

# **Before You Get Started**

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BodyTrek is an educational program that teaches health awareness and safety to elementary school children. It is a traveling exhibit which provides interactive learning displays. The exhibit is accompanied by a teachers guide and student workbooks. Inside the exhibit the students will:

- learn about bones and joints with a moveable spine
- learn home and community safety rules through hands-on games
- experience the circulatory system by seeing their heart beat on a giant heart
- see the difference between healthy and unhealthy foods
- understand the five senses and how to protect them with models and games
- map functions of the brain on a giant model of the brain and much more.

All of this is presented with an emphasis on making good choices now to ensure a healthy future.

#### **Using the Teacher Guide**

The teacher guide is divided into two sections: one for use with the K-2 workbook and one for use with the Grade 3-5 workbook.

#### **Using the Workbooks**

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There is a workbook for grades K-1-2 and a workbook for grades 3-4-5. Workbooks should be kept at school and used during school hours. All activities should be completed in the classroom prior to the exhibit tour. These materials will help the children prepare for the exhibit. After the tour, completed workbooks should be sent home and shared with parents.

Preview the workbooks and teacher guide thoroughly. Some of the activities may be challenging for younger students, especially early in the school year. It may be necessary to give added explanation and assist the students as they work through the workbooks. You may also decide to delete some activities and substitute with health lessons of your own choosing.



# Teacher's Guide for K,1,2 Activity Book





# **Scan Me**

# **Read the following aloud to the students:**

Are you ready for an adventure?

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Welcome to BodyTrek: an amazing adventure that explores all the things that are about your body.

Your guides, Trek and Rip, will help you on your journey. (Point out the images of Trek and Rip.)



This exciting adventure will take you through miles and miles of blood vessels and muscles with heart pumping and brain working. Let's explore your marvelous self – every inch of it a wonder. Along the way you'll learn how your body works, and how to take care of yourself to be the best that you can be!

What do you think you might learn from BodyTrek? (Discuss.)

# Guide the students through learning about CELLS. Students can color the cell images either before or after discussion. Read the following aloud to the students:

Cells are the building blocks of your body!

- 1. Put your index finger on the single CELL drawing. Did you know that 75 million tiny versions of a cell are what make up your body?
- Put your index finger on the CELLS drawing. Cells come together, much like building blocks you have at home, to build YOU! They make up everything about you: your skin, eyes, nose, lips and everything that makes you who you are – inside and out.

# **Read the following aloud to the students:**

You need to exercise, eat right, keep everything clean and make sure you are safe. Those little cells are working hard together for YOU! It is important for you to take care of your body and the cells that ARE your body.





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# **Your Bones**

## **Read the following aloud to the students:**

The bones of your skeleton make your body firm and strong. Without bones, your body would flop like a rag doll. Bones and muscles help you move. (Point out picture of bones.)

Bones give our bodies shape and protect stuff inside us. Bones are the framework for your whole body. The bones that make up your skeleton grow and change all the time like other parts of your body.

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## Guide the students through learning about their BONES in the workbook.

Does anyone know what makes your bones strong? Look at the pictures and circle what makes your bones strong.

- 1. Does milk make your bones strong? (Circle milk.)
- 2. Does candy make your bones strong? (Don't circle it.)
- 3. Do French fries make your bones strong? (Don't circle it.)

It is important, for your posture and your bones, to stand correctly.

- 1. Let's get a volunteer to stand correctly like Trek. (Instruct volunteer.)
- 2. Let's get a volunteer to stand incorrectly like Rip. (Instruct volunteer.)
- 3. Can you all tell the difference in the right and wrong way to stand?

It is important to sit correctly too.

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- 1. Let's get a volunteer to sit correct. (Instruct volunteer.)
- 2. Let's get a volunteer to sit incorrectly. (Instruct volunteer.)
- 3. Can you tell the difference in the right and wrong way to sit?

It is important that when you are in your seat in school, at home sitting at the dinner table, sitting in front of your computer, or standing or seated anywhere – that you practice good posture.

