BODY WALK

Classroom Activities

Cape Cod Cooperative Extension
P.O. Box 367
Barnstable, MA 02630
www.capecodextension.org
(508) 375-6690

Susan Bourque, RD, LDN
Nutrition Education Program
sbourque@barnstablecounty.org
(508) 375-6693
To the Teacher...

Classroom activities are an integral part of the *Body Walk* program. You are strongly encouraged to implement some of the suggested activities with your students. The activities are designed to introduce the concepts presented in the *Body Walk*. Suggested follow-up classroom activities will help reinforce and extend the learning experience. As you know, students retain more knowledge when they are exposed to information more than once.

The first activity in this section is a general goal-setting activity. Additional activities are divided by *Body Walk* station. There is one suggested pre-*Body Walk* activity and one follow-up activity for each of the nine main *Body Walk* stations:

- Brain
- Mouth
- Stomach
- Small Intestine
- Heart
- Lungs
- Bones
- Muscles
- Skin

Materials and supplies needed are listed at the beginning of each activity as well as the time required to complete the activity and subject matter areas in which the activity might be incorporated. Some activities require worksheets or student handouts. These are included at the end of this section and are ready to be copied.

This *Body Walk* program has been adapted from: Illinois Nutrition Education & Training Program and Child Nutrition & Wellness, Kansas State Department of Education.
The *Body Walk* was designed to provide teachers with a resource to help students make healthy lifestyle choices. To learn about these healthy choices, teachers can encourage students to set weekly health, nutrition and physical activity goals. The goals should be for new behaviors or to increase the frequency of current positive behaviors.

Goals should be simple, achievable and easy to measure. Rewards are a great way to encourage students to achieve goals. Ideas for rewards include stickers, pencils, bookmarks, classroom or recess privileges, or a walk with the principal. Goals can be recorded on bar or line graphs, on calendars, or in journals or contracts.

Encourage students to determine and set their own goals. Here are a few suggestions for goals:

- Try a new vegetable or fruit
- Play active games or ride my bike after school
- Eat breakfast
- Choose nutritious after-school snacks
- Drink water more often instead of sweetened drinks
- Drink or eat 3 servings of foods from the dairy group each day

You may also want to consider working together as a classroom and setting weekly goals. As a class, students could encourage each other to drink water after recess. You might bring small samples of a new fruit or vegetable for everyone to taste or ask students to bring samples from home.
## Sample Goal-Setting Calendar

<table>
<thead>
<tr>
<th>Name:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th><strong>Week 1 9/2 - 9/6</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>My goal this week:</td>
</tr>
<tr>
<td><strong>Try at least 2 new veggies</strong></td>
</tr>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Tried Jill’s recipe</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Week 2 9/7 - 9/13</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>My goal this week:</td>
</tr>
<tr>
<td><strong>Ride my bike to my friends houses at least twice</strong></td>
</tr>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Rode bike to Susan’s</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Week 3 9/14 - 9/20</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>My goal this week:</td>
</tr>
<tr>
<td><strong>Eat breakfast every day this week</strong></td>
</tr>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>Yes - had pancakes</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Week 4 9/21 - 9/27</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>My goal this week:</td>
</tr>
<tr>
<td><strong>Cut down on soda pop - drink only 3 cans instead of 7</strong></td>
</tr>
<tr>
<td>Sun</td>
</tr>
<tr>
<td>---</td>
</tr>
<tr>
<td><strong>I can at grandma’s</strong></td>
</tr>
</tbody>
</table>

---

**Classroom Activities - Page 3**
# My Goal-Setting Calendar

**Name:**

<table>
<thead>
<tr>
<th></th>
<th>Sun</th>
<th>Mon</th>
<th>Tues</th>
<th>Weds</th>
<th>Thurs</th>
<th>Fri</th>
<th>Sat</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Week 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My goal this week:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❑ I met my goal!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>❑ I still need to work on this!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I will:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Week 2</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My goal this week:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❑ I met my goal!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>❑ I still need to work on this!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I will:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Week 3</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My goal this week:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❑ I met my goal!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>❑ I still need to work on this!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I will:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Week 4</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My goal this week:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>❑ I met my goal!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>❑ I still need to work on this!</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
<td>❑</td>
</tr>
<tr>
<td>I will:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
POWER PANTHER™ says EAT SMART. PLAY HARD.™
Healthy food choices from MyPlate and vigorous exercise help jump start your brain!

