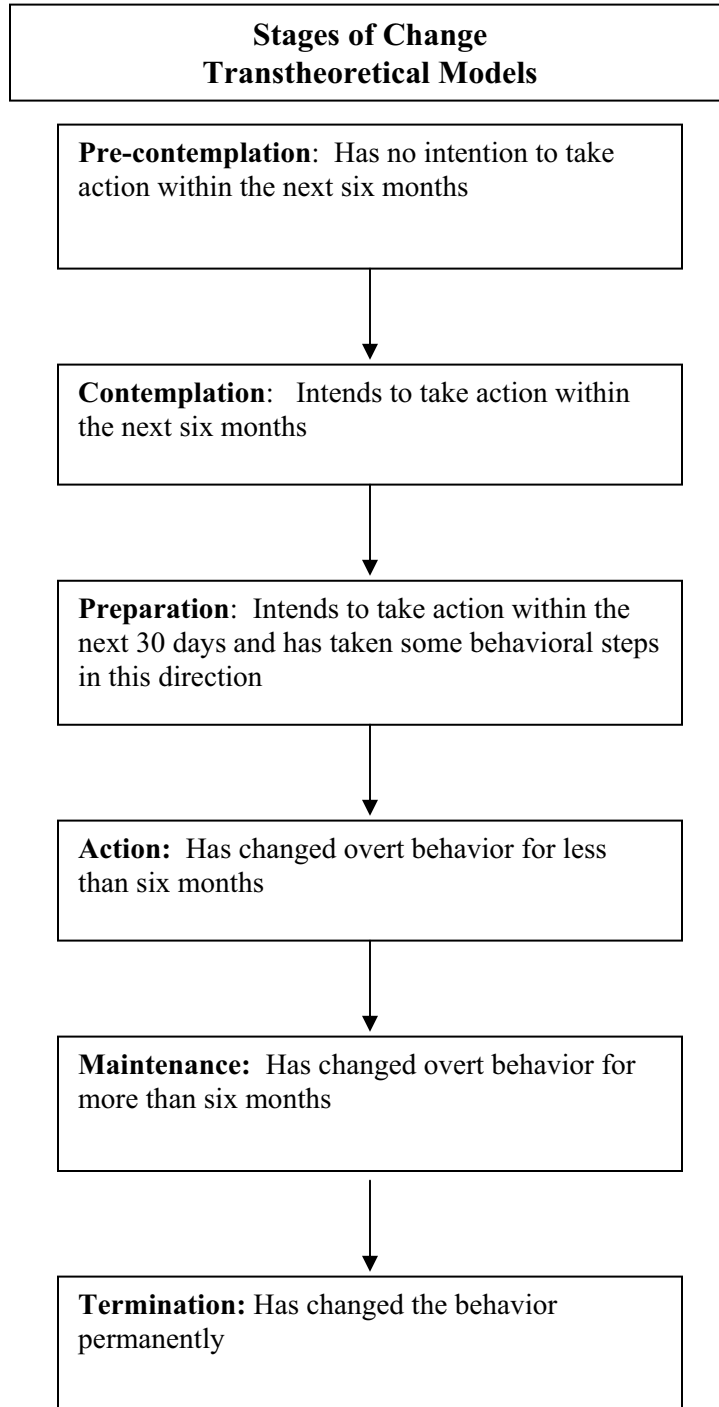
Student Group Scavenger Hunt Worksheet**Journal Entry:**

Have students complete a one page summary identifying the answers to these questions. Journal entries should include date and name of student. How is stretching a part of a healthy lifestyle and how is it included in physical activity? Do you define a “healthy lifestyle” differently now? How has your point of view changed concerning physical activity?

Lesson 25: Review of Lessons 22-24 (Physical Activity)

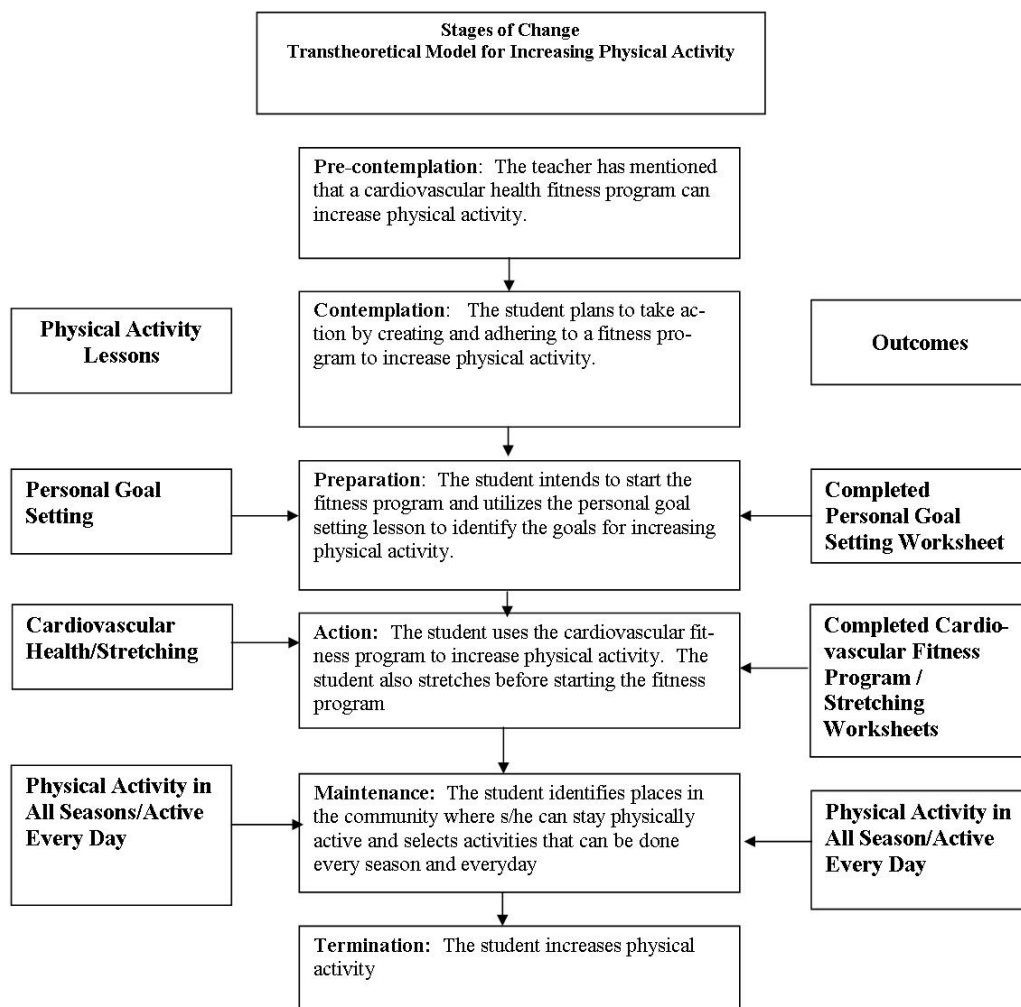
Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>1.5.1. Describe the relationship between healthy behaviors and personal health</p> <p>5.5.3. List healthy options to health-related issues or problems</p> <p>5.5.5. Choose a healthy option when making a decision</p> <p>6.5.1. Set a personal health goal and track progress toward its achievement</p> <p>6.5.2. Identify resources to assist in achieving a personal health goal</p> <p>7.5.1. Identify responsible personal health behaviors</p> <p>7.5.2. Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health</p> <p>7.5.3. Demonstrate a variety of behaviors to avoid or reduce health risks</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>English Language Arts:</i> Writing Process Standard: B, Writing Applications Standard: D, Writing Conventions Standard: ABCD,</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p><i>English Language Arts:</i> Writing Process: 2,3, Writing Applications: 5, Writing Conventions: 1-13, Communications: 8a-f</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The process of change and how each stage plays a role in altering a behavior permanently. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Identify a task and make a plan to accomplish a long-term goal. •Use tools to help maintain a behavioral change.
Lessons Reviewed:	
<ul style="list-style-type: none"> • Active Every Day (22) •Cardiovascular Health (23) •Stretching (24) 	

Review: Change occurs after an individual has completed a series of steps to alter lifestyle patterns. Therefore, Dr. Prochaska's Transtheoretical Model illustrates the process of change by identifying the Pre-contemplation, Contemplation, Preparation, Action, Maintenance, and Termination Stages. Each stage is outlined below.



Discussion:

This model identifies how a student can increase physical activity by utilizing the content in all of the physical activity lessons. After a reviewing how all the different lessons contribute to increasing physical activity, have the students complete at least one of the worksheets to emphasize the process of change. This will also demonstrate the amount of effort it takes to identify a problem, make a plan to solve the problem and follow-through to accomplish a goal.



Learning Activity: Process of Change Worksheets
Goal Tracking Worksheet

Name _____

Goal: _____

Step	Date Started	Date Accomplished	Reward
Example: Identifies activity for cardiovascular fitness plan	Example: 10/23/06	Example: 10/27/06	Example: New CD

Cardiovascular Health/Stretching Time Management Worksheet

Name _____

Goal: _____

Time	Activity	Stretching (before activity)	Minutes
Example: 12:00 PM - 12:45 PM	Example: Jumping Rope	Example: Yes	Example: 45 minutes

Physical Activity in All Seasons/Active Every Day Worksheet

Name _____

Goal: _____

Activity	Location	Season (Fall, Winter, Spring, Summer)	Minutes
Example: Jumping rope during recess	Example: School	Example: Spring	Example: 45 minutes

Assessment Evidence:

Journal Entry:

Have students keep a journal at home. In the journal, students should include information about their progress of completing the goal, major accomplishments, minor set-backs, and strategies that have helped them reach their goal.

**Completed Personal Goal Worksheet,
Completed Cardiovascular Health Worksheet
Physical Activity in All Seasons/Active Every Day**

Unit 4: Tobacco

Lesson 26: Health Risks and Costs of Tobacco Use

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>1.5.1. Describe the relationship between healthy behaviors and personal health</p> <p>2.5.3. Identify how peers can influence healthy and unhealthy behaviors</p> <p>3.5.1. Identify characteristics of valid health information, products, and services</p> <p>5.5.1. Identify health-related situations that might require a thoughtful decision</p> <p>5.5.4. Predict the potential outcomes of each option when making a health-related decision</p> <p>5.5.6. Describe the outcomes of a health-related decision</p> <p>7.5.3. Demonstrate a variety of behaviors to avoid or reduce health risks</p> <p>8.5.2. Encourage others to make positive health choices</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>English Language Arts:</i> Writing Applications Standard: D, Writing Convention Standard: ABCD, Concepts of Print, Comprehension Strategies and Self Monitoring Strategies Standard: AB</p> <p><i>Science:</i> Scientific Inquiry Standard: AB, Scientific Ways of Knowing Standard: B</p> <p><i>Mathematics:</i> Number, Number Sense and Operations Standard: K</p> <p><u>Ohio Indicators</u></p> <p><i>English Language Arts:</i> Writing Applications: 5, Writing Conventions: 1-13, Concepts of Print, Comprehension Strategies and Self Monitoring Strategies: 1,2</p> <p><i>Science:</i> Scientific Inquiry: 2,3, Scientific Ways of Knowing: 2</p> <p><i>Mathematics:</i> Number, Number Sense and Operations: 12</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •How teeth are discolored during smoking. • The cost of smoking over various lengths of time. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Conduct an experiment. •Read a selection and identify the appropriate answer. •Calculate the price of tobacco.
Essential Questions:	
<ul style="list-style-type: none"> •What are the long-term and short-term consequences of using tobacco? 	

Learning Plan:

Background:

This lesson will discuss tobacco, warning labels, and long-term and short-term consequences of tobacco use. To demonstrate the significance of warning labels, please collect a few samples in advance to use in the discussion section of this lesson. However, you may wish to skip the warning label relating to pregnancy, as it may be a distraction to the lesson and prompt questions regarding pregnancy.

Discussion:

Explain to students that tobacco is a type of plant whose leaves are smoked in cigarettes or cigars, or chewed as chewing tobacco. Discuss the contents of a cigarette. Cigarettes contain nicotine, tar, and other harmful chemicals. These chemicals can aid in addiction or cause serious illnesses including lung, mouth, throat, and bladder cancer. Therefore, tobacco can be harmful and dangerous for the body. Have the students read the warning labels from the empty cigarette or tobacco packages.