## **Read the following aloud to the students:**

You must take care of your bones!

- Be sure to protect those skull bones (and your brain inside!) by wearing a helmet every time you ride your bike, skate, or roller blade.
- Wear wrist supports and elbow and knee pads when you go skateboarding, skating or riding a bike.
- If you play a sport like football, soccer, or ice hockey, always wear all the safety gear or equipment that's required for the sport.
- Practice good standing and sitting posture habits.

Drink milk and eat other dairy products (like low-fat cheese, frozen yogurt, and ice cream, for example). The reason? All of these things contain calcium, which helps bones harden and become strong.



# **Your Muscles**

# **Read the following aloud to the students:**

You have muscles all over your body. They are attached to parts of your skeleton. They pull the bones like the strings of a puppet and work together so that you can move to do things like:

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point

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- walk
- ride a bike

There are also muscles that help things happen in your body like:

- talking
- pumping blood

Some people can't run or jump because they cannot use their legs, and others can't use their arms. They can build up the muscles that they can use.

# Guide the students through learning about their MUSCLES in the workbook.

Does anyone know what makes a body move? Look at the pictures and circle the correct answer.

- 1. Does a muscle help you move your body? (Circle the muscle.)
- 2. Does a fairy help you move your body? (Don't circle it.)
- 3. Does a cupcake help you move your body? (Don't circle it.)

Does anyone know which activities are using muscles to move? Look at the pictures and circle the correct answers.

- 1. Are muscles moving when you are swimming? (Circle swimming.)
- 2. Are muscles moving when you are playing ball? (Circle playing ball.)
- 3. Are muscles moving when you are sitting still? (Do not circle it.)

# **Read the following aloud to the students:**

It is important for you to take care of your muscles!

- Keep your muscles in shape with exercise.
- Excellent exercises for your muscles are:
  - bike riding
  - skating

- swimming
- soccer
- dancing
- jumping rope
- Stretch your muscles gently 5-10 minutes before you exercise or play a sport.



# **Safety Zone**

# **Read the following aloud to the students:**

The most important safety rules to remember are...

- Always wear your seatbelt when riding in a car
  Always keep your hands, feet, and head inside a car
- Always look both ways before crossing a street
- Obey all traffic signals and signs
- Always wear a helmet when riding a bike
- Wear light colored clothing when riding a bike, skateboard or roller blading
- Don't ride after dark
- Stay away from strangers
- Know your address
- Know how to call 9-1-1 on a telephone

# Safe or Unsafe

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# Guide the students through the SAFE HOUSE drawing and have them point to each image and discuss why it is important to avoid.

Learn the things in your home that are unsafe and then stay away from them! Follow along by pointing to each picture as we talk about them.

1. Is a fish safe? (Yes.)

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- 2. Is a banana on the floor safe? (No.) Are there other things you might slip on?
- 3. Is a hairdryer near water safe? (No.) Are there other things like a hairdryer in your home that you might need to be careful with around water?
- 4. Is a hot pot of water safe? (No.) Why not?
- 5. Let's start with the match that is on fire. Is a fire safe? (No.) Why not?
- 6. Is a milk carton safe? (Yes.)
- 7. Are your hands and fingers near an electrical outlet safe? (No.) Why not?

Circle the fish and the milk as being the safest items in the house.

# **Guide the students through the SAFETY ZONE in the workbook:**

What will help you stay safe while riding in a car?

- 1. Will a seatbelt help you stay safe while riding in a car? (Circle the seatbelt.)
- 2. Will a fish help you stay safe while riding in a car? (Don't circle it.)
- 3. Will a ball and bat help you stay safe while riding in a car? (Don't circle it.)

# Guide the students through the MATCH ME drawings where vehicles or sports are matched with their safety equipment. Have them point to each image in the green area as they are discussed.

We've learned about unsafe or dangerous things. Now let's learn about things that can help make you safer. Follow along by pointing to each picture as we talk about them.