**Overview:** We use our brains everyday to make important choices. Choose foods from each MyPlate food group each day. Choose to play hard! Physical fitness and physical activity are part of good health and help us grow. Being physically fit or active reduces the risk of certain diseases, encourages our bones to grow stronger, helps us make bigger muscles and keeps our bodies from storing too much fat. Always wear a helmet when you play hard. A helmet protects the brain from injury.

**Before Body Walk Do This Activity:**

**What is a Healthy Diet?**

**Grades:** K-5  
**Subjects:** Health, Science  
**Time Required:** 30 minutes  

**Materials:** MyPlate Handout (page 25)  
Assorted Food Labels—Have students bring in labels from foods they like (if possible)  
Poster Board  
Markers

**Procedure:**

1. Distribute the MyPlate Handout. Allow students time to read it and discuss it.  
2. Explain that the MyPlate represents a balanced diet to help people make healthy eating choices.  
3. Have students work in teams to figure out how many foods they can name for each food group. In which food groups could they name the most foods? Where did they place combination foods such as burritos? Have them list their favorite foods and try to place them in the plate.  
4. Older students can work in teams to make a serving-size poster showing full-scale drawings of serving sizes of their favorite foods. Discuss how to find out what a serving size is using the MyPlate and food labels.
BRAIN

POWER PANTHER™ says EAT SMART. PLAY HARD.™ Healthy food choices from MyPlate, eating breakfast and vigorous exercise help jump start your brain!

Overview: We use our brains everyday to make important choices. Choose foods from each food group each day. Choose to play hard! Physical fitness and physical activity are part of good health and help us grow. Being physically fit or active reduces the risk of certain diseases, encourages our bones to grow stronger, helps us make bigger muscles and keeps our bodies from storing too much fat. Always wear a helmet when you play hard. A helmet protects the brain from injury. Remember to start each day with breakfast to get your brain up and ready to go!

After Body Walk Do This Activity:

Healthy Choices

Grades: K-5
Subjects: Health, Science
Time Required: 30 minutes

Materials: Worksheets:
• K-2: Power Up with Breakfast
• 3-5: Fast Food Shake Down (pages 30-33)
Pencils
Glue (K-2)
Scissors (K-2)

Procedure:
1. Power Up with Breakfast: Start by asking children to act out how they feel when they don't eat breakfast. Explain that a "power up breakfast" has foods from at least three food groups. Distribute worksheets (3 pages). Cut the breakfast food blocks from page 27. Paste breakfast foods under the correct food group columns on page 26. Each student then draws his or her favorite breakfast on MyPlate on page 28.

2. Fast Food Shake Down: Distribute the worksheets (3 pages). Discuss the food groups in pizza. Identify pizza with the most calories, fat grams, and sodium. Ask students which pizza would be the healthiest choice for a snack attack. Next, look at the nutrients in fast food sandwiches. Answer the questions on the worksheet. Discuss which sandwiches would be the healthiest choices. Refer to teacher KEY on page 32.
MOUTH

POWER PANTHER™ says EAT SMART. PLAY HARD.™ You need a healthy mouth to enjoy your food.

Overview: Tooth decay is one of the most common diseases today. Foods that are sticky, starchy, or sugary can provide the food that bacteria on your teeth use to make acids and cavities. Crunchy and hard vegetables and fruits help clean teeth as they are chewed. To take care of your teeth, brush and floss after meals and snacks.

Before Body Walk Do This Activity:

Sticky Snacks

Grades: K-5
Subjects: Health, Science
Time Required: 25 minutes

Materials: Water
1 Marshmallow
1 Apple
1 Sharp Knife
1 Wet Towel
1 (per student) Carrot Slice
1 (per student) Hard Candy
2 (per student) Paper Cups
1 (per student) Paper Towel Sheet

Procedure:
1. Have students feel the carrot and candy and discuss the way they feel. Use feel words to describe: sticky, smooth, slick, rough, hard, soft, wet, dry, slimy, etc.
2. Have them put each food into a separate cup of water.
3. Wait a few minutes, and then have the students feel the foods again. What do they feel like now?
4. Cut the marshmallow with the knife. Show how sticky it becomes. Then cut the apple with the knife and show the difference.
5. Point out the reasons for avoiding sticky sweets between meals.
6. Talk about foods from the Dairy Group that are especially healthy for the teeth as well as healthy snacks from the fruit and vegetable groups.
POWER PANTHER™ says EAT SMART. PLAY HARD.™ You need a healthy mouth to enjoy your food.