Explain that these warning labels were created by the Surgeon General who is a health expert. Warning labels must be visible on every package of tobacco to inform the buyer of the negative consequences associated with tobacco use. Warning labels warn about long-term, or continuous, tobacco use. A cigarette contains over 4000 chemicals, over 60 of which increase the risk of cancer, emphysema and other diseases in humans and animals.

Note: *Some people get these diseases even though they are not smokers; however, smoking greatly increases the risks.*

Explain that in addition to these long-term negative consequences, there are also many short-term consequences. Short-term consequences appear rather quickly and can include:

- Yellowing of the teeth and fingertips from tobacco stains
- Smelly smoke-filled hair and clothing
- An increased risk of cavities and gum diseases
- Breathing difficulties
- Financial costs – cigarettes and tobacco cost a lot of money which could be spent on other things.

Teeth discoloration and the financial cost of purchasing tobacco products are the most common short-term consequences of smoking or tobacco use. Therefore, students will participate in an experiment that illustrates the process in which teeth turn yellow from tobacco use. Students will also complete a math worksheet that displays the amount of money spent from buying tobacco products over specified periods of time.

Learning Activity: Teeth Discoloration Experiment

Materials:

- 5 paper cups with lids
- Paintbrushes – 1 for every student
- Brown and yellow food coloring
- Student Worksheet

Preparation:

1. Prepare five “unknown solutions” of food coloring and water for each group of students as follows:
 - A.** 20 mL of water and 2 drops of yellow food coloring
 - B.** 20 mL of water and 2 drops of brown food coloring
 - C.** 20 mL of water
 - D.** 20 mL of water and 5 drops of brown food coloring
 - E.** 20 mL of water and 5 drops of yellow food coloring
2. Label the cups with their corresponding letter as listed above in bold.

Note to Teacher: *Test the solutions on paper before doing the experiment. Slight differences in food coloring may change the amounts needed to create an easy-to-see continuum of “stains.” See the Results Table for descriptions of what color each solution should be when applied to paper.*

Directions:

1. Place the five solutions in five different locations or stations throughout the classroom.
2. Divide the students into groups and have each group rotate to each of the stations to paint the teeth on their worksheet with each solution. The letter beside the teeth should match the letter on the cup of solution they use.
3. When they have finished applying all of the solutions and they have dried, have students guess which solutions match the corresponding type of smoker according to the results table.
4. Next, have the student fill out the reading worksheet using the results from the experiment.
5. Reveal the results to the students and have the students cut out and correctly re-order their teeth. The order should depict the spectrum of smoking, beginning with the non-smoker and ending with the heavy smoker. Students may glue this order on a separate piece of paper, or you may wish to have them write numbers next to the teeth to order them

Discussion:

Discuss the following questions with the students. Which teeth are the most stained and why? How could someone avoid staining their teeth like this? If Ann only used tobacco for a short time, why are her teeth yellow? Explain to the students that Denisha's teeth are the darkest and most stained from smoking cigarettes and that not smoking is the best defense against discolored teeth. Highlight that Ann's teeth are slightly yellow because any tobacco use, no matter how little, can yellow teeth. Stains get worse over time, but the stains begin to form right after the start of tobacco use.

Results Table

Light yellow	Solution A (Ann)	Light/Early tobacco use
Dark yellow	Solution E (Ethan)	Moderate tobacco use
Light brown	Solution B (Bobby)	Long, moderate tobacco use
Dark brown	Solution D (Denisha)	Heavy tobacco use
Clear	Solution C (Corrine)	No tobacco use

Teeth Discoloration Worksheet

Directions:

1. Visit each teeth station and color in the teeth.
2. Make sure that you color in the teeth with the same solution.
 - Color in Teeth A with Solution A
 - Color in Teeth B with Solution B
 - Color in Teeth C with Solution C
 - Color in Teeth D with Solution D
 - Color in Teeth E with Solution E
3. Using the colored teeth, fill in the results table so you can see how tobacco affects the color of teeth.
4. Fill in the reading worksheet with the correct names. Use the yellow teeth experiment to help you find the answers.
5. Check your answers with your teacher!!!!!!!

Good Luck

A.



B.



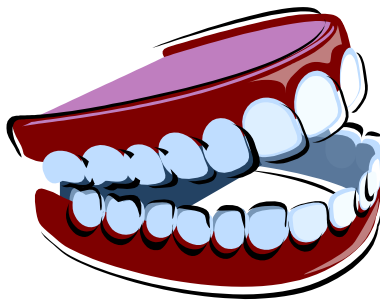
C.



D.



E.



Results:

Light yellow	Solution: Name:	Light/Early tobacco use
Dark yellow	Solution: Name:	Moderate tobacco use
Light brown	Solution: Name:	Long, moderate tobacco use
Dark brown	Solution: Name:	Heavy tobacco use
Clear	Solution: Name:	No tobacco use

Circle of Friends

Once upon a time, there were five best friends named Ann, Bobby, Corrine, Denisha, and Ethan who lived in the same neighborhood. This circle of friends went to the same school, they played at the same park after school, and they were even in the same karate class. One day one of the best friends decided to start smoking cigarettes and this friend wanted everyone in the circle of friends to start smoking too.

Some of the friends started smoking because they thought it made them look older and cool, but one friend never started at all. In fact, _____ wished that no one had started smoking. She knew that it was wrong to smoke and that people shouldn't smoke just to feel cool or look older. She knew that even if there was someone that already smoked in her family, it still wasn't a good thing to do.

She started talking to _____ who had been smoking for only a little while, and told her about some of the short-term consequences, which included smelly breath and nasty yellow teeth. She stopped smoking immediately because she didn't want to ruin her pretty white smile. Recently, _____, who had only been smoking a little longer than the girl who didn't want to ruin her smile, was having trouble keeping up in karate class. This friend could no longer finish the class without taking breaks to catch his breath. The friend that never smoked told him that he was having trouble breathing because he started smoking, so he stopped immediately. _____, who had been smoking almost the longest, realized that he didn't look as handsome as he did before and he couldn't even keep up in karate class anymore because it took too much energy for him to finish the class. Since he didn't have enough energy to breathe, he wasn't able to compete for his yellow belt. He felt awful, but the friend that never smoked told him that all he had to do was stop smoking. So he stopped and continued to practice for the next belt competition.

Finally, the karate tournament was coming up and everyone was prepared for it except _____, who had been smoking the longest and tried to get everyone else to smoke. Not only was she not able to practice because she couldn't breathe, but she also didn't have any money to buy her karate outfit for the tournament. She spent all of her money on cigarettes and didn't have any money left. Ann, Bobby, Corrine, and Ethan were well prepared for the tournament. They looked healthy, had nice smiles, and wore new tournament clothes. As she looked at all of the rest of her friends, she knew that smoking wasn't the smart or cool thing to do. She stopped that day and never smoked again.

Learning Activity: It All Adds Up

Materials:

- Chalkboard, transparency or butcher paper
- Worksheets (one per student)
- Pencils
- Calculators (optional)
- Poster board or butcher paper
- Art supplies
- Old magazines
- Scissors

Preparation:

Identify the price of a pack of cigarettes in your community, and write the price on a chalkboard, transparency or butcher paper.

Directions:

Calculating Costs of Buying Cigarettes

1. Students will calculate the amount of money a smoker spends on buying cigarettes during different time periods.
2. Explain the conversion process for a day, week, month and year with the students.
3. The cost of smoking increases over time. Therefore, the more that you smoke, the more it costs. Have students complete the Cost of Smoking worksheet.
4. Have students create posters showing objects that could be purchased with the same amount of money calculated on the worksheet.

Discussion:

Discuss the following questions with the students. Were the costs more or less than what you expected them to be? If some people know how much money it costs and how much time they lose by smoking cigarettes and using tobacco products, why do they keep doing it?

Extension: Adding the Extra Health Costs

Explain to students that over time, smokers pay more than non-smokers for doctor's visits and other health costs related to smoking. Some health experts have estimated that just the extra health costs add about \$3.45 per pack of cigarettes. Have the students redo their worksheets and adjust their figures to include the additional costs.

Optional: Losing Time

Warning: This may introduce questions about death or dying. Please discuss this topic carefully and use your discretion when discussing this matter.

Inform students that people who use tobacco products can lose time from their life expectancy. Health experts estimate that every cigarette smoked shortens life expectancy by 11 minutes. Have students calculate the number of minutes reduced by the smoking patterns on their worksheet.

Completed Example

It All Adds Up

1 pack of cigarettes costs: \$4.00

There are 20 cigarettes in a pack, so each cigarette costs: \$0.20
(Cost of pack \div 20 = cost per cigarette)

1 week = 7 days

1 month = 4 weeks

1 year = 12 months

1 cigar = 10 cigarettes

Smoking for ONE WEEK:

**Since there are 7 days in a week, multiply the cost of one cigarette by 7.*

1 cigarette per day for a week = \$1.40

5 cigarettes per day for a week = \$7.00

10 cigarettes per day (half a pack) or 1 cigar per day for a week = \$14.00

1 pack per day (20 cigarettes) for a week = \$28.00

1 $\frac{1}{2}$ packs per day (30 cigarettes) for a week = \$42.00

2 packs per day (40 cigarettes) for a week = \$56.00

Smoking for ONE MONTH:

**Since there are approximately 4 weeks in a month, multiply the responses above by 4.*

1 cigarette per day for a month = \$5.60

5 cigarettes per day for a month = \$28.00

10 cigarettes per day (half a pack) 1 cigar per day for a month = \$56.00

1 pack per day (20 cigarettes) for a month = \$112.00

1 $\frac{1}{2}$ packs per day for a month = \$168.00

2 packs per day for a month = \$224.00

Smoking for ONE YEAR:

**Since there are 12 months in a year, multiply the responses above by 12.*

1 cigarette per day for a year = \$67.20

5 cigarettes per day for a year = \$336.00

10 cigarettes per day (half a pack) 1 cigar per day for a year = \$672.00

1 pack per day (20 cigarettes) for a year = \$1,344.00

1 $\frac{1}{2}$ packs per day for a year = \$2,016.00

2 packs per day for a year = \$2,688.00

Smoking for FIVE YEARS:

**Using the responses above, multiply each by 5, for 5 years.*

1 cigarette per day for five years = \$336.00

5 cigarettes per day for five years = \$1,680.00

10 cigarettes per day (half a pack) 1 cigar per day for five years =
\$3,360.00

1 pack per day (20 cigarettes) for five years = \$6,720.00

1 $\frac{1}{2}$ packs per day for five years = \$10,080.00

2 packs per day for five years = \$13,440.00

Smoking for TEN YEARS:

**Using the responses above, multiply each by 2, since 5 years \times 2 = 10 years.*

1 cigarette per day for ten years = \$672.00

5 cigarettes per day for ten years = \$3,360.00

10 cigarettes per day (half a pack) 1 cigar per day for ten years =
\$6,720.00

1 pack per day (20 cigarettes) for ten years = \$13,440.00

1 $\frac{1}{2}$ packs per day for ten years = \$20,160.00

2 packs per day for ten years = \$26,880.00

Smoking for FIFTY YEARS:

**Using responses above, multiply by 5, since 10 years \times 5 = 50 years*

1 cigarette per day for fifty years = \$3,360.00

5 cigarettes per day for fifty years = \$16,800.00

10 cigarettes per day (half a pack) or 1 cigar per day for fifty year =
\$33,600.00

1 pack per day (20 cigarettes) for fifty years = \$67,200.00

1 $\frac{1}{2}$ packs per day for fifty years = \$100,800.00

2 packs per day for fifty years = \$134,400.00

It All Adds Up

1 pack of cigarettes costs: \$_____.