- 1. If you are playing baseball, what will protect your head from being hit by a ball? Draw a line to the baseball helmet.
- 2. If you are riding a bike, what will protect your head if you fall? Draw a line to the bicycle helmet.
- 3. If you are playing football, what will protect your body and head? Draw a line to the helmet with shoulder pads.
- 4. If you are riding in a boat, what will help you float if you fall in the water? Draw a line to the lifejacket.
- 5. If you are riding in a car, what will help keep you safer? Draw a line to the seatbelt.



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# **Emergencies**

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# Guide the students through identifying real emergencies.

- 1. Does everyone know what an emergency is?
- 2. If your brother or sister falls and can't get up, is that an emergency? Yes.
- 3. If your house is on fire, is that an emergency? Yes.
- 4. If a stranger tries to get into your house, is that an emergency? Yes.
- 5. Can you think of other emergencies?
- 6. If you get a little scrape on your elbow, is that an emergency? No, but you will want to get some first aid treatment for it.
- 7. If your dog or little brother or sister behaves badly, is that an emergency? No, but you will want to let your parents know what happened.
- 8. Can you think of something else that is NOT an emergency?

Know what is and is not an emergency!

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#### Guide the students through dialing 9-1-1 in an emergency.

Do you know what to do if there is an emergency? Dial 9-1-1. Has everyone heard of 9-1-1? It is a special phone number that will get you help in an emergency.

Let's practice dialing 9-1-1 on the telephone touch keys.

NEVER dial 9-1-1 in play or as a joke. It is only to be used in an emergency.

Practice saying your address and phone number with your family at home. Ask your family to write down your address and phone number to place near the phone in case you have an emergency.

#### Fire

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# Guide the students through thinking about a fire escape route for their bedroom in their home.

Every family should know what to do in case of fire. You can start by making a floor plan of your home. Think of a good place for everyone in your family to meet. Take this workbook home and discuss a plan with your family. Draw your plan out in the space provided on the page. Practice your escape route once a month!

#### Signs

# Guide the students through thinking about signs that they may see around school, home or out with their family.

It is important to look both ways before you cross the street. Cross only on the "WALK" sign. KNOW your signs! Here are some signs you should get to know:

- 1. What does the yellow house looking sign with people walking on it mean? (School crossing.)
- 2. What does the many-sided red sign with the word STOP on it mean? (To stop.)
- 3. What does the round yellow sign with an X and two R's on it mean? (Railroad Crossing)
- 4. What does the square blue sign with an H on it mean? (Hospital)
- 5. What does the yellow diamond shaped sign with a bicycle on it mean? (Bicycle Crossing.)
- What does the square green sign with a bicycle with a circle and a crossbar over it mean? (No Bicycles.)
- 7. What does the upside down triangle sign that is red and white mean? (Yeild)
- 8. What does a red, green and yellow light mean? (Traffic light that changes signals.

# **Safety Review**

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# Guide the students through thinking about safety and emergency procedures in the home.

How can you be safe at home?

- 1. Do you and your family know how to get out in case of fire?
- 2. Crawl under smoke, never stand up.
- 3. Do your parents test your smoke alarms?
- 4. Be careful in the kitchen and bathrooms.
- 5. Do you have a mat or stickers in your bathtub?
- 6. Never plug anything in near water!
- 7. Are cleaners and poisons put away?
- 8. Do not put anything near the stove burners.
- 9. Pick up your toys and put them away.
- 10. Do you know how to call 9-1-1 for help?
- 11. Do you know your Mom or Dad's work number?

Can you think of other ways to be safe at home?

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# **Healthy Foods**

# **Read the following aloud to the students:**

It is very important to eat a variety of good foods each day. Good foods give you vitamins and minerals to grow up strong and healthy. They also give you energy to run and play and do all the other things you like to do.

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# Guide the students through learning about HEALTHY FOODS in the workbook.

Does anyone know what you need to grow and stay healthy? Look at the pictures and circle the one that answers that question.

1. Does a balanced meal help you grow and stay healthy? (Circle the balanced meal.)

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- 2. Does a flower help you grow and stay healthy? (Don't circle it.)
- 3. Does a bell help you grow and stay healthy? (Don't circle it.)