Overview: Tooth decay is one of the most common diseases today. Foods that are sticky, starchy, or sugary can provide the food that bacteria on your teeth use to make acids and cavities. Crunchy and hard vegetables and fruits help clean teeth as they are chewed. To take care of your teeth, brush and floss after meals and snacks.

After Body Walk Do This Activity:

What Causes Tooth Decay?

Grades: K-5
Subjects: Health, Science
Time Required: 5 minutes to set up. 15 minutes for observations on 2 days

Materials: 2 Raw Eggs
3 cups White Vinegar
1 oz Fluoride Mouth Rinse
2 Plastic Cups

Procedure:
1. Put fluoride in a cup with water. Soak one egg with shell intact in this solution for 24 hours. Remove egg, rinse with clear water and mark with an “F”.
2. Put the treated and untreated eggs with shells intact into clean cups.
3. Cover each with vinegar (vinegar represents mouth acids).
4. Note bubbles on the shell of the untreated egg. This shows the dissolution of calcium.
5. Observe what happens to the shells on the eggs and record results. Note differences between the treated and untreated eggs.
6. This is a simulation of teeth decomposition. Explain the importance of brushing with fluoride toothpaste after meals and snacks.
STOMACH

POWER PANTHER™ says EAT SMART. Digestion begins in the mouth and continues in the stomach.

Overview: The stomach is like a stretchy bag that holds food after it is eaten. The stomach helps break the food into smaller pieces so the body can use it. Little glands in the stomach make special juices that are waiting for food. Once the food enters the stomach, muscles move the walls of the stomach. This mashes and stirs the food with the special juices breaking the food into smaller pieces. When the stomach is empty, it shrinks like a balloon without air. The stomach is a stretchy storage tank!

Before Body Walk Do This Activity:

Digest This!

Grades: K-5
Subjects: Health, Science, Physical Education
Time Required: 30 minutes

Materials: 1 (per jar) Chunked Potato
1 (per jar) Grated Potato
Water
2 (for 2 students) Jars with Lids
Chart of Digestive System Handout

Procedure:
1. Divide the class into pairs, and give each pair two jars.
2. Put some potato chunks in one jar. Put some grated potato in the other jar. Add water to each jar. Fasten the lid.
3. Students take turns shaking both jars for 10 minutes.
4. Look at the mixture. Discuss what happened to the potato. Talk about the digestive action that takes place in the stomach. Food is churned into small pieces and mixed with gastric juices that change the solid food to liquid called chyme.
5. Distribute the digestive system chart. Use the chart to describe how food moves through the digestive system. The breaking down of food, called digestion, changes food into nutrients that can be used by the cells for growth, repair and energy. The digestive system can be compared to a giant food processor.
STOMACH

POWER PANTHER™ says EAT SMART. Digestion begins in the mouth and continues in the stomach.

Overview: The stomach is like a stretchy bag that holds food after it is eaten. The stomach helps break the food into smaller pieces so the body can use it. Little glands in the stomach make special juices that are waiting for food. Once the food enters the stomach, muscles move the walls of the stomach. This mashes and stirs the food with the special juices breaking the food into smaller pieces. When the stomach is empty, it shrinks like a balloon without air. The stomach is a stretchy storage tank!

After Body Walk Do This Activity:

Overflow

Grades: K-5
Subjects: Health, Science
Time Required: 20 minutes

Materials: 1 Tube of Toothpaste or glue bottle
1 Paper Cup

Procedure:
1. Hold the tube of toothpaste in your hands.
2. With the cap screwed on tightly, position the tube above the paper cup.
3. Moving your fingers, squeeze the tube in different places.
4. Remove the cap from the tube, and squeeze the tube with your fingers.
5. Discuss the results. With the cap secured, the toothpaste inside the tube moves around in, but remains inside the tube. Without the cap, the toothpaste moves out the opening of the tube.
6. Explain that the stomach has three layers of muscles contracting in different directions. These squeezing actions, like those of your hands, thoroughly mash the food in the stomach and mix it with the digestive juices, forming soupy paste. Between the stomach and the upper part of the small intestine there is a muscle called the sphincter. When the sphincter relaxes, it opens and a small amount of food is squeezed into the small intestine just as toothpaste moves out of the tube when the cap is off. After a small amount of food leaves the stomach, the sphincter quickly closes, sealing off the passageway. The rest of the food remains in the stomach until the small intestine is ready to receive it.
SMALL INTESTINE

POWER PANTHER™ says EAT SMART. In the small intestine, foods are broken into building blocks called nutrients and the nutrients travel to all parts of the body.