There are 20 cigarettes in a pack, so each cigarette costs: \$_____.
(Cost of pack \div 20 = cost per cigarette)

1 week = 7 days

1 month = 4 weeks

1 year = 12 months

1 cigar = 10 cigarettes

Smoking for ONE WEEK:

**Since there are 7 days in a week, multiply the cost of one cigarette by 7.*

1 cigarette per day for a week = \$_____

5 cigarettes per day for a week = \$_____

10 cigarettes (half a pack) or 1 cigar per day for a week = \$_____

1 pack per day (20 cigarettes) for a week = \$_____

1 $\frac{1}{2}$ packs per day (30 cigarettes) for a week = \$_____

2 packs per day (40 cigarettes) for a week = \$_____

Smoking for ONE MONTH:

**Since there are approximately 4 weeks in a month, multiply the responses above by 4.*

1 cigarette per day for a month = \$_____

5 cigarettes per day for a month = \$_____

10 or cigarettes (half a pack) or 1 cigar per day for a month = \$_____

1 pack per day (20 cigarettes) for a month = \$_____

1 $\frac{1}{2}$ packs per day for a month = \$_____

2 packs per day for a month = \$_____

Smoking for ONE YEAR:

**Since there are 12 months in a year, multiply the responses above by 12.*

1 cigarette per day for a year = \$ _____

5 cigarettes per day for a year = \$ _____

10 or cigarettes (half a pack) or 1 cigar per day for a year = \$ _____

1 pack per day (20 cigarettes) for a year = \$ _____

1 $\frac{1}{2}$ packs per day for a year = \$ _____

2 packs per day for a year = \$ _____

Smoking for FIVE YEARS:

**Using the responses above, multiply each by 5, for 5 years.*

1 cigarette per day for five years = \$ _____

5 cigarettes per day for five years = \$ _____

10 or cigarettes (half a pack) or 1 cigar per day for five years \$ _____

1 pack per day (20 cigarettes) for five years = \$ _____

1 $\frac{1}{2}$ packs per day for five years = \$ _____

2 packs per day for five years = \$ _____

Smoking for TEN YEARS:

**Using the responses above, multiply each by 2, since 5 years \times 2 = 10 years.*

1 cigarette per day for ten years = \$ _____

5 cigarettes per day for ten years = \$ _____

10 or cigarettes (half a pack) or 1 cigar per day for ten years = \$ _____

1 pack per day (20 cigarettes) for ten years = \$ _____

1 $\frac{1}{2}$ packs per day for ten years = \$ _____

2 packs per day for ten years = \$ _____

Smoking for FIFTY YEARS:

**Using responses above, multiply by 5, since 10 years \times 5 = 50 years*

1 cigarette per day for fifty years = \$ _____

5 cigarettes per day for fifty years = \$ _____

10 or cigarettes (half a pack) or 1 cigar per day for fifty years = \$ _____

1 pack per day (20 cigarettes) for fifty years = \$ _____

1 $\frac{1}{2}$ packs per day for fifty years = \$ _____

2 packs per day for fifty years = \$ _____

Assessment Evidence:

Journal Entry:

Have students write a one page summary discussing these questions. Journal entries should include date and name. Which consequence of tobacco use that we talked about surprised or disgusted you the most? Knowing the consequences, how do you feel about tobacco use now? Is this different than what you thought about tobacco use before you knew the consequences?

Teeth Discoloration Worksheet**It All Adds Up Worksheet**

Lesson 27: Talking to Peers about Tobacco

Established Goals:

National Health Education Standards:

- 1.5.1 Describe the relationship between healthy behaviors and personal health
- 2.5.1 Describe how family influences personal health practices and behaviors
- 2.5.3 Identify how peers can influence healthy and unhealthy behaviors
- 4.5.1 Demonstrate effective verbal and non-verbal communication skills to enhance health
- 4.5.2 Demonstrate refusal skills to avoid or reduce health risks
- 5.5.1 Identify health-related situations that might require a thoughtful decision
- 5.5.4 Predict the potential outcomes of each option when making a health-related decision
- 5.5.5 Choose a healthy option when making a decision
- 5.5.6 Describe the outcomes of health-related decision
- 7.5.1 Identify responsible personal health behaviors
- 7.5.2 Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health
- 7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Application Standard: C, Communications: AD

Ohio Indicators (Grade 4):

English Language Arts

Writing Applications: 3, 5; Communication: 1

Understandings:

Students will be able to...

- Say no to using tobacco with confidence.
- Communicate with their peers about the consequences of using tobacco.
- Name at least one way you can communicate with peers without addressing them face to face.

Students will understand...

- The importance of using “I” statements.
- What it means to communicate effectively.
- When it is necessary to go to a trusted adult about the behavior of a peer or family member.
- The consequences of giving into peer pressure.

Essential Questions:

- What are the reasons that students give in to peer pressure?
- Why do students fear communicating with peers and adults about tobacco?
- Is there a simple formula for dealing with pressure from peers to do things students know are wrong?

Learning Plan:

Discussion: Communication Strategies

Children begin to face the challenge of communicating with peers and family at a very young age. This can be particularly problematic when children experience peer pressure to begin using tobacco products. Children should be equipped with the proper communication skills and tactics for avoiding conflict. If students can communicate effectively, they can say no to using tobacco with confidence and become a role model for their peers.

Ask students to raise their hand if they've ever been misunderstood*. Ask volunteers to tell a story of a situation where they were misunderstood. Following the story or stories, ask the class for ideas on how the person telling the story could have communicated their wants/needs/desires more effectively. Do this to see how much students already know.

**Explain the term misunderstood if necessary. Use this opportunity as an example of unclear communication. You want them to answer a question, but they do not understand the vocabulary you are using. Therefore, the class and the teacher are not communicating effectively.*

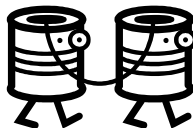
Students should understand that communication is not only about the words that you speak or write. Communication includes:

- Your body language
- How well you listen
- How well your actions and your words match
- Your tone of voice

When you are speaking face to face with someone, you should:

- Look them in the eye (make eye contact)
- Use a conversational tone (Do not yell or speak too quietly)
- Speak with confidence. Do not act afraid of the other person or unsure of your response(s).
- Use proper body language. Do not cross your arms, look down or away from the person you are speaking to, roll your eyes or make faces.
- Do not interrupt. Wait until the person speaking has finished.

Most important, do not say one thing and do another! If you say NO, show that you really mean NO.



Dealing with Peer Pressure: How to say NO effectively

Equation for success

Say NO with confidence + give a reason why + Make your action match your words (walk away if necessary) = Saying NO effectively

•**Say NO with confidence:** When someone wants you to do something that you know is wrong, unhealthy or unsafe, say NO as if you really mean it. Use a firm tone without yelling.

•**Give a reason why:** Give a specific reason why you do not want to do what you are being asked to. Show that you care about yourself enough to say NO. Expressing your opinion can be very powerful and you may be saving someone from harming themselves.

•**Make your actions match your words:** If you say no and then proceed to participate in the action/activity that you know is wrong, your peers will not take you seriously. You will be faced with this situation time and time again. Walking away from the situation may be necessary to prove your point and avoid more pressure.

•Reasons to say NO to tobacco

1. All forms (cigarettes, chew, dip and cigars) can cause multiple health problems in the future. This includes gum disease and a variety of cancers.
2. Smoking makes your teeth turn yellow and gives you bad breath.
3. Smoking makes it difficult to breathe.
4. Smoking makes it hard to be physically active.

•Great ways to express your opinion about using tobacco. Simply say:

1. NO thank you, I care about my health.
2. NO thank you, I plan to live a very long time.
3. NO thanks, I like to spend my money on other things.
4. NO thanks, I don't do things that are illegal.
5. NO thanks, I don't want to smell horrible when I have to go home.
6. NO thank you, it will affect my game in soccer (football, baseball, etc) or my ability to dance, do tai chi, karate, etc.
7. NO thanks. I know that once you start it is very hard to stop.

**** Always use "I" statements. Keep the situation positive by talking about how you feel about something.**

Learning Activity: Writing a Letter

When you are upset or hurt by a friend or family member, or they are doing something to hurt themselves, it can be difficult to talk to them face to face. There are several other ways to communicate with them. Students should learn alternate forms of communication, such as writing a letter.

Writing a letter gives students the opportunity to be heard, without being interrupted or challenged. Taking the time to write a letter shows that you care. You can also revise the letter as many times as you want before giving it to the recipient. That way, it will say exactly what you want it to say.

Directions:

1. Have students write a letter to a friend who has done something to upset them (can be a hypothetical situation). This can be a variety of things, and it does not have to be about tobacco.
2. The letter should be no more than one page.
3. The students should use “I” statements.
4. The students should use the following worksheet and sample letter as a guide.

Sample Worksheet

Writing a Letter to a Friend

Who are you writing to? (Does not have to be a real person): Kim

What has this person done to upset you? She tried smoking and asked me to smoke with her.

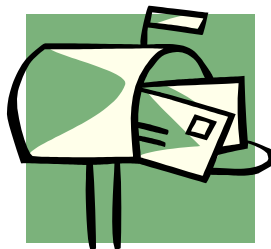
Why did this bother you? I know that smoking is very unhealthy and it can cause serious problems.

What do you like about the person you are writing to? She is very nice and always cheers me up when I am not feeling good.

Why do you care about him or her? She is my best friend.

What should he or she do differently in the future to avoid hurting you or their self?

I wish Kim would not smoke or ask me to do things that I know are unhealthy. I care about her health and mine.



Sample Letter

Writing a Letter to a Friend

Directions: Write a letter to your friend using the information you filled out on the worksheet. Use correct letter format. Make sure you use “I” statements.

January 7, 2007

Dear Kim,

Remember last week when you asked me to smoke a cigarette with you? That really hurt my feelings. Smoking is really unhealthy, and I do not want to ever start smoking.

You are my best friend and I really like spending time with you. We always have fun together. I feel uncomfortable when I am asked to do things that are wrong.

I hope that you will not smoke anymore. I care about you and your health the same way I care about my health. I want you to be my best friend forever.

Sincerely,

Jane

Writing a Letter to a Friend

Who are you writing to? (Does not have to be a real person): _____

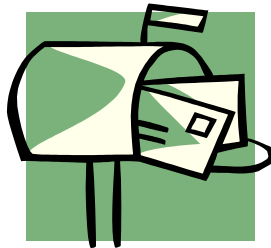
What has this person done to upset you? _____

Why did this bother you? _____

What do you like about the person you are writing to? _____

Why do you care about him or her? _____

What should he or she do differently in the future to avoid hurting you or their self?



Writing a Letter to a Friend

Directions: Write a letter to your friend using the information you filled out on the worksheet. Use correct letter format. Make sure you use “I” statements.

Learning Activity: Role Play

Students should be given the opportunity to practice their communication skills with their classmates. Role playing gives the students a chance to say NO in an unthreatening environment. It also gives them the opportunity to give each other feedback.

Note: This activity may be done on a separate day if time is a concern.

Directions:

1. Get three volunteers to do the example scenario for the class. This scenario has the ending written for the students.
2. As a group, the students should give the volunteers feedback on their performance. They should be judging their communication skills: tone of voice, body language, etc. Since the students have no input on the lines of the role play, they can't be critiqued on that aspect of the scenario.
3. Divide the class into groups of six and hand out a scenario to each group.
4. Each scenario uses three people, a narrator and two people interacting. The endings are unwritten. Names may be changed to fit the people playing the roles.
5. Students should be given sufficient time to write the ending(s). After half the group acts out the scenario, then the other three members should be given the opportunity to act it out.
6. Have the students perform the scenarios in front of the class. Students should use the Role Play Feedback form to give positive comments and suggestions for improvement.

Role Playing Debrief

Scenario One: How did Brian try to convince Tim to try his brother's cigarettes? What did Tim do that was really good in response? What else could either person have done?

Scenario Two: What was good about the ending the group came up with? What would have happened to the adults if they had been caught buying the cigarettes for the boys? What would have happened if the boys had been caught smoking?

Scenario Three: What was good about the ending the group came up with? Is it true that baseball players use real chewing tobacco? (*No, they are banned from doing so.*) Is chewing tobacco healthier than cigarettes? (*No, it can lead to just as many health problems as cigarettes. No tobacco is safe.*)

Scenario Four: How should you deal with telling an adult about a situation where you find someone you know and love smoking? What was good about the group's ending?



Role Play- Scenario 1

Narrator: *Brian and Tim are hanging out at Brian's house after school. His parents are not home. They go into Brian's older brother's room to look for his football.*

Brian: I will just go into Todd's room to look for his football.

Tim: Ok, I'm going to go get a glass of water before we start to play.

Brian: Wait! Look what I just found- a pack of cigarettes! I didn't know my brother smoked!

Tim: I'd put those back and ask him about them later. Let's go play football.

Brian: We always play football, let's take these cigarettes and sneak down to the creek.

Tim: Brian, you know how bad cigarettes are for you. They'll make it hard for us to play ball.