To stay healthy, you should eat different kinds of healthy foods everyday, but some of us eat too many unhealthy foods like candy bars, french fries, chips and sweet cereals. Unhealthy foods, like junk food, fill you up, but don't give you enough vitamins and minerals. It is up to you... make healthy choices... eat good foods every day.

# Gather pictures of food from magazines, empty food boxes and labels or actual foods to display in class. Show a wide variety of healthy and unhealthy foods. Hold up each food example and ask the students which is a healthy food and which is an unhealthy food. Have them discuss their choices.

Some examples would include the following: Healthy Foods

- Fresh fruits, vegetables and juices
- Canned and frozen vegetables, plain and without sauces
- Broiled, baked or roasted lean cuts of meat and fish (No fish or poultry skins)
- Lean, turkey or chicken products like turkey hotdogs
- Peanut Butter

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- Whole grain breads like whole wheat, rye and bran
- Pastas, noodles and rice
- Cereals like granola and oatmeal
- Lowfat milk, lowfat cheeses, lowfat yogurt, and ice cream in small amounts

#### Unhealthy Foods

- Fried vegetables like okra and french fries or potato chips
- Vegetables in thick, salty sauce
- Fruit snacks with low fruit content and lots of sugar
- Fried meat of any kind, fried fish or fatty meat like marbled steaks, bacon, ham, bologna and regular hot dogs
- White, non-enriched bread (especially with butter), very sweet cereals, white biscuits and other fried snack foods.
- Ice cream treats with a lot of chocolate and artificial ingredients and candy

# **The Food Mart**

#### Guide the students through THE FOOD MART in the workbook.

You can help your family choose the best foods to give you energy. Pretend you are in a grocery store. What healthy foods would you select for the most energy? Circle the ones you choose.

Look at each shelf of food.

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- 1. On the first shelf, what foods do you think will give you the most energy? (Circle apples, bananas and milk.)
- 2. On the second shelf, what foods do you think will give you the most energy? (Circle peanut butter, rice and bread.)
- 3. On the third shelf, what foods do you think will give you the most energy? (Circle cheese, meat, yogurt and corn.)
- 4. Draw your favorite foods on the bottom shelf in the book.

What are some foods you like? Are these foods healthy or unhealthy? Can you guess which food group on your Food Plate they belong with?

Here are some good eating habits to remember:

- Enjoy plenty of whole grains, fruits and vegetables.
- Eat moderate portions. If you keep portion sizes reasonable, it's easier to eat the foods you want and stay healthy.
- Eat regular meals. Skipping meals can lead to out-of-control hunger, often resulting in overeating. Snacking between meals can help curb hunger, but don't eat so much that your snack becomes an entire meal.

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It is up to you... make healthy choices... eat good foods every day!



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# **Your Nose**

# **Read the following aloud to the students:**

Along with your mouth, you breathe in air through your nose. Our nose actually connects to the back of your mouth where air then goes down your throat and into your lungs. When you breathe air out, it can go back out of your mouth or nose.

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# Guide the students through learning about their NOSE in the workbook.

Think of some things in the air that your nose might filter out. Can you name some of them? Look at the pictures and circle the things that your nose would filter out of your lungs.

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- 1. Will your nose filter dust? (Circle the dust.)
- 2. Will your nose filter pollen? (Circle the pollen.)
- 3. Will your nose filter a football? (Don't circle it.)

Your nose tells you if something smells good or bad. Ever smelled rotten eggs or a pie baking? Your nose told you what those smelled like. Look at the pictures and put an X on the things that smell bad and put a circle around things that smell good.

- 1. Does the car exhaust smell good or bad? (Put an X over the car exhaust.)
- 2. Does the flower small bad or good? (Circle the flower.)
- 3. Does the trash smell bad or good? (Put an X over trash.)
- 4. Does the pizza smell good or bad? (Circle the pizza.)
- 5. Do dirty tennis shoes smell good or bad? (Put an X over the dirty tennis shoe.)
- 6. Do cookies baking smell bad or good? (Circle the cookies.)