Overview: Food moves from the stomach into the small intestine. Inside this approximately 20-foot-long tube, juices break the food down into tinier bits. The small intestine squeezes food along like toothpaste is squeezed through a tube. Tiny hairlike villi cover the inside walls of the small intestine. Villi are like doors in the walls of the intestine. Food goes through the villi and out into the bloodstream.

Before Body Walk Do This Activity:

Your Small Intestine

Grades: K-5
Subjects: Health, Science, Language Arts
Time Required: 30 minutes

Materials: Chart of Digestive System (page 33 or 34)
1 teaspoon Black Pepper
1 cup Water
1 Bowl
1 Strainer
1 Coffee Filter

Procedure:
1. Mix the pepper and water. Explain that food has to be tiny to go through the villi.
2. Pour the water and pepper mixture through a coffee filter inside a strainer into a bowl.
3. Discuss what went through the coffee filter and what did not.
4. Compare the experiment to how the small intestine and villi work. Compare the bowl to the bloodstream, which receives the nutrients, the strainer to the small intestine and the coffee filter to the villi.
5. Have the students write or draw a journal entry telling or showing how the small intestine and the villi work. What do they do to help with digestion?
POWER PANTHER™ says **EAT SMART**. In the small intestine, foods are broken into building blocks called nutrients and the nutrients travel to all parts of the body.

**Overview:** Food moves from the stomach into the small intestine. Inside this approximately 20-foot long tube, juices break the food down into tinier bits. The small intestine squeezes food along like toothpaste is squeezed through a tube. Tiny hair-like villi cover the inside walls of the small intestine. Villi are like doors in the walls of the intestine. Food goes through the villi and out into the bloodstream.

**After Body Walk Do This Activity:**

### How Long Am I?

**Grades:** K-5  
**Subjects:** Health, Science, Math  
**Time Required:** 20 minutes

**Materials:** 20 feet of Rope (approx 1 inch wide) or Yarn or String  
**Ruler**

**Procedure:**

1. Have students measure a 20-foot long piece of rope, yarn or string.
2. Using the ruler, also show students that the small intestine is about 1 to 1.6 inches wide.
3. Have the students coil the string so that it would fit into the abdominal cavity (about the size of a saucer).
4. Discuss why the intestines are so long, pointing out that the longer the intestines, the greater surface area through which nutrients from food can be absorbed into the bloodstream.
5. For older students, calculate the surface area of the small intestine.
POWER PANTHER™ says EAT SMART. Low-fat foods are good for your heart.

Overview: The heart is a muscular organ that pumps blood through blood vessels throughout the body. A child’s heart is about the size of a clenched fist. The heart works 24 hours a day without stopping through a person’s whole lifetime. The heart never rests. It is important to take good care of the heart by exercising and eating healthy foods. Too much fat in the diet is unhealthy for the heart.

Before Body Walk Do This Activity:

Detecting Your Pulse

Grades: K-5
Subjects: Health, Science, Math
Time Required: 15 minutes

Materials: Toothpicks
Modeling Clay

Procedure:
1. Construct a simple apparatus to visually detect the pulse. Provide each student with a toothpick and a “dime-sized” piece of clay.
2. Have students stick the toothpick into the clay-this will be their “counter”.
3. Have students rest the “counter” on the inside of their wrist just below the base of the thumb.
4. Have students observe the toothpick as it moves. Let students work in pairs to time the counts in 15 seconds. Use this information to determine how many beats per minute (Count x 4). For younger students, have them count the movements they see in 6 seconds and then add a 0.
5. Optional: Have the students feel for their own pulse. After doing the activity with the clay, they can easily see where to feel for their own pulse.
6. Construct a class graph using the information from each student.
POWER PANTHER™ says EAT SMART. Low-fat foods are good for your heart.

Overview: The heart is a muscular organ that pumps blood through blood vessels throughout the body. A child’s heart is about the size of a clenched fist. The heart works 24 hours a day without stopping through a person’s whole lifetime. The heart never rests. It is important to take good care of the heart by exercising and eating healthy foods. Too much fat in the diet is unhealthy for the heart.