Brian: Oh, come on, man. How bad can one cigarette be?

Tim: Bad enough! One leads to two and two leads to three. Before you know it, you're addicted!

Brian: If my brother smokes, they can't be that bad.

Tim: Maybe you should talk to him about what we learned at school. If he's not going to stop, you should tell your mom. Smoking can really do damage to your health.

Brian: My brother would not be happy with me if I did that.

Tim: He'll thank you one day!

Brian: Yeah, I guess you're right. Let's just go play football like always.



Role Play- Scenario 2

Complete this scenario. When you act it out, make sure you think about your body language and the equation for successfully saying NO!

Narrator: *Two friends are walking home from school. They stop at a carry-out store to get a snack.*

Joe: Come on, Sam! Hurry up and get your snack so we can get to your house! I want to have time to play before dinner.

Sam: Hold on, Joe. Look over there by the door.

Narrator: *Sam points to two adults standing by the door of the carry-out talking.*

Joe: Yeah, so what? They're just talking. Come on, let's go.

Sam: No, wait. They are definitely old enough to buy cigarettes. Let's ask them to buy us some! My mom isn't home yet, so we can try smoking when we get to my house.

Joe: *Try to convince Sam to go home and not ask the adults to buy cigarettes for them.*

Sam: *Try to convince Joe to stay and ask the adults to buy cigarettes for them.*



Role Play- Scenario 3

Complete this scenario. When you act it out, make sure you think about your body language and the equation for successfully saying NO!

Narrator: *Two friends on a baseball team are sitting in the dugout during a practice. Chris spits out some chewing tobacco. Cory notices that Chris isn't spitting out sunflower seeds like everyone else.*

Cory: Hey man, that's not sunflower seeds!

Chris: Ha. Nope, it isn't. It's chewing tobacco, just like real baseball players use.

Cory: You shouldn't be doing that.

Chris: Why not? I know smoking cigarettes is bad for you, but chew is much safer. That's why all the baseball players use it. Here, try some and you'll see.

Cory: *Respond to Chris's offer of chewing tobacco.*

Chris: *Try to get Cory to try the chewing tobacco.*



Role Play- Scenario 4

Complete this scenario. When you act it out, make sure you think about your body language and the equation for successfully saying NO!

Narrator: *A younger brother, Taylor, comes home to find his older sister, Tammy smoking on the back porch.*

Taylor: Tammy! What do you think you are doing?

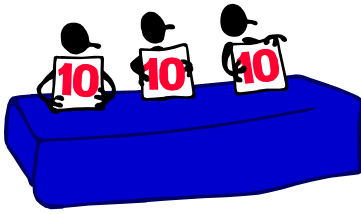
Tammy: Oh come on, Taylor. It's not a big deal. It's just a cigarette.

Taylor: It will be a big deal when mom and dad get home and I tell them!

Tammy: Oh, no, you won't tell them! Everyone at school smokes, Taylor. It really is not a big deal.

Taylor: *Try to convince Tammy not to smoke.*

Tammy: *Try to convince Taylor not to tell their parents and that smoking is not a big deal.*



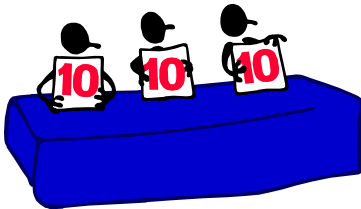
Role Play Feedback

What did you like about the group's ending?

Rate their body language (10 is best): 1 2 3 4 5 6 7 8 9 10

Rate how well their words matched their actions: 1 2 3 4 5 6 7 8 9 10

Did the group use facts and strong comments to defend their reasons for not using tobacco? Yes No



Role Play Feedback

What did you like about the group's ending?

Rate their body language (10 is best): 1 2 3 4 5 6 7 8 9 10

Rate how well their words matched their actions: 1 2 3 4 5 6 7 8 9 10

Did the group use facts and strong comments to defend their reasons for not using tobacco? Yes No

Learning Activity: Sign a Pledge

Students will sign a pledge that they will remain tobacco-free and use good communication skills to say no to peer pressure. They will attempt to communicate their concerns to other friends and family who use tobacco and/or attempt to use tobacco. Hang the students' pledges in the hallway or around the classroom where others can see them.



Tobacco-Free Pledge

✓ I will remain tobacco free. I will abstain from using:

Cigarettes
Cigars
Chewing Tobacco
Dip products

✓ I will use good communication skills to say no to people who ask me to use tobacco products.

✓ I will encourage others to not use tobacco products or to quit.

Name

Date

Assessment Evidence:

Completed letters to friend
Completed role play script
Completed pledge

Lesson 28: Healthy Alternatives to Smoking

Established Goals:

National Health Education Standards:

- 1.5.1 Describe the relationship between healthy behaviors and personal health
- 2.5.2 Identify the culture on health practices and behaviors
- 3.5.1 Identify characteristics of valid health information, products, and services
- 4.5.4 Demonstrate how to ask for assistance to enhance personal health
- 5.5.3 List healthy options to health-related issues or problems
- 5.5.4 Predict the potential outcomes of each option when making a health-related decision
- 5.5.5 Choose a healthy option when making a decision
- 5.5.6 Describe the outcomes of a health-related decision
- 7.5.3 Demonstrate a variety of behaviors to avoid or reduce health risks
- 8.5.1 Express opinions and give accurate information about health
- 8.5.2 Encourage others to make positive health choices

Ohio Benchmarks (3-4 Program):

English Language Arts: Writing Applications: D, Writing Conventions Standard ABCD, Research Standard: AD, Communications Standard: AEF

Science: Life Sciences B

Ohio Indicators (Grade 4):

English Language Arts: Writing Applications: 5, Writing Conventions: 1-13, Research: 1-3,6; Communications: 1,9

Understandings:

Students will understand...

- The value of meditative practices and how they can be productive alternatives to smoking.
- The breathing process and the function of the respiratory system.

Students will be able to...

- Conduct an interview to extract essential information.
- Evaluate the performance of another students' presentation.

Essential Questions:

- How does the respiratory system operate?
- What are healthy alternatives to smoking?

Learning Plan:

Background:

This is a brief explanation of each practice that you can share with students to prepare them for doing the interviews. Meditative exercises are highly effective in reducing stress and are associated with providing health benefits. Some examples of meditative exercises include Tai Chi, Yoga, and Qigong. Yoga is one of the most ancient cultural practices of India. The word *yoga* in Sanskrit means "to unite," and so *yoga* connotes a unitive discipline. In this sense, it is an exercise in moral and mental cultivation that generates good health (*arogya*), contributes to longevity (*chirayu*), and the total intrinsic discipline culminates into positive and perennial happiness and peace. Tai Chi, if looked at from a Western point of view, can best be described as a moving form of yoga and meditation combined.

Originally derived from martial arts, the slow, graceful movements also sometimes reflect the natural movements of animals and birds, designed to focus the mind and breathing through a complex series of executions. In Tai Chi, where the form is practiced in slow continuous fluid movement, muscles and joints are in motion. Breathing is regulated as an integral part of this exercise. The effect is a sedative upon the central nervous system which helps to stimulate improvements upon the body's other systems. It is calming and de-stressing, the movements themselves becoming physical poetry. When practiced properly, Chi energy is increased, and one often feels a 'tingling' of fingers and toes and a warming up of the body. The mind becomes clear and relaxed. The movements give a means for motor control, balance, etc. and can help posture and loosen tight muscles. Qigong or "Energy-Cultivation" is an aspect of Chinese medicine involving the coordination of different breathing patterns with various physical postures and motions of the body.

References: <http://hinduism.about.com/library/weekly/extra/bl-yoga-define.htm>
<http://www.soton.ac.uk/~maai/chi/taichi/whattai.htm>
<http://en.wikipedia.org/wiki/Qigong>

Discussion:

- Discuss the process of breathing or the respiratory system
 - Air is inhaled through the mouth and nose. Ask the students to take in a deep breath first through their mouths and then through their noses to demonstrate this action.
 - Once air is inhaled into the mouth and nose, it travels down an air tube called the trachea.
 - The trachea is connected to the lungs. Air is carried to the lungs from the trachea to the lungs through two branches called bronchi. These bronchi branch into smaller tubes called bronchioles. At the end of the bronchioles there are millions of smaller air sacs called alveoli.

- Alveoli or air sacs function to exchange oxygen and carbon dioxide within the body.
- The air sacs are connected to the bloodstream. The air sacs release the oxygen into the bloodstream. The air sacs transport the oxygen through the bloodstream. The carbon dioxide in the lungs travels back up the trachea and is exhaled with each breath.
- The diaphragm muscle beneath the lungs helps push air in and out of the body

Review the breathing process as previously outlined and have students recall the different steps.

Ask students about the affects of smoking on lungs. Explain that smoking can damage the air sacs in lungs making it harder to breathe. Breathing becomes difficult for smokers because the air sacs in the lungs are damaged and do not function properly. This means that smokers also have a much harder time playing sports, singing, dancing and doing other activities which require controlled breathing and endurance.

Explain that unfortunately some people smoke cigarettes as a way to relieve stress. However, deep breathing is a healthy alternative that helps to reduce stress and can function to improve the immune system. Yoga, Tai Chi, and Qigong are specific meditative practices that incorporate deep breathing into exercise routines. Tai Chi and Qigong has been known to improve health of cancer survivors and Yoga can serve as a stress – relieving technique.

To reinforce these concepts students will partake in a simplified progressive muscle relaxation and breathing routine, interview health professionals, and play an interactive game. The breathing activity encourages students to focus on their breathing and since stress is a common reason people cite for smoking, this deep-breathing routine is a useful technique to reduce feelings of stress. Students will then interview meditative exercise specialists (i.e., Yoga, Tai Chi, and Qigong) to discover the history of the practice, the best way to do the exercise, and how the exercises can improve health in general. The interactive game teaches students the importance of having strong and healthy lungs.

Learning Activity: Deep Breathing Routine

Note to teacher: This activity is designed to get students to focus on their breathing and also to learn deep-breathing as a stress-management technique. Some students with asthma may have a harder time taking deep breaths and this may be a trigger for their asthma. Monitor them closely, or have them do another activity.

Materials:

- CD of calming music and CD player
- Mats (if possible)

Directions:

1. Have the students lie on their backs on the floor or on mats several feet apart from each other. Turn on the calming music.
2. Ask students to do the following:
 - Close your eyes.
 - Take a deep breath in and slowly release it.
 - Take another deep breath and hold it for 3 seconds...1...2...3, and slowly release...1...2...3.
 - Take a deep breath in and hold it for 5 seconds...1...2...3...4...5, and slowly release...1...2...3...4...5.
 - Continue breathing deeply in this manner until the mind is cleared. Continue to breathe in until you feel the breath originating from the stomach.
 - Release the breath slowly and controlled.
 - Continue breathing and imagine that you are sitting underneath a tree on a sunny summer day. Can you feel the warmth of the sun and a slight breeze or birds singing? Do you feel calm and relaxed?
 - *Feel free to substitute any other location or have students imagine their own favorite calming spot. The important thing is that it is a place where they feel happy and relaxed, and that they can visualize a location that embodies serenity.*
 - Curl your toes up and hold them for 5 seconds...1...2...3...4...5 and relax...1...2...3...4...5.
 - Tense the muscles in your legs making them very stiff...1...2...3...4...5 and relax...1...2...3...4...5.
 - Remember to keep breathing deeply and slowly.
 - Place your hands next to your sides with your palms on the floor. Tense your arms and push your palms down onto the floor...1...2...3...4...5, and relax...1...2...3...4...5.
 - Tense the entire body. Make every muscle in your legs, arms, neck, hands, feet and torso tense and stiff. Hold it for 5 seconds...1...2...3...4...5, and relax...1...2...3...4...5.
 - Take a deep breath in and hold it for 5 seconds...1...2...3...4...5, and now slowly let it out...1...2...3...4...5.
 - Take another deep breath in and hold it for 3 seconds...1...2...3, and slowly release...1...2...3
 - Breathe in and slowly release
 - Now open your eyes, and slowly sit up.

Discussion

Discuss the following questions with students. Do you feel relaxed? Why or why not? Do you think you can perform breathing exercises on your own? When is the best time for you to do a deep-breathing routine? What body parts were used during the deep-breathing routine? Would it be harder for you to do a deep-breathing routine if you smoked? Why or why not?