Your sense of smell also warns you of danger. It tells you if there is a fire or if you are eating rotten food that will make you sick.



# **Your Mouth**

# **Read the following aloud to the students:**

Your mouth helps you speak. Sound comes from your vocal chords in your throat. Your tongue and your lips help form these sounds into words.

Your mouth is also where you feed your body fuel! Your teeth tear and chew the food. Your lips help keep the food neatly in your mouth. Your tongue tastes the food and helps move your food to your throat to swallow.

## Guide the students through learning about their MOUTH in the workbook.

Your tongue tells you if foods taste sweet, salty, sour or bitter. Let's look at the picture of the tongue and taste areas. Your tongue is divided into areas that can sense each of these tastes: sweet on the end, salty on the sides at the middle, sour on the sides in the back and bitter in the middle.

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Think of some things that you have tasted that are bitter, sour, sweet and salty. Can you name some of them?

Look at the pictures and match the food item with how it tastes. Draw a line between them.

- 1. Does dark chocolate taste bitter, sour, sweet or salty? (Draw a line to the word "bitter".)
- 2. Does a pickle slice taste bitter, sour, sweet or salty? (Draw a line to the word "sour".)
- 3. Does bubble gum taste bitter, sour, sweet or salty? (Draw a line to the word "sweet".)
- 4. Does a pretzel taste bitter, sour, sweet or salty? (Draw a line to the word "salty".)

# Guide the students through brushing and flossing correctly. Bring in a toothbrush and some floss

## to demonstrate.

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Remember, brush and floss your teeth everyday to keep them clean and strong! Here is how you brush correctly:

- 1. Place the bristles along the gums at an angle. The bristles should contact both the tooth surface and the gums.
- 2. Gently brush the outer tooth surfaces by rolling the brush up and down.
- 3. Gently brush using a back, forth, and rolling motion along all of the inner tooth surfaces, biting surface and tongue.
- 4. Tilt the brush vertically behind the upper and lower front teeth. Make several up & down strokes using the front half of the brush.

Here is how to floss correctly:

- 1. Hold a piece of floss between thumbs and index fingers.
- 2. Use thumbs to guide the floss between upper teeth. Slide floss up and down against the tooth surface and under the gumline. Floss each tooth thoroughly with a clean section of floss. This has to be done GENTLY or you can damage your gums.

## **Read the following aloud to the students:**

It is important for you to protect your mouth and teeth!

- Use a mouth guard when playing sports that come in contact with others or where you have the potential of falling, such as football, basketball, soccer, and skateboarding.
- Be sure to visit your dentist and brush twice a day.
- Brush your teeth for at least 2 minutes each time.
- Use a soft brush so it is gentle on the gums and remember to change your brush every 3 months or sooner if you get sick.
- Use fluoride toothpaste to help strengthen the enamel on your teeth.
- Floss floss floss, but have your parents help you.



# **Your Eyes**

## **Read the following aloud to the students:**

Your eyes and your brain work together to tell you about the world around you.

Your eyes sit in a little hollow areas in your skull, where it is protected by the eyelid. The eyelid helps keep the eye clean by opening and shutting several times a minute. This is called blinking. Eyelashes keep dirt and other unwanted stuff out of your eyes.

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# Guide the students through learning about their EYES in the workbook. Have several small mirrors available and a 6 dot Domino or dice cube.

The color of your eyes can be different from the color eyes of your friends. It is passed down through your family much like the color of your hair. Look at the color of eyes of those seated around you.

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- 1. Color the eyes on the image the same color as your own eyes.
- 2. Color the other eye the color of one of your friends.
- 3. Are the two eyes you colored the same or different?

With your eyes, you can see near and far – light and dark – black, white & colors – and all different kinds of shapes.

Use your eyes in to help you color the picture with different shaped items.