After Body Walk Do This Activity:

Heartbeat

Grades: K-5
Subjects: Health, Science, Math
Time Required: 15 minutes
Materials: 1 (per every 2 students) Cardboard Tube from a paper towel roll

Procedure:
1. Have students pair up and listen for their partner’s heartbeat by placing the tube over the partner’s heart.
2. Count the number of beats per 30 seconds. Add this number twice to find out how many times each minute the person’s heart beats. Or count the number of beats for 6 seconds and then add a 0 for younger students.
3. Have one partner run in place for one minute, then listen again. Have the student write down what they hear and calculate the new beats per minute. Then have the partners switch.
4. Follow-up Discussion: The heart beats faster after the exercise in order to pump more blood (oxygen) to the working muscles.

Note: For older students, make graphs showing the difference in heart rate before and after exercise.
POWER PANTHER™ says PLAY HARD. Healthy lungs help you breathe faster when you run and play.

Overview: Lungs are used in breathing to bring oxygen to all parts of the body. It is important to keep lungs healthy. Smoking is unhealthy because of the nicotine, tar and carbon monoxide produced. The best way to have healthy lungs is to never start smoking, eat a variety of healthy foods, and exercise.

Before Body Walk Do This Activity:

Fogger

Subjects: Health, Science
Time Required: 15 minutes

Materials: Hand Mirror
Paper Towels

Procedure:
1. Use the paper towel to clean and dry the mirror.
2. Hold the mirror near, but not touching, the mouth.
3. Exhale onto the mirror two or three times.
4. Examine the surface of the mirror.
5. The purpose of this experiment is to collect one of the gases in our breath. The surface of the mirror will become fogged because of respiration. Respiration is the process by which oxygen combines with glucose to produce energy and two waste byproducts, carbon dioxide and water vapor (water in the form of a gas). Respiration is constantly occurring in each of the cells of the body. The water that is seen on the mirror is the water vapor produced by the respiration reaction inside the cells. When the warm water vapor comes in contact with the cool mirror, condensation (a process by which a gas loses heat energy and turns to a liquid) occurs because the mirror is colder than the inside of the lungs.
POWER PANTHER™ says PLAY HARD. Healthy lungs help you breathe faster when you run and play.

Overview: Lungs are used in breathing to bring oxygen to all parts of the body. It is important to keep lungs healthy. Smoking is unhealthy because of the nicotine, tar and carbon monoxide produced. The best way to have healthy lungs is to never start smoking, eat a variety of healthy foods, and exercise.

After Body Walk Do This Activity:

Measuring Your Lung Capacity

Grades: K-5
Subjects: Health, Science, Math
Time Required: 30 minutes

Materials: 1 (per student) String (24 inch lengths)
           1 (per student) Balloons (round shaped)
           Rulers

Procedure:
1. Divide students into pairs and ask them to think of a way to measure the amount of air our lungs can hold. (Hold up a balloon and let them make the connection.)
2. Explain that they will be measuring their lung capacity (amount something can hold) using balloons. To show the size of the person’s lung capacity in comparison with another’s, you will be measuring how big around the balloon gets.
3. Demonstrate how to measure the circumference of a balloon that you’ve blown up with the string and then how to measure the amount of string used with a ruler.
4. Have each student actually blow up the balloon with ONE breath and measure it. Partners will take turns helping each other.
5. Give each student an opportunity to tell his/her lung capacity. Compare and discuss the lung capacity of different people. This activity creates a physical representation of the amount of air that the student’s lungs can hold at once.
6. Optional: Make a bulletin board! Tie off each balloon and attach it to the bulletin board with a label stating the child’s name and lung capacity.
POWER PANTHER™ says EAT SMART. Bones provide the framework for the body and calcium in dairy products builds strong bones.

Overview: Bones hold you up. They give the body its shape. Bones are very strong and hard on the outside to support the body. Inside, the bone cells are soft like a sponge. When you are born, you have about 300 bones. As you grow, some of these bones grow or fuse together. When you are an adult you will have 206 bones. Bones must have a daily supply of building materials to be strong and healthy. Calcium is an important nutrient needed by bones, and it can be found primarily in the milk, yogurt and cheese group. Three servings from this group are needed for growing children. Other nutrients important for bone strength are vitamin D, a calcium absorption enhancer; vitamin C, a “cement” between bone layers; and protein, a basic body building material.