Learning Activity: Health Alternatives to Smoking Interview

Materials:

- Telephone Books
- Writing Utensils
- Internet (optional)

Preparation:

Create a rubric for the students to use while evaluating their classmates' presentations.

Directions:

1. Using the background information, inform students about the different types of meditative practices.
2. Invite students to research contact information for health professionals in the community including Tai Chi, Qigong, and Yoga instructors using telephone books and the internet. Have students select a specialist to interview.
3. Have each student develop questions to ask the health professional. Questions should focus on the importance and purpose of the meditative practice. Additionally, students should understand the culture in which the practice originated and the benefits of the practice. Students should organize an outline of the questions that they would like to ask the instructor. If possible, have students peer-review the questions and if students are nervous they may choose to conduct a mock interview with a classmate in advance to familiarize themselves with the interviewing process.
4. Students should contact the selected health professional and conduct the interview. Optional: While conducting the interview students can ask the health professionals if they would be willing to teach a class for the students at the school.
5. Have students present the information to class. Students will evaluate each other presentations using the rubric.

Extension:

Schedule a field trip for the students to visit a Yoga, Qigong, or Tai Chi class.

Extension:

Since the children have become familiar with the interviewing process, students could interview a smoker and a non-smoker and compare the results.

Assessment Evidence:

Journal Entry:

Have students write a one page summary describing their experiences concerning the deep breathing routine, the interview process, and the interactive game. Have students highlight feelings and emotions felt during the deep breathing routine, the interview process and the game. Journal entries should include the date and name of the student

Interview Questionnaire**Presentation****Evaluation**

Additional Resources:

Extension Activity: Air Sac Game***IMPORTANT NOTES:***

- Since the lesson focuses on smoking cigarettes, be prepared for students to possibly pretend to smoke the straws.
- Make sure that students get their own straws and that they do not share or trade straws to prevent the spread of germs.
- Allow children time to catch their breath between rounds.
- If students have been diagnosed with asthma, it is strongly recommended for the participant to serve as the score keeper.

The purpose of this game is to provide students with a visual representation of how smoking tobacco products damage the air sacs within the lungs making it more difficult to breathe.

Materials:

- Cotton balls
- Straws
- Air Sac Tags
- Blood Stream labels
- Yarn or tape, for Air Sac Tags
- Tables or desks pushed together to make a cafeteria-sized table

Preparation:

Use cafeteria-style tables. However, if cafeteria-style tables are not available, arrange desks so that they resemble a cafeteria-style table. Divide the class in half and assign each group to a different table. Cut out the “**Air Sac Tags**.” You may either tape them to

students' shirts or use yarn to make necklaces. Lay the "**Bloodstream**" labels on the tables. For a class of 20 students, cut holes or slits in ten of the straws to represent the damaged air sacs of the smoking team.

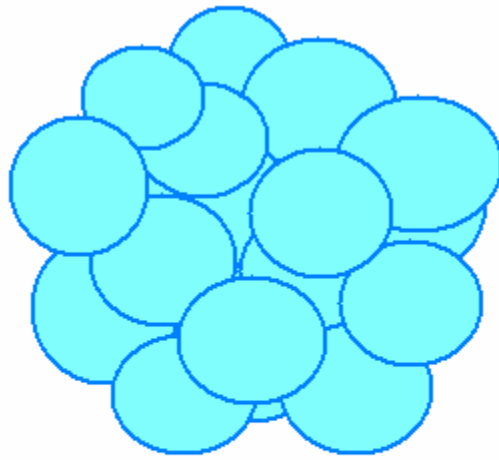
Directions:

1. Divide the class in half and designate students on each team as smokers or non-smokers – one team of each!
2. Explain to the students that the two teams represent the air sacs within the lungs of the person who either smokes or does not smoke. Give each student an **Air Sac Tag** (see below) to help them visualize that they are the air sacs within someone's lungs.
3. Line both teams up at the end of two tables (lunch room tables, library tables, desks, etc.) all facing the same way. Place the teams apart from one another so that they can distinguish the difference between the teams.
4. Each team is given 15 cotton balls and straws for each team member.
5. Using their straws, each team must blow all of their cotton balls across the table until they fall off the edge of the table. The cotton balls falling off of the table represent the air sacs ability to release the oxygen into the bloodstream.
6. The team that blows all of their cotton balls off the far edge of the table first wins the game.
7. If the smoking team still manages to win, mention that the students on the smoking team are more out of breath than the non-smoking team. This illustrates that they still had to work much harder to win.
8. Start the game over. This time make the other team the smoking team so the students have a chance to experience the game from both perspectives.

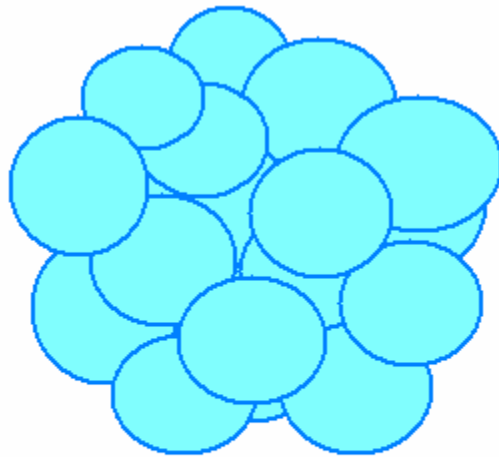
Discussion:

Discuss the following questions with the students. Which team had the harder time blowing the cotton balls off of the table? Why was it harder for the smoking team to blow the cotton balls off of the table? What can you do to prevent yourself from having trouble breathing?

Air Sac Tags



AIR SAC



AIR SAC

Bloodstream

Bloodstream

Lesson 29: Secondhand Smoke

Established Goals:

National Health Education Standards:

- 1.5.3** Describe ways in which a safe and healthy school and community environment can promote personal health
- 2.5.2** Describe the influence of culture on health practices and behaviors
- 4.5.1** Demonstrate effective verbal non-verbal communication skills to enhance health
- 4.5.4** Demonstrate how to ask for assistance to enhance personal health
- 5.5.3** List healthy options to health-related issues or problems
- 7.5.2** Demonstrate a variety of healthy practices and behaviors to maintain or improve personal health
- 8.5.2** Encourage others to make positive health choices

Ohio Benchmarks (3-4 Program):

Social Studies: Government: AB, Citizenship Rights and Responsibilities A, Social Studies Skills and Methods: D

English Language Arts: Writing Applications: CD, Writing Conventions: ABCD, Research: ABCD, Communications: AEFG

Ohio Indicators

Social Studies (4th Grade): Government: 1 (a-c) & 2, Citizenship Rights and Responsibilities: 1 (a-d), Social Studies Skills and Methods: 10

English Language Arts (4th Grade): Reading Process: 1,3-5, Writing Applications: 3-5, Research: 1-3, Communications: 3-8

Understandings:

Students will understand...

- How secondhand smoke can be avoided
- The importance of voicing your opinion to legislators
- How to communicate with lawmakers and/or representatives

Students will be able to...

- Name the harmful effects of secondhand smoke
- Name the three branches of government and how they function
- Name four ways they can participate in promoting change for the common good.

Essential Questions:

- How is your local government structured?
- How can students make a change at the school level?
- How will students implement change at home (i.e. a smoke-free environment) if necessary?

Learning Plan:

Background:

The effect of secondhand smoke has become a hot topic in cities and states across the country. In the 2006 election, citizens in Ohio voted to become smoke-free. Smoking is officially banned in all public places and work places, meaning any location that has an employee or invites members of the public to enter. This was an act of a group called Smoke Free Ohio. Smoke Free Ohio had numerous partners throughout the state of Ohio, both non-profits and businesses. These groups came together to promote action that will benefit the health of all people in Ohio. Secondhand smoke is extremely dangerous. Students should understand that the decision to remain smoke-free should include avoiding exposure to secondhand smoke. Furthermore, students should understand that they, as citizens, can have an active part in making and changing laws. For a summary or full text of the law, please visit www.smokefreeohio.org.

Discussion: Part I: How does government function in Ohio?

Ohio's State Government models the government of the United States. In Ohio, there are three Branches:

Legislative: *Creates or makes the laws.* In Ohio, this includes the state Senate and House of Representatives, collectively called the Ohio General Assembly. It also includes legislative agencies, or numerous committees and commissions to oversee compliance and ethics.

Executive: *Enforces the laws.* In Ohio, this includes the Governor, Lieutenant Governor, and the Governor's cabinet. Other positions include: Secretary of State, Auditor of State, Attorney General, Treasury of State and the State Board of Education.

Judicial: *Interprets the laws.* The judicial branch includes: the Ohio Supreme Court, Court of Claims and Court of Judiciary bodies. These judiciary bodies include: county common pleas courts, municipal courts and courts of appeal.

All positions in Ohio are elected by the citizens of Ohio, with the exception of the Governor's Cabinet. People who serve in the Governor's Cabinet are appointed by the governor and usually run a variety of state agencies. These people serve at the pleasure of the governor and can be asked to leave at any time.

How is the system listed above similar to the system used at the federal level?

- Our Governor represents which figure in Federal Government? (*The President*)
- Our Lieutenant Governor represents which figure in the Federal Government? (*The Vice President*)
- There is the US Supreme Court and the Ohio Supreme Court. How are they different? (*The Ohio Supreme Court Justices are elected and the US Supreme Court Justices are appointed.*)

•The Ohio General Assembly is similar to what federal body? (*Congress*)

****City or local governments can vary significantly. Find the structure for your city, village or township. Present it to the class. Compare how it is similar to State Government. In cities, the executive branch is usually represented by a mayor. The legislative branch is usually represented by city council. The judicial branch is usually made up of judges in municipal, common pleas and/or county courts. We also have local police who help enforce laws.****

Discussion: Part II: How can citizens participate in government and the legislative process?

It's the voters and citizens that drive the legislative process in Ohio. If you look at the chart on how a bill becomes a law in Ohio, the very first step claims that the legislator must become aware of the need for legislation. Students should understand that they can be the ones to inform their leaders of a problem or situation that may call for legislation. In order to make leaders aware of an issue, they can do the following:

- Write a letter to their City Council, School Board, State Representative, Senator or House Representative.
- Attend a City Council meeting and present your case
- Attend a School Board meeting and present your case
- Call an elected leader

Our elected officials are supposed to be the voice of the people. We vote for them because we think they will represent our interests. So, it is our responsibility to ask them to act on situations that we care about.

Another way to participate is to get an issue on the ballot. If you have an interest in something in particular, such as a health issue, chances are there are many other people who feel the same way. Often, people come together in what is called an interest group. They want to advocate an important issue, but they can not do it alone. This group of people will gather signatures on a form called a petition. The people who sign the petition must be registered voters. If enough signatures are collected and the signatures are determined to be those of registered voters, then the issue brought forth will appear on the ballot. If voters then vote to pass the issue, it becomes a law.

What is a **ballot**? A ballot is the form in which a vote is recorded.

What is a **petition**? A petition is a formal request that is signed by people who agree with it and is given to a person of authority.

The third way to participate in government and the legislative process is to run for an elected office. This will mean that you will always be able to contribute to the law-making process. You will vote to pass laws that you may have helped create.

Most importantly, adult citizens can vote! Voting is a right that people, including women and minorities, fought very hard to have. Citizens are afforded this right when they reach

eighteen years of age. At this point, the government feels that you are old enough to make an informed decision. As an adult, it's your responsibility to be an active part of elections.

Discussion: Part III: Secondhand Smoke

See what students know...

What is **secondhand smoke**? *Secondhand smoke is a combination of the smoke that comes from the end of the cigarette that is burning and the smoke that is breathed out by the smoker(s).*

Who is affected by secondhand smoke? *Everyone!* It does not matter if you are young or old, healthy or unhealthy, secondhand smoke can cause severe health problems.

Why is secondhand smoke dangerous? *Secondhand smoke contains poisons. (In other words, it's toxic)* The same harmful chemicals that are found in cigarettes can be found in secondhand smoke. Breathing in this smoke can damage your health and also lead to certain cancers.

More specifically, it contains:

- Cancer causing chemicals:** Formaldehyde, Benzene, Polonium-210, Vinyl Chloride
- Poison Gases:** Carbon Monoxide, Hydrogen Cyanide, Butane, Ammonia, Toluene
- Toxic Metals:** Arsenic, Lead, Cadmium, Chromium

Other health effects besides cancer that secondhand smoke can cause:

- Heart Disease
- Heart Attack
- Itchy, watery eyes
- Onset of Asthma attacks (for those with Asthma)
- Irritated skin, nose and throat

What should people do to avoid secondhand smoke?