- 1. What color would the round button be? (Color it red.)
- 2. What color would the Christmas tree in the shape of a triangle be? (Color it green.)
- 3. What color would the square box be? (Color it blue.)
- 4. What color would the round ball be? (Color it red.)
- 5. What color would the square picture frame be? (Color it blue.)
- 6. What color would the party hat in the shape of a triangle be? (Color it green.)

Sometimes you can't see well, and you need glasses to see.

1. Draw a pair of glasses on Trek.

Close your eyes for a moment and imagine what it would be like if you could not see at all. You would have to learn about the world with your other senses.

If you could not see, you would learn to read and write by using a special alphabet called Braille. It uses dots for letters. The dots are arranged much like they are on a domino or on dice only the dots are raised instead of indented so that you can feel them. Each letter in the alphabet has its own arrangement of these dots. For instance, the letter "A" just uses one dot of the six.

1. Think of some places that you have seen Braille letters. Can you name some of those places?

## **Read the following aloud to the students:**

It is important to protect your eyes!

- Wear goggles in classes, where debris or chemicals could go flying, such as wood shop, metal shop, science lab, or art.
- Wear eye protection when playing racquetball, hockey, skiing, or other sports that could injure your eyes.
- Wear sunglasses. Too much light can damage your eyes and cause vision problems.



# **Your Ears**

# **Read the following aloud to the students:**

Your ears allow you to hear sounds all around you! You can hear sounds that are soft, like a whisper. You can hear sounds that are loud, like thunder. You can also hear sounds that are low pitched, like a bass drum or sounds that are high pitched, like a whistle.

# Guide the students through learning about their EARS in the workbook.

Can you name some things you hear at home? Can you name some things you hear at school on the playground?

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Look at the pictures of different items and circle the ones, that if they were real, you could hear.

- 1. Can you hear a pretzel? (Don't circle it.)
- 2. Can you hear a phone? (Circle the phone.)
- 3. Can you hear a whistle? (Circle the whistle.)
- 4. Can you hear cookies baking? (Don't circle them.)

Some sounds are too loud and can hurt your ears. Look at the pictures and put an X over the one that makes a loud sound.

- 1. Is rain a soft or loud noise? (Don't put an X.)
- 2. Is a balloon popping a soft or loud noise? (Put an X over it.)

Some animals, like dolphins and elephants, have better hearing than humans.

# Be prepared to spell out several names in the class using sign language.

Now, imagine if you couldn't hear at all! Sign language allows the deaf and the hard of hearing to communicate. Hand signals are used to form letters of the alphabet or words. Look at the hand signal that is used for the letter "A". (You can teach each letter of the alphabet.) Now I'll try to spell out a few names in class using sign language. You can follow along, but it takes a while to get the hang of it.

# **Read the following aloud to the students:**

It is important to protect your ears!

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- Cover your ears when you hear very loud noises.
- Cover your ears where loud machines are operating. For example around airplanes or construction sites.
- Don't listen to loud music or television. Keep the volume at the lowest level you can hear.





# **Your Skin**

# **Read the following aloud to the students:**

Your skin protects your body from the outside world. It helps keep out harmful germs, and it makes sure you stay warm or cool. You have hair all over your skin, except on your lips,palms and the soles of your feet.

Your skin covers and protects everything inside your body. Without skin, people's muscles and bones, would not be held in place. Skin also protects us from getting hurt, lets us feel things, and more.

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# Guide the students through learning about their SKIN in the workbook.

It is important to protect the skin that protects YOU! The sun's rays can damage your skin. Let's help Rip on his day at the beach. Circle what he needs to take with him to protect his skin and eyes from the sun's harmful rays.

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- 1. Will Rip need a beachball? (Don't circle the beachball.)
- 2. Will Rip need a radio? (Don't circle it.)
- 3. Will Rip need sunglasses? (Circle the sunglasses.)
- 4. Will Rip need an umbrella? (Circle the umbrella.)
- 5. Will Rip need sunscreen lotion? (Circle the sunscreen lotion.)

Your sense of touch is through your skin. It tells you if there is a bug on your hand or a rock in your shoe. You can feel things that are hot, cold, hard, soft, rough, smooth, wet, dry, slimy and sticky.