Before Body Walk Do This Activity:

**Chicken Bone Experiment**

**Grades:** K-5  
**Subjects:** Health, Science, Math  
**Time Required:** 20 minutes on 2 days (Must soak one bone overnight)  

**Materials:** 2 Uncooked Chicken Bones  
Vinegar  
7 cups Flour  
1 Jar

**Procedure:**
1. Fill a jar with vinegar and place one chicken bone in the jar overnight.  
2. Leave one chicken bone untreated.  
3. Observe the bones the next day. The chicken bone in the vinegar jar can now be bent. The vinegar will remove the calcium from the bone.  
4. Discuss the importance of calcium in making strong bones. Ask the students what kind of bones they would like in their bodies. Stress the importance of eating foods rich in calcium so their bones will be healthy and strong.  
5. Demonstrate the amount of calcium in the body. If calcium were removed from the body it would resemble flour. By using this display of varying amounts of flour, children can learn how much calcium is needed to stay healthy. Newborn-¼ cup flour; Age 10- 3½ cups flour; Age 15- 7 cups flour.
POWER PANTHER™ says EAT SMART. Bones provide the framework for the body and calcium in dairy products builds strong bones.

Overview: Bones hold you up. They give the body its shape. Bones are very strong and hard on the outside to support the body. Inside, the bone cells are soft like a sponge. When you are born, you have about 300 bones. As you grow, some of these bones grow or fuse together. When you are an adult you will have 206 bones. Bones must have a daily supply of building materials to be strong and healthy. Calcium is an important nutrient needed by bones, and it can be found primarily in the milk, yogurt and cheese group. Three servings from this group are needed for growing children. Other nutrients important for bone strength are vitamin D, a calcium absorption enhancer; vitamin C, a “cement” between bone layers; and protein, a basic body building material.

After Body Walk Do This Activity:

Backbone

Grades: K-5
Subjects: Health, Science
Time Required: 45 minutes
Materials:
2 Large Thread Spools
2 Medium Thread Spools
2 Small Thread Spools
Cardboard
Paper Hole-punch
Pencil
Ruler
Scissors
String (18 inches)
Tape

Continued on next page.
**Backbone, continued**

**Procedure:**

1. Place the flat ends of all the thread spools (except one of the small spools) on the cardboard.
2. Draw circles on the cardboard by tracing around the base of each spool.
3. Cut out the five paper circles from the cardboard, and use the hole-punch to make a hole in the center of each.
4. Cut an 18-inch length of string.
5. Thread one end of the string through the hole in one of the large spools, then tape the end of the string to the bottom of the spool.
6. Thread the free end of the string through the hole in one of the large cardboard circles.
7. Add the second large spool to the string, followed by the second large cardboard circle.
8. Add the medium-sized spools and the medium cardboard circles alternately to the string.
9. Add the small spool to the string with the small cardboard circle between them.
10. Tape the free end of the string to the end of the small spool.
11. Stand the column of spools on a table, with the large spool on the bottom.
12. Holding the bottom spool on a table, push the top spool about 2 inches to one side.
13. Repeat the previous step several times, pushing the top spool in different directions.
14. A model of the spine is made. The string of spools is able to lean in any direction. Because the vertebrae, like the thread spools, are not permanently attached together, you can lean and bend in different directions. Between each pair of vertebrae is a disk of cartilage that acts as a shock absorber, just as the cardboard circle between the spools. Like the hole in the thread spool, there is hole in the back part of each vertebra that creates a passageway called the spinal canal.
MUSCLES

POWER PANTHER™ says EAT SMART. Foods with carbohydrates provide fuel for exercising muscles, and protein helps build muscle tissue.

Overview: All body movements are possible because of the more than 600 muscles in the body. Exercise helps maintain muscle strength, flexibility and endurance. It is important to provide good fuels for exercising muscles. Foods from the grain, rice, pasta and bread group are packed with carbohydrates---great fuel for exercising muscles. Protein foods like meat, poultry, eggs, nuts, beans and milk help build muscle tissue. Muscles need to be exercised in combination with a good diet to become bigger and stronger.