1. Avoid being around smokers. Do not allow smoking in your home, car or any other enclosed area.
2. Do not hang around people who smoke.
3. Do not go to restaurants or other public places where smoking is allowed.

What is being done?

- Smoking is banned in most public places.
- Ohio is one of 15 states to enact a full, state-wide smoking ban. This issue was voted on in the November 2006 election. The law went into effect December 7, 2006. This took the place of many city-wide smoking bans. (State law supersedes city law.) This means that any place with an employee is not allowed to have smokers indoors, with very few exceptions to the rule.

Learning Activity: Mock City Council Meeting and Presentation

Materials:

- Sources about secondhand smoke
- Index cards (to use as notes for the presentation)

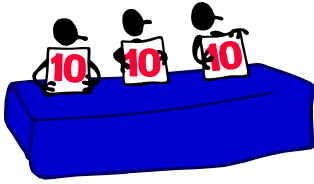
Students will prepare a presentation for the members of City Council. They will research secondhand smoke in more detail, and try to convince the members of City Council that they should enact a smoking ban in the city. (This is regardless of the fact that a statewide ban is already in effect.)

Directions:

1. Each student will prepare a one-minute speech in support of the smoking ban, in hopes of improving the community's health.
2. Students should use the information that you collected and any other sources that they find. Encourage students to interview a parent or person that works in a smoke-filled environment. Find out why people do not want to work in a smoky environment.
3. Depending on how much time you have for this activity, students may work on their speeches in class or at home.
4. For the presentation, divide the class into community members and council members. Find out how many people are on city council for your school's town. Each student should have a chance to be a council person and a community advocate.
5. The students acting as council members will use the peer judging sheet to give the presenter a score on his or her presentation.
6. At the end of each "council session" the council members should vote on whether or not they want to enact a smoking ban based on the "community advocates" presentations.

Debrief:

- How will people benefit from a smoking ban?
- How does presenting at a city council meeting impact the way of life for the people in the community?
- What facts about secondhand smoke were most convincing when you were acting as a council member?



Peer Judge Form Mock City Council Meeting

Your Name _____

Presenter's Name _____

Did the presenter discuss the harmful effects of secondhand smoke? YES NO

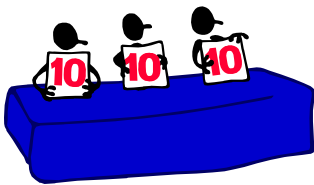
Did the presenter speak for no more than one minute? YES NO

Was the presenter confident in what s/he was saying? YES NO

Did the presenter do anything extra to convince you to vote for a smoking ban? YES NO

If YES, what? _____

After hearing the presenter's speech, would you vote for a smoking ban? YES NO



Peer Judge Form Mock City Council Meeting

Your Name _____

Presenter's Name _____

Did the presenter discuss the harmful effects of secondhand smoke? YES NO

Did the presenter speak for no more than one minute? YES NO

Was the presenter confident in what s/he was saying? YES NO

Did the presenter do anything extra to convince you to vote for a smoking ban? YES NO

If YES, what? _____

After hearing the presenter's speech, would you vote for a smoking ban? YES NO

Learning Activity: Writing a letter to an elected official

Directions:

1. Students will choose an elected official to write. This may be a Senator, State Representative, a member of the Ohio General Assembly, the Governor or Lieutenant Governor, a city council member, school board member or another person in an authoritative position who was elected.
2. Students should choose one health issue in their state, community or school that they want to bring to the attention of the elected official.
3. Students should find out the name and address of the elected official they want to write to. You can provide this for the students if they do not have access to resources.
4. Students should write a letter, in business letter format, to the selected official.
5. Sending the letter is optional. See the sample letter enclosed in this lesson.

Sample letter to an elected official

422 Spring Mill Lane
Cincinnati, Ohio 45328

January 30, 2007

Governor Ted Strickland
30th Floor
77 South High Street
Columbus, Ohio 43215-6117

Dear Governor Strickland:

I am writing to you because I am worried that my friends and I are not getting enough physical activity. We used to have recess twice a day, but not anymore. We only get to go outside for ten minutes.

Getting enough physical activity leads to good cardiovascular health. It also helps us do better in school. Our bodies feel better when we have had time to exercise.

My mom said that the state wants us to spend more time on our subjects in school and less time exercising. I am hoping that you will help. Please change it so that we can spend more time being healthy.

Sincerely,

Jason Miller

Learning Activity: Mock Elections

Directions:

1. Discuss the importance of having trustworthy, honest and ethical officials.
2. Divide the class into three or four groups, whatever is best for your class size.
3. One person from each group will be the candidate running for an elected position. The “candidate” for each group should be determined by a vote within each of the respective groups (i.e., Group 3 should vote on its “candidate”, Group 2 should vote on its “candidate,” etc.).
4. The rest of the team members will be the campaign committee. Within the groups, students should vote on who will be the campaign manager.
5. Each member of the group should be given a task. Aside from the candidate and the campaign manager, some people can work on promotions (posters, etc.) and anything else that the group decides.
6. As a group, students should decide on candidate’s “platform.” The candidate will take a stance on as many issues as they choose, but they must include nutrition, physical activity and tobacco use prevention (or exposure to smoke).
7. The group will use the platform as a basis for their campaign. Students will need to come up with their position on these given issues and prepare themselves on why they feel the way they do.
8. After students have had time to “campaign” (this can be as long as you would like- one day, one week, etc.), a debate should be held. After hearing the platforms for the various candidates, come up with questions for the debate.
9. When the debate is finished, have the students vote for their favorite candidate. Remind students that they should take into consideration everything from the campaign, not just the performance in the debate.
10. Have the students fill out the election follow-up form that is included in this lesson.

Assessment Evidence:

Journal Entry: Why I would make a good elected official.

Discuss what people look for in a candidate. Why are these characteristics important? If you were running for an elected position, why do think people would vote for you? What would your personal platform be?

Completed letter to an elected official

Group reviews of their overall campaign

Completed campaign follow-up worksheet

Peer judging sheet for the presentations at the mock city council meeting as well as your own review of each student’s performance

Lesson 30: Review of lessons 26-29 (Tobacco)

Established Goals:	
<p><u>National Health Education Standards:</u></p> <p>3.5.1. Identify characteristics of valid health information, products and services</p> <p>5.5.3. List healthy options to health-related issues or problems</p> <p>5.5.6. Describe the outcomes of a health-related decision</p> <p>8.5.1. Express opinions and give accurate information about health issues</p> <p>8.5.2. Encourage others to make positive health choices</p> <p><u>Ohio Benchmarks (3-4 Program):</u></p> <p><i>English Language Arts:</i> Writing Process Standard: BI, Writing Applications Standard: D, Writing Conventions Standard: ABCD, Communications Standard: CFG</p> <p><i>Technology:</i> Technology for Productivity Applications: BC</p> <p><u>Ohio Indicators (Grade 4):</u></p> <p><i>English Language Arts:</i> Writing Process: 2,3,9,14,16, Writing Applications: 4, Writing Conventions: 1-13, Communications: 8a-f</p> <p><i>Technology:</i> Technology for Productivity Applications: 2</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The negative consequences of tobacco use. •How to develop materials that can impact the community. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> •Design health education materials to combat tobacco use. •Promote healthy behaviors by presenting pamphlets, posters, or songs.
Lessons Reviewed:	
<ul style="list-style-type: none"> • Health Risks and Costs of Tobacco Use (26) •Talking to Peers about Tobacco (27) •Healthy Alternatives to Smoking (28) •Secondhand Smoke (29) 	

Learning Plan:

Review: In the tobacco lessons, students learned about tobacco, the short and long-term negative consequences associated with smoking, how the community is affected by tobacco, and how the government and the community participates in smoking legislation. In this review lesson, students will design a pamphlet or a poster to encourage tobacco use prevention awareness.

Learning Activity: Art or Technology Project

Materials:

- Internet
- Art supplies including markers, paint, paintbrushes
- Writing materials
- Magazines
- Scissors
- Paper

Preparation:

Discuss and summarize the main points outlined in all of the tobacco lessons. Lay out materials for students to use.

Note to Teacher: Students may work in groups to complete this assignment or the assignment can be used for homework.

Directions:

1. Have students identify a topic that they would like to display in the pamphlet or poster. For example, students can take the strategies that they learned in the Talking to Peers about Tobacco or Healthy Alternatives to Smoking lesson and incorporate that information into a pamphlet. They may also choose to draw a poster depicting the health risks and costs associated with tobacco use. Encourage students to be creative. The pamphlet can be designed in any manner and the poster can include cartoon sketches.
2. When students have identified their targeted approach for disseminating information, ask the students to write an outline about the project. The outline should include the theme of the poster or pamphlet, the target audience, and how the students plan to make an impact with the health education material.
3. Next, have students create the health promotional materials. Students can use magazine cut-outs, markers, writing utensils, or the internet to create posters or pamphlets.
4. Have students present the final product to the class and either distribute the materials to other classes or present to other classes. Posters can be displayed on bulletin boards, in the cafeteria, or in any location that maximizes viewing.

Optional: In addition to creating pamphlets or posters, students can create songs that compliment the promotional materials.

Discussion:

Discuss the following questions with the students. Why is it important to promote healthy behaviors in the community? What did you value about the process of creating health education materials?

Assessment Evidence:

**Health Promotional Materials
Presentation**

Lesson 31: Conclusion

Established Goals:	
<p><u>National Health Education Standards:</u> 1.5.1. Describe the relationship between healthy behaviors and personal health 8.5.1. Express opinions and give accurate information about health issues 8.5.2. Encourage others to make positive health choices</p> <p><u>Ohio Benchmarks (3-4 Program):</u> English Language Arts: Writing Process Standard: ABCDEFGI Writing Conventions Standard ABCD Writing Applications Standard: ABCD Communication Standard: CE</p> <p><u>Ohio Indicators (Grade 4):</u> English Language Arts: Writing Process: 2,3,5-14,16 Writing Applications: 1-5 Writing Conventions: 1-13 Conventions: 9</p>	
Understandings:	
<p><i>Students will understand...</i></p> <ul style="list-style-type: none"> •The components of a healthy lifestyle which include general health skills, nutrition, physical activity, and tobacco use prevention awareness. • The importance of self and peer revision. 	<p><i>Students will be able to...</i></p> <ul style="list-style-type: none"> • Identify, edit, and revise appropriate materials to include in a comprehensive writing portfolio. •Present the writing portfolio.
Lessons Reviewed:	
<ul style="list-style-type: none"> • Community Physical Activity Options (2) • Advertising Food and Drink (5) •Growing Essentials (11) • The Importance of Breakfast (15) •Food is our Energy Source and More (17) • To Drink or Not to Drink (19) • The Importance of Water (18) •Snack Math (16) • Active Every Day (22) •Cardiovascular Health (23) • Talking to Peers about Tobacco (27) •Secondhand Smoke (29) 	

Learning Plan:

Background:

Students will be asked to create a Writing Portfolio that must include at least four writing entries. The entries may come from the previous lessons and can include lesson reviews and journal assignments. The writing portfolio is divided into four different categories labeled Reflective Writing, Personal Expressive Writing, Literary Writing and Trans-active Writing. Each student is responsible for selecting at least one writing sample for each category. Some examples include:

Type of Writing	Lessons	Examples
Reflective Writing	To Drink or Not to Drink, The Importance of Water, Stretching, Healthy Alternatives to Smoking	Culminating personal experience
Personal Expressive Writing	Active Every Day, Making Healthy Choices in Restaurants	Memoir, personal narrative
Literary Writing	Talking to Peers about Tobacco, Snack Math, Advertising Food and Drink	Short story, poem, script
Trans-active Writing	Advertising Food and Drink, Cardiovascular Health, Community Physical Activity Options, Breakfast, Secondhand Smoke, Talking to Peers about Tobacco, Food is our Energy Source and More	Business letter, review, written speech, proposal, fitness program, handbook, guide, instructions, manual, pamphlet, consumer information, and memo

Note to Teacher: Students may have difficulty deciding which writing sample they would like to include in their portfolio. If this occurs, inform the student that s/he may use more than one writing sample, but they must include one writing example from each category.