Match the object with the word it might feel like.

1. Is fire hot or cold? (Hot.)

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- 2. Is snow hot or cold? (Cold.)
- 3. Is hot chocolate hot or cold? (Hot.)
- 4. Is ice hot or cold? (Cold.)
- 5. Is a marshmallow hard or soft? (Soft.)
- 6. Is a rock hard or soft? (Hard.)
- 7. Is a plush toy hard or soft? (Soft.)
- 8. Is a road hard or soft? (Hard.)
- 9. Is a drinking glass rough or smooth? (Smooth.)
- 10. Is tree bark rough or smooth? (Rough.)
- 11. Is a rock rough or smooth? (Rough in the picture, but some can be smooth.)
- 12. Is a mirror rough or smooth? (Smooth.)
- 13. Is a tub of water wet or dry? (Wet.)
- 14. Is a desert wet or dry? (Dry.)
- 15. Is a dog taking a bath wet or dry? (Wet.)
- 16. Is a dog not taking a bath wet or dry? (Dry.)

# **Read the following aloud to the students:**

Treat your skin right!

- Always wear sunscreen when you are outdoors.
- Wash your skin with lots of water and mild soap.
- Cover scrapes and cuts with a bandage.

Know the Sun:

- The sun's rays can come through the clouds on an overcast day.
- The sun's rays are strongest between 10 a.m. to 4 p.m.

The sun's damaging UltraViolet rays can bounce back from sand, snow and concrete.

# Germs

# **Read the following aloud to the students:**

Germs are tiny living things that can cause us to get sick. They are too small for you to see them, but they are everywhere! They are in the air and can get into your body when you breathe. They usually get into your body through your eyes, nose or mouth when you touch your hands to your face. You can also get germs in your body through cuts in your skin.



# Guide the students through learning about GERMS in the workbook.

You can't stop germs completely from getting on you and giving you an occasional cold, but you can make it harder for them to get to you. Most germs are spread through the air in sneezes, coughs, or simple breaths, or they mix in sweat, spit, or blood. How can you help keep germs away?

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- 1. Keep your hands clean. Wash your hands with soap and water. Wash your hands every time you cough or sneeze, before and after you prepare foods or use the bathroom, after you handle money, and after you visit a sick relative or friend.
- 2. Keep crayons, pencils and other things out of your mouth.
- 3. Keep your hands away from your eyes, nose and mouth.
- 4. Cover your nose and mouth with a tissue to keep from spreading germs when you sneeze.
- 5. If you don't have a tissue cough into your arm or shoulder not your hand.
- 6. Use tissues to contain your sneezes and sniffles.

How can you keep germs away? Draw a line to the picture that fits the sentence.

- 1. Keep your hands clean. Wash your hands with soap and water. Does that fit with the boy with a pencil in his mouth? (No.) Rip with the hand in his mouth? (No.) The hands that are washing? (Yes.)
- Keep crayons, pencils and other things out of your mouth. Does that fit with Rip with his hand in his mouth? (No.) The hands that are washing? (No.) The boy with a pencil in his mouth? (Yes.)
- 3. Keep your hands away from your eyes, nose and mouth. Does that fit with boy with a pencil in his mouth? (No.) The hands that are washing? (No.) Rip with his hand in his mouth? (Yes.)



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# **Your Heart & Lungs**

# **Read the following aloud to the students:**

Lub-dub. That's the sound of your heart beating. With each beat, your heart pumps blood to all parts of your body and then back to your heart. Your blood provides your body with the oxygen and nutrients it needs, and carries away the waste your body needs to get rid of. Blood travels in blood vessels. Blood vessels are like the water pipes that carry water into your house.

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## Guide the students through learning about their HEART in the workbook.

Your heart is made of muscle. When you exercise, it makes your heart muscle stronger. Your heart beats faster when you exercise and slows down when you are resting or asleep.

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- 1. When Rip is exercising, is his heart beating slow or fast? (Fast.)
- 2. When the boy is sitting around, is his heart beating slow or fast? (Slow.)
- 3. Who's heart do you think is beating faster: Rip exercising or the boy sitting and watching TV? (Circle Rip.)