Before Body Walk Do This Activity:

Muscle Power

Grades: K-5
Subjects: Health, Science, Physical Education
Time Required: 15 minutes

Materials: Chair
Heavy Table

Procedure:
1. Ask students to work in pairs.
2. Ask one student to place his or her hands, palm up, under the edge of the table and to try to lift the table with medium pressure.
3. While pressure is being applied to the table, feel the front and back of the student’s upper arm.
4. Next, ask the student to place his or her hands, palm down, on top of the table and to press down.
5. Again, feel the same parts of the student’s upper arm.
6. Have students change places and repeat.
7. Discuss that the muscle in front of the arm feels harder than the muscle in the back of the arm when the hand is pushing up on the table. The back muscle in the arm feels harder when the hand is pressing down on the table.
8. Pushing up on the table causes the flexor muscle in the front of the arm to contract and harden. Pushing down on the table causes the extensor muscle in the back of the arm to contract and harden. The muscle pair in the upper arm is identified in this activity.
POWER PANTHER™ says EAT SMART. Foods with carbohydrates provide fuel for exercising muscles, and protein helps build muscle tissue.

Overview: All body movements are possible because of the more than 600 muscles in the body. Exercise helps maintain muscle strength, flexibility and endurance. It is important to provide good fuels for exercising muscles. Foods from the grain, rice, pasta and bread group are packed with carbohydrates—great fuel for exercising muscles. Protein foods like meat, poultry, eggs, nuts, beans and milk help build muscle tissue. Muscles need to be exercised in combination with a good diet to become bigger and stronger.

**After Body Walk Do This Activity:**

**Building Muscle Strength**

**Grades:** K-5  
**Subjects:** Health, Science, Physical Education  
**Time Required:** 15 minutes

**Materials:** Heavy Book

**Procedure:**

1. **Muscle Fatigue Exercise:**  
   Have students open and close their fist as many times as possible within a three-minute period (less for younger children). Tell the students why the hand becomes tired. The muscle was put through repetitive exercise to tire the muscle. The muscle becomes tired because the energy stores are used up.

2. **Strength Building Exercise:**  
   Have the children stand and flex one arm for two minutes. Then have them put a heavy book in the other arm and flex for two minutes. Tell why the arm with the book became tired more quickly. It is important to push muscles past their limit to build strength. For example, you lift 50 pounds every day. After a few weeks, it becomes easier, so you add more weight. Eventually you can lift 100 pounds. When muscles are overused over a period of time, it takes more to tire the muscle. Therefore the muscle becomes stronger. This is called endurance.
SKIN

POWER PANTHER™ says EAT SMART. Nutrients we get in our food help the skin heal itself.

Overview: Skin is the largest protective organ that our bodies have. It is living tissue that can repair itself. It is important to take good care of the skin on the outside and the inside. We can take care of our skin on the outside, by wearing sunscreen, to limit the damage caused by the sun. Staying out of the sun during the most damaging time of the day (11:00 a.m. to 3:00 p.m.) and wearing protective clothing also help protect our skin. What we eat affects how healthy our skin is from the inside. Fruits and vegetables that contain vitamin C are important for helping the skin to heal. Foods like oranges, green peppers, strawberries, broccoli and tomatoes have a lot of vitamin C.

Before Body Walk Do This Activity:

How Much Skin Do You Have?

Grades: K-5
Subjects: Health, Science, Math
Time Required: 30 minutes

Materials: Large Paper or Graph Paper Large Enough to Lie On

Pencil

Procedure:
1. Assign the students to work in pairs.
2. One student lies down on a large piece of paper.
3. Have the other student draw around the student’s body.
4. The students then change places and repeat.
5. Each student then cuts out the body shape.
6. To find out exactly how much skin you have, cover the cut out with 1-inch graph paper and count the squares or actually draw the outline on 1-inch graph paper.
SKIN

POWER PANTHER™ says EAT SMART. Nutrients we get in our food help the skin heal itself.

Overview: Skin is the largest protective organ that our bodies have. It is living tissue that can repair itself. It is important to take good care of the skin on the outside and the inside. We can take care of our skin on the outside, by wearing sunscreen, to limit the damage caused by the sun. Staying out of the sun during the most damaging time of the day (11:00 a.m. to 3:00 p.m.) and wearing protective clothing also help protect our skin. What we eat affects how healthy our skin is from the inside. Fruits and vegetables that contain vitamin C are important for helping the skin to heal. Foods like oranges, green peppers, strawberries, broccoli and tomatoes have a lot of vitamin C.