Learning Activity: Writing Portfolio

Materials:

- Manila Folder
- Writing Materials

Preparation:

Students will design a writing portfolio to include writing samples from the learning activities, review lessons, and journal assignments. Inform the students that the writing portfolio will contain a table of contents, and a reflective, personal expressive, literary, and trans-active writing sample. Explain to the student the meaning of each type of writing sample.

- Reflective Writing discusses the growth of a student as it relates to past experiences and lessons learned. It encompasses three main forms of reflection; reaction, relevance, and responsibility.

Examples of Reflection Questions

Reaction	How has what you've learned made you feel? What are the emotions involved in the learning process?
Relevance	How are the lessons that you've learned meaningful or significant? Do you define a "healthy lifestyle" differently now? How has your point of view changed concerning nutrition, physical activity, and tobacco use? How will you use the knowledge that you've learned in your everyday life? How have your knowledge, beliefs, and behaviors changed and how will you convey this change personally? How will you impact the community with the new knowledge you've learned?
Responsibility	

- Personal Expressive Writing focuses on a personal narrative that is realistic or imaginative. It usually centers on a specific time or specific event in a person's life.
- Literary Writing includes short stories, poems, and script.
- Trans-active Writing involves persuading or convincing an audience in a real world situation.

Directions:

1. Ask students to select writing samples that they would like to include in their writing portfolio. Students should only select their very best writing samples to include in their writing portfolio.
2. Have students revise and self-edit the selected writing pieces. Then, the writing samples should be peer-reviewed. Provide dictionaries and thesauruses for students to use in the editing and revision process.

3. After students have selected and edited their preferred writing samples, ask each student to create a table of contents that identifies the title of the writing piece and the type of writing sample.
4. Have the students insert all of the materials into the manila folder and have each student label the manila folder with their name, date, and grade.
5. After the students have completed the exercise, have each student discuss the contents of their portfolio.
 - Why did you choose the four samples?
 - What are four things that you have learned from reviewing the lessons?
 - What is the most important thing that you have learned from the Road of Life lessons?
 - How have you changed your habits or behaviors since beginning the lessons?
 - How will you encourage others to adopt a healthier lifestyle?
6. Have the students design the cover of the manila folder. The design should encompass the purpose of the portfolio. In other words, the portfolio cover design should show the topics covered in the writings (nutrition, physical activity, tobacco prevention, general health) and how what they've learned will affect their lives.

Suggested Use

Suggested Use for the Road of Life Curriculum

There are 31 lessons in the Road of Life curriculum. The lessons meet benchmarks for the 3rd-4th grade program and the 3rd-5th program, depending on the subject. Each lesson predominantly meets indicators for the 4th grade; however the lessons can be easily adapted to meet 3rd and 5th grade indicators.

The conclusion lesson is a culminating project for the students. It consists of a writing portfolio that the students will create based on the various writing assignments give throughout the curriculum. If the curriculum is used in more than one grade level, we recommend that the teachers collaborate to keep the students' works on file for this project. It would be most appropriate to do all review lessons in the highest grade that the curriculum is taught.

If this curriculum is being used in the 3rd and 4th grades, we recommend that you divide the curriculum as follows:

3rd Grade

General Health: Introduction to Health
General Health: Healthy Community
General Health: Introduction to Media Influence
General Health: Personal Goal Setting
General Health: Time Management
Nutrition: Food Groups and the Food Guide Pyramid
Nutrition: 5 to 9 a Day
Nutrition: Reading Nutrition Labels
Nutrition: The Importance of Breakfast
Nutrition: Snack Math
Physical Activity: Stretching
Physical Activity: Active Every Day
Tobacco: Healthy Alternatives to Smoking

4th Grade

General Health: Community Physical Activity Options
General Health: Advertising Food and Drink
General Health: Personal Image
Nutrition: Growing Essentials
Nutrition: The Importance of Water
Nutrition: Fruits and Vegetables Inside and Out
Nutrition: Food is our Energy Source and More
Nutrition: To Drink or Not to Drink
Nutrition: Making Healthy Choices in Restaurants
Physical Activity: Cardiovascular Health
Tobacco: Health Risks and Cost of Tobacco and Tobacco Use
Tobacco: Secondhand Smoke
Tobacco: Talking to Peers about Tobacco

Suggested Use for the Road of Life Curriculum

There are 31 lessons in the Road of Life curriculum. The lessons meet benchmarks for the 3rd -4th grade program and the 3rd -5th program, depending on the subject. Each lesson predominantly meets indicators for the 4th grade; however the lessons can be easily adapted to meet 3rd and 5th grade indicators.

The conclusion lesson is a culminating project for the students. It consists of a writing portfolio that the students will create based on the various writing assignments give throughout the curriculum. If the curriculum is used in more than one grade level, we recommend that the teachers collaborate to keep the students' works on file for this project. It would be most appropriate to do all review lessons in the highest grade that the curriculum is taught.

If this curriculum is being used in the 4th and 5th grades, we recommend that you divide the curriculum as follows:

4th Grade

General Health: Introduction to Health
General Health: Healthy Community
General Health: Introduction to Media Influence
General Health: Personal Goal Setting
General Health: Time Management
Nutrition: Food Groups and the Food Guide Pyramid
Nutrition: 5 to 9 a Day
Nutrition: Reading Nutrition Labels
Nutrition: The Importance of Breakfast
Nutrition: Snack Math
Nutrition: Food is our Energy Source and More
Physical Activity: Stretching
Physical Activity: Active Every Day
Tobacco: Healthy Alternatives to Smoking
Tobacco: Secondhand Smoke

5th Grade

General Health: Community Physical Activity Options
General Health: Advertising Food and Drink
General Health: Personal Image
Nutrition: Growing Essentials
Nutrition: The Importance of Water
Nutrition: Fruits and Vegetables Inside and Out
Nutrition: To Drink or Not to Drink
Nutrition: Making Healthy Choices in Restaurants
Physical Activity: Cardiovascular Health
Tobacco: Health Risks and Cost of Tobacco and Tobacco Use
Tobacco: Talking to Peers about Tobacco

Suggested Use for the Road of Life Curriculum

There are 31 lessons in the Road of Life curriculum. The lessons meet benchmarks for the 3rd-4th grade program and the 3rd-5th program, depending on the subject. Each lesson predominantly meets indicators for the 4th grade; however the lessons can be easily adapted to meet 3rd and 5th grade indicators.

The conclusion lesson is a culminating project for the students. It consists of a writing portfolio that the students will create based on the various writing assignments give throughout the curriculum. If the curriculum is used in more than one grade level, we recommend that the teachers collaborate to keep the students' works on file for this project. It would be most appropriate to do all review lessons in the highest grade that the curriculum is taught.

If this curriculum is being used in the 3rd, 4th and 5th grades, we recommend that you divide the curriculum as follows:

3rd Grade

General Health: Introduction to Health
General Health: Healthy Community
General Health: Introduction to Media Influence
General Health: Personal Goal Setting
General Health: Time Management
Nutrition: Food Groups and the Food Guide Pyramid
Nutrition: 5 to 9 a Day
Nutrition: Snack Math
Physical Activity: Active Every Day

4th Grade

General Health: Community Physical Activity Options
General Health: Advertising Food and Drink
General Health: Personal Image
Nutrition: Reading Nutrition Labels
Nutrition: Fruits and Vegetables Inside and Out
Nutrition: The Importance of Breakfast
Nutrition: Food is our Energy Source and More
Physical Activity: Stretching
Physical Activity: Cardiovascular Health
Tobacco: Secondhand Smoke
Tobacco: Talking to Peers about Tobacco

5th Grade

Nutrition: Growing Essentials
Nutrition: The Importance of Water
Nutrition: To Drink or Not to Drink
Nutrition: Making Healthy Choices in Restaurants
Tobacco: Healthy Alternatives to Smoking
Tobacco: Health Risks and Cost of Tobacco and Tobacco Use

Additional Resources

Additional Resources for Students and Educators

Buller, Laura. Food. New York: DK Publishing, 2005.

D'Amico, Joan and Karen Eich Drummond. The Healthy Body Cookbook. New York: John Wiley & Sons, Inc., 1999.

D'Amico, Joan and Karen Eich Drummond. The Science Chef: 100 Fun Food Experiments and Recipes for Kids. New York: John Wiley & Sons, Inc., 1995.

Dunn-Georgiou, Elisha. Everything you Need to Know About Organic Food. New York: Rosen Publishing Group, 2002.

Jukes, Mavis and Lilian Cheung. Be Healthy! It's a Girl Thing: Food, Fitness and Feeling Great. New York: Random House, 2003.

King, Hazel. Carbohydrates for a Healthy Body. Chicago: Heinemann Library, 2003.

King, Hazel. Milk and Yogurt. Des Plaines, Illinois: Heinemann Library, 1998.

Knapp, Brian. Food. Danbury, CT: Atlantic Europe Publishing Company, Ltd., 1991.

Landau, Elaine. A Healthy Diet. New York Franklin Watts, 2003.

Levchuck, Leslie. Fuel Up! A Girl's Guide to Eating Well. New York: Rosen Publishing Group, 1999.

Nottridge, Rhoda. Vitamins. Minneapolis: CarolRhoda Books, Inc., 1992.

Patent, Dorothy Hinshaw. Nutrition: What's in the Food we Eat. New York: Holiday House, 1992.

Patten, Barbara. The Basic Five Food Groups. Vero Beach, Florida: The Rourke Corporation, 1996.

Patten, Barbara. Nutrients: Superstars of Good Health. Vero Beach, Florida: The Rourke Corporation, 1996.

Powell, Jillian. Fats for a Healthy Diet. Chicago: The Heinemann Library, 2003.

Powell, Jillian. Food and Your Health. Austin, Texas: The Steck-Vaugh Company, 1998.

Royston, Angela. Proteins for a Health Body. Chicago: Heinemann Library, 2003.

Glossary

Glossary

Term(s)	Definition	Lesson
Physical Health*	The absence of disease and disability; functioning adequately from the perspective of physical and physiological abilities; the biological integrity of the individual.	Introduction to Health
Mental Health*	May include emotional health; may make explicit reference to intellectual capabilities; the subjective sense of well-being.	Introduction to Health
Social Health*	The ability to interact effectively with other people and the social environment; satisfying interpersonal relationships; role fulfillment.	Introduction to Health
Health	When a person is in a state of complete physical (bodily), mental (the mind and feelings) and social (interactions with other people) well-being. Health is not simply the absence of illness or disease.	Introduction to Health
Community	A group of people who reside in the same locality and share government.	Community P.A. Options & Healthy Community
Media	Any device that is intended to communicate a message to an audience.	Introduction to Media Influence
Device	A mechanism or method used to accomplish something.	Introduction to Media Influence
Communicate	To express, deliver.	Introduction to Media Influence
Audience	Group of people or a person to which your message is directed.	Introduction to Media Influence
Entertainment	Just for fun.	Introduction to Media Influence
Educational	To teach something or inform you of something.	Introduction to Media Influence
Advertisement	An attempt to get you to buy or do something. This is the most persuasive type of media.	Introduction to Media Influence & Advertising Food & Drink
Persuade	To convince someone of something you want them to believe or to do.	Introduction to Media Influence & Advertising Food & Drink

Term(s)	Definition	Lesson
Spokesperson	A real person, a celebrity, an actor or a cartoon character that appears in ads. The spokesperson says good things about the product or is shown using the product.	Advertising Food & Drink
Slogan	A sentence or phrase that is made just for the commercial. Slogans can be funny or serious.	Advertising Food & Drink
Fact	Information based on evidence or proof.	Advertising Food & Drink
Opinion	A personal attitude or belief that can not be proven.	Advertising Food & Drink
Goal	Something you make effort to achieve.	Personal Goal Setting
Motivation	What helps you work to achieve your goal.	Personal Goal Setting
Attribute	A quality, trait or characteristic of something or someone.	Personal Image
Screen Time	Time spent playing video games, watching TV and using the internet for non-school purposes. Screen time should be limited.	Time Management
Active Time	Time spent playing (including recess and gym class), exercising, walking and doing household chores. High-energy activities fit into this category. Aim for at least 30-60 minutes a day.	Time Management
School Time	Time spent in classes or doing homework.	Time Management
Down Time	Time spent reading, relaxing, sleeping and doing low-energy activities. According to the National Sleep Foundation, children ages 5-12 usually need 10-11 of sleep per night.	Time Management
Grains	A small, hard seed of a food plant, especially a cereal plant such as wheat or rye.	Food Groups & The Food Guide Pyramid
Vegetable	A plant whose fruit, seeds, roots, tubers, bulbs, stems, leaves or flower parts are used for food.	Food Groups & The Food Guide Pyramid
Fruit	The edible part of a plant developed from a flower.	Food Groups & The Food Guide Pyramid
Milk	A white liquid secreted by the mammary glands of female mammals and serving to nourish their young.	Food Groups & The Food Guide Pyramid
Meat	The flesh of animals used for food	Food Groups & The Food Guide Pyramid
Bean	The edible seed or pod of various plants of the legume family.	Food Groups & The Food Guide Pyramid