After Body Walk Do This Activity:

Sun Sensitivity Survey

Grades: K-5
Subjects: Health, Science, Math
Time Required: 20 minutes

Materials: Graph Paper
Colored Pencils or Markers

Procedure:
1. Ask how many students in the class have been sunburned.
2. Draw conclusions about who is most likely to get sunburned based on skin color, hair color and eye color.
3. Graph the results.
4. Discuss the importance of using sun block, wearing protective clothing, and limiting exposure during the most damaging time of the day (11:00 a.m. to 3:00 p.m.).
Student Worksheets
For
Classroom Activities
Power Up with Breakfast

Cut Breakfast food blocks from page 27. Paste snack foods under the correct food group column.

<table>
<thead>
<tr>
<th>Protein</th>
<th>Dairy</th>
<th>Fruit</th>
<th>Vegetables</th>
<th>Grains</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Power Up with Breakfast

Color and cut out breakfast food blocks below. Paste foods under the correct column on page 26.

**Meal #1**
- Yogurt
- Banana
- Muffin
- Water

**Meal #2**
- Egg Burrito with Salsa
- Grapes
- Milk

**Meal #3**
- Waffle
- Fruit Cup
- Ham
- Milk
Power Up with Breakfast

Draw your favorite breakfast on this plate.

ChooseMyPlate.gov
Answer the following questions:

1. What food groups are in pizza? ____________________________________________

2. Which pizza has the most calories? _______________________________________

3. Which pizza has the most fat grams? ______________________________________

4. Which pizza has the most sodium? _________________________________________
SANDWICHES!

DOUBLE CHEESEBURGER
- Calories: 570
- Calories from fat: 144
- Total Fat: 16 gm
- Sodium: 979 mg
- Protein: 24.6 gm
- Vitamin A: 360 IU
- Vitamin C: 5 mg
- Iron: 4.9 mg

HAMBURGER
- Calories: 263
- Calories from fat: 101.7
- Total Fat: 11.3 gm
- Sodium: 505 mg
- Protein: 12.4 gm
- Vitamin A: 100 IU
- Vitamin C: 2 mg
- Iron: 2.9 mg

CHEESEBURGER
- Calories: 318
- Calories from fat: 144
- Total Fat: 16 gm
- Sodium: 743 mg
- Protein: 15 gm
- Vitamin A: 360 IU
- Vitamin C: 2 mg
- Iron: 2.8 mg

FISH SANDWICH
- Calories: 425
- Calories from fat: 231.3
- Total Fat: 25.7 gm
- Sodium: 799 mg
- Protein: 14.7 gm
- Vitamin A: 180 IU
- Vitamin C: 0 mg
- Iron: 2.5 mg

ROAST BEEF SANDWICH
- Calories: 347
- Calories from fat: 120.5
- Total Fat: 13.4 gm
- Sodium: 766 mg
- Protein: 22.4 gm
- Vitamin A: 240 IU
- Vitamin C: 3 mg
- Iron: 4 mg
Fast Food Shake Down

Look at the nutrients in fast food sandwiches. Answer the questions that follow.

1. Which sandwich has the most calories?

________________________________________________________________________

2. Which sandwich has the most grams of fat?

________________________________________________________________________

3. a. Which 2 sandwiches have the most vitamin A?

________________________________________________________________________

b. What is the food both sandwiches have in common?

________________________________________________________________________

4. Which sandwich has the most sodium?

________________________________________________________________________

5. Which 2 sandwiches have the most iron?

________________________________________________________________________
Fast Food Shake Down

Teacher Key

Pizza

1. What food groups are in pizza? Vegetable, grain, milk, meat
2. Which pizza has the most calories? Pepperoni – 526 calories
3. Which pizza has the most fat grams? Pepperoni – 28.5 grams of fat
4. Which pizza has the most sodium? Pepperoni – 1365

Sandwiches

1. Which sandwich has the most calories?
   Double cheeseburger
2. Which sandwich has the most grams of fat?
   Double cheeseburger
3. a. Which 2 sandwiches have the most vitamin A?
   Double cheeseburger and cheeseburger
   b. What is the food both sandwiches have in common?
   Cheese
3. Which sandwich has the most sodium?
   Double cheeseburger
4. Which 2 sandwiches have the most iron?
   Double cheeseburger and roast beef
The Digestive System

- Diaphragm
- Esophagus
- Spleen
- Stomach
- Liver
- Pancreas
- Gallbladder
- Colon
- Small Intestine
- Cecum
- Appendix
- Rectum