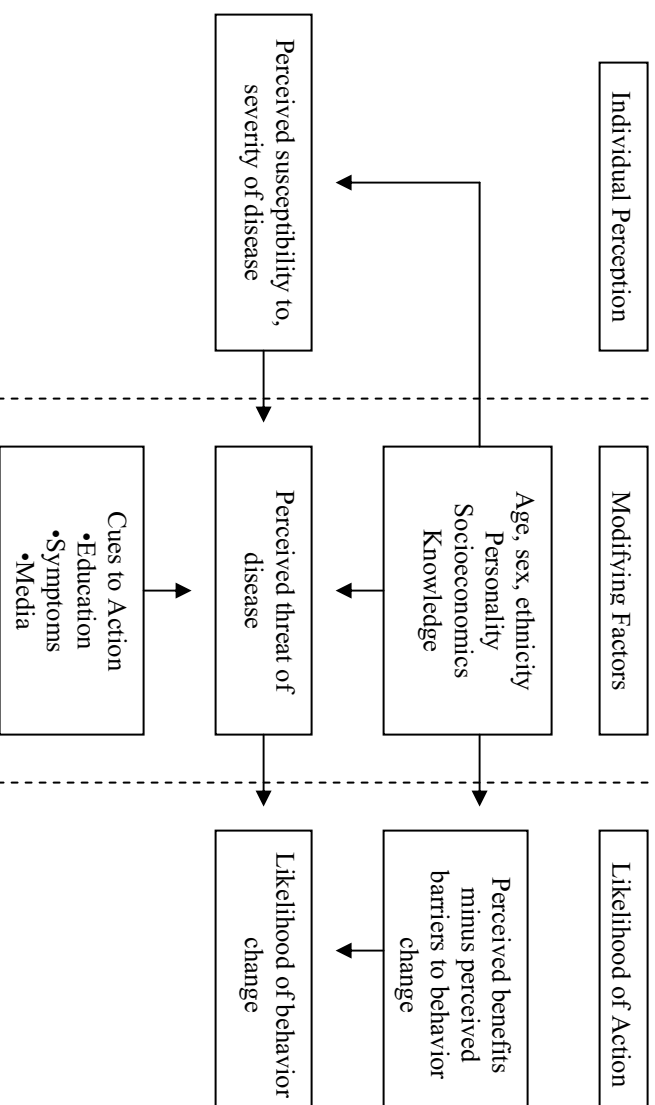
Term(s)	Definition	Lesson
Nutrient	Remind students that a nutrient is a part of food that gives the body energy, keeps it healthy and helps it perform important functions.	Reading Nutrition Labels
Serving Size	The serving size is listed on the nutrition label and it is how much of that food you should consume at one time.	Reading Nutrition Labels
Nutrition Label	The nutrition label tells us which nutrients there are in a particular food and how many nutrients are in it. The food label also tells us how much of that food or drink is in the package.	Reading Nutrition Labels
Estimate	An approximate judgment of (in this case) a serving size.	5 to 9 a Day
Homonym	A word with more than one definition.	Breakfast
Energy	The power or ability to be active.	Breakfast
Fast	To abstain from food; to not eat food for a certain amount of time.	Breakfast
Food	A substance that is put into our bodies to sustain life, provide energy and promote growth.	Food is our Energy Source and More
Agriculture	Cultivating land and raising livestock; farming.	Food is our Energy Source and More
Vitamin C	An important nutrient found in fruit and vegetables which helps to improve your immune system.	To Drink or Not to Drink
Water	A chemical substance that is essential to all known forms of life	To Drink or Not to Drink
100% Fruit Juice	Liquid or moisture from real fruit.	To Drink or Not to Drink
Low Energy Activity	An activity which does not require your body to make a lot of movements, and does not make your heart beat.	Active Every Day
High Energy Activity	An activity which requires your body to make a lot of movements, and which makes your heart beat faster.	Active Every Day
Stress	An overwhelming feeling of sadness or anxiousness.	Active Every Day
Pie Chart	A type of chart which shows what amount of a whole is divided into different areas.	Active Every Day

Term(s)	Definition	Lesson
Pulse	The number of time a heart beats in one minute	Cardiovascular Health
Target Heart Rate	A desired range of heart rate reached during exercise which enables one's heart and lungs to receive the most benefit from a workout.	Cardiovascular Health
Fitness Program	A plan that indicates the time and sequence of an activity.	Cardiovascular Health
Tobacco	A type of plant whose leaves are smoked in cigarettes or cigars, or are chewed as chewing tobacco.	Health Risks and Costs of Tobacco Use
Surgeon General	Leading spokesperson on matters of public health.	Health Risks and Costs of Tobacco Use
Emphysema	A lung disease that makes breathing extremely difficult.	Health Risks and Costs of Tobacco Use
Carbon Monoxide	A chemical found in cigarette smoke that is very dangerous to inhale.	Health Risks and Costs of Tobacco Use
Cancer	A disease in which cells grow uncontrollably causing tumors.	Health Risks and Costs of Tobacco Use
Trachea	The air tube, or windpipe, which connects your mouth and nose to your lungs.	Healthy Alternatives to Smoking
Oxygen	A colorless, odorless gas breathed in by humans for survival.	Healthy Alternatives to Smoking
Lungs	Two organs that help humans breathe.	Healthy Alternatives to Smoking
Air sacs	Organ components found in the lungs responsible for gathering oxygen in the lungs and releasing it into the bloodstream.	Healthy Alternatives to Smoking
Bloodstream	The bloodstream carries blood and oxygen throughout the body to organs.	Healthy Alternatives to Smoking
Ballot	A ballot is the form in which a vote is recorded.	Secondhand Smoke
Petition	A petition is a formal request that is signed by people who agree with it and is given to a person of authority.	Secondhand Smoke
Secondhand Smoke	Secondhand smoke is a combination of the smoke that comes from the end of the cigarette that is burning and the smoke that is breathed out by the smoker(s).	Secondhand Smoke

Theoretical Model

Health Belief Model

Health Belief Model Components and Linkages¹



¹ Glanz, Karen, et al. Health Behavior and Health Education: Theory, Research and Practice, 3rd Edition

Health Belief Model and the Road of Life Curriculum

Concept

Application

Perceived Susceptibility: One's belief regarding the chance of getting a condition



The Road of Life Curriculum teaches students how body systems are affected by poor nutrition, lack of physical activity and tobacco use. For example, students learn why the body cannot perform essential functions without the proper nutrients. They also learn how physical activity strengthens the cardiovascular system and that tobacco use can deteriorate health. Students will use the Family Health History exercise (Nutrition Review) to learn diseases for which they are particularly at risk.

Perceived Severity: One's belief of how serious a condition and its consequences are



Several lessons in the Road of Life Curriculum discuss the specific consequences of poor health behavior. For example, students will learn the negative consequences of tobacco use. They also learn the health conditions of those exposed to secondhand smoke.

Perceived Benefits: One's belief in the efficacy of the advised action to reduce risk or seriousness of impact



Students are given opportunities to test the skills that they gain through activities such as role playing. They are given specific action steps to take in order to achieve optimal health and they provided with the effects that they should expect.

Perceived Barriers: One's belief about the tangible and psychological costs of the advised action



Students may be misinformed about nutrition, physical activity and tobacco use. The Road of Life curriculum will correct misinformation and provide the skills and incentives for overcoming barriers. For example, students will learn how to set a personal goal and track progress toward its accomplishment. They will also learn communication skills for refusing tobacco and avoiding other poor decisions when faced with peer pressure. Students find low-cost or no-cost options for physical activity and learn ways to make sure they are eating breakfast each day.

Cues to Action: Strategies to activate one's readiness



Students learn skills for reading nutrition labels, estimating fruit and vegetable serving sizes, setting a goal, time management, making a fitness plan and stretching routine, meal planning and other important "how-to" information. Students learn how to become healthier and when it is appropriate to ask for assistance. The goal tracking worksheet and time management systems are in place to remind students of their goals and how to balance leisure and necessary activities.

Self-Efficacy: One's confidence in one's ability to take action



In the Road of Life curriculum, students are given a variety of opportunities to demonstrate the desired behaviors. Students will receive positive feedback from the teacher through their written works/journals and the achievement of goals that are set.

Necessity of Health Education in the Classroom

The Necessity of Health Education in the Classroom

Approximately 8,000 children under the age of 15 are diagnosed with cancer each year in the United States.¹ Bleyer W.A. 1993, reports that the death rate from childhood cancer in the United States has decreased dramatically in recent years due to improved treatment. However, more children are being diagnosed with this painful disease causing an effect in which, at least one in three Americans will develop some type of cancer in their lifetime.² Nutrition and physical activity play a tremendous role in cancer prevention. As many as one third of all U.S. cancer deaths could be prevented through diet and exercise.³ Being overweight or obese is a risk factor for at least seven types of cancer.⁴ The National Institute of Health asserts that obesity prevention efforts must begin during childhood. A diet with few nutrient-rich foods, a lack of physical activity, and tobacco use all increase a person's risk of developing cancer. The Center for Disease Control (CDC) has concluded that education can be more effective than regulatory measures in long-term reduction of tobacco use. However, only 5% of U.S. schools have executed the CDC's smoking prevention recommendations.⁵

There are countless programs that target conditions that lead to chronic illnesses but very little work has been done in cancer prevention education. According to Slawta J., et. al, health promotion programs for children are successful and may favorably alter obesity and the development of adult lifestyle- related diseases. A study by Brook U, Mendelberg A., Galili A., Priel I., and Bujanover Y., illustrated that the students lacked knowledge with regard to the dangers of tobacco use, and it recommended that the topic should be incorporated in teacher's lesson plans. The study also noted that physicians, nurses and educational advisors suggested that health education should be implemented beginning in first and second grade.

Thus, effective health education is a sound investment in the future. According to the USDA, healthy diet could prevent at least \$71 billion per year in medical costs, lost productivity, and lost lives.⁶ Tobacco use causes 440,000 deaths annually and costs \$75 billion just in direct medical costs.⁷ Keeping one child from smoking will save \$230 per year in medical expenses throughout his life.⁸ Preventing one child from becoming obese will save her \$395 per year.⁹ If Road of Life's program saves just one child from dying of cancer, the value to society is estimated to be between \$5.5 million and \$7.5 million.¹⁰ These figures show the high value of a modest investment in health education.

In light of this information, **Road of Life** is one of the few organizations in the U.S. working exclusively on cancer prevention for children. Road of Life currently works with schools and youth-serving nonprofit organizations to help them incorporate health education with an emphasis on cancer prevention into their existing programs. The health education curriculum emphasizes nutrition, physical activity and the dangers of tobacco use and is aligned with the State Academic Standards as well as the National Health Education Standards. It is Road of Life's mission to eradicate preventable cancer and diseases of excess by educating children about the smoking, fitness, and nutrition decisions they can make to lead a healthier life.

¹ Miller, B.A., L.A.G. Ries, F.R. Hankey, F.L. Kosary, A. Harras, S.S. Devesa, and B.K. Edwards (editors). 1993. SEER Cancer Statistics Review: 1973-1990. NIH Publication Number 93-2789. National Cancer Institute, Bethesda, MD.

² American Cancer Society. Facts and Figures 2005. Atlanta, American Cancer Society; 2005.

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⁴ American Cancer Society. *The Complete Guide: Nutrition and Physical Activity*. Atlanta: American Cancer Society, 2005. http://www.cancer.org/docroot/PED/content/PED_3_2X_Diet_and_Activity_Factors_That_Affect_Risks.asp?sitearea=PED

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