Outline your fist in the space provided on the page. That is about the size of your heart. As you grow, your heart will grow too.

# **Read the following aloud to the students:**

Take care of your heart!

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- Don't smoke! The chemicals and smoke can damage your heart.
- Exercise is great for your heart. As you pump more blood by exercise or play, the stronger your lungs become and better at supplying your body with oxygen.

Your lungs help you breathe. They are in your chest underneath your ribs. First you breathe in air through your nose and mouth. The air travels down your windpipe into your lungs. The lungs take the oxygen from the air you breathe in.

## Guide the students through learning about their LUNGS in the workbook.

When you exercise, you also take in more oxygen or air. Look at Rip exercising and the boy sitting again. Who do you think is taking in more oxygen? (Rip.)

You can keep your lungs healthy by running and playing. Smoking hurts your lungs and can cause them to not work the way that they should.

## **Read the following aloud to the students:**

Take care of your lungs!

- Don't smoke! The chemicals and smoke damages your lungs.
- If you work with chemicals or have allergies, make sure to wear a protective mask.
- Exercise is great for your lungs and heart. As you breathe more deeply as you exercise or play, the stronger your lungs become and better at supplying your body with oxygen.

Your heart and lungs work together. Your lungs gather oxygen by inhaling air into your body. Your heart moves the oxygen to all the places that need it in your body. Your lungs then remove used air out of your body. It's teamwork! Can you think of other things that work together? (An example is two people on a see-saw.)

# **Your Brain**

# **Read the following aloud to the students:**

Your brain controls everything you do. It helps you move, sit and sleep. It helps you do things like breathe, laugh and cry. Nerves carry messages from your brain to your body like a telephone line.

# Guide the students through learning about their BRAIN in the workbook.

Color the pictures of activities for which your brain is responsible.

- 1. Are you using your brain when you play football? (Yes.)
- 2. Are you using your brain when you are dancing? (Yes.)
- 3. Are you using your brain when you are jumping rope? (Yes.)
- 4. Are you using your brain when you are skateboarding? (Yes.)

# **Making Sense**

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# **Read the following aloud to the students:**

Your brain controls your five senses: Sight, Smell, Touch, Hear, and Taste.

# Guide the students through learning about their SENSES in the workbook.

Draw a line from each Sense to its matching body part on the drawing.

- 1. Does your ear see, smell, touch, hear or taste? (Draw a line to hear.)
- 2. Does your tongue see, smell, touch, hear or taste? (Draw a line to taste.)
- 3. Does your eye see, smell, touch, hear or taste? (Draw a line to see.)
- 4. Does your nose see, smell, touch, hear or taste? (Draw a line to smell.)
- 5. Does your finger or hand see, smell, touch, hear or taste? (Draw a line to touch.)

# **Read the following aloud to the students:**

While your brain is physically protected by your skull, you still have to take good care of your brain!

- Eat good foods.
- Exercise!

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- Get enough sleep.
- Always wear a helmet when playing sports or riding your bicycle, skating or riding a scooter.

Don't drink alcohol, take drugs, or use tobacco!



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# **Teacher's Guide for 3, 4, 5 Activity Book**

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# BOOK A C Y 101 Th Name:

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# **Your Body & You!**

There are many things that make each individual unique: fromeach cell to genetics passed down determining hair, eye color, skin color and height. No matter what we look like on the outside or inside, it important to take care of our bodies!

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- Cell
- Energy
- Growth
- Hygiene
- Traits
- Heredity



# **Workbook Activities**

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Introduce Trek and Rip as the student guides for BodyTrek. Read along in the workbook with the students. Ask them to complete activities as you come to them or after you have finished the classroom discussion.

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Are you ready for an adventure? While everyone's body is similar, you are an amazing and unique individual. So come on, join the fun. Let's learn what makes you work – and you – YOU!

A brick wall is built much like how cells build all the parts of your body. Single cells are joined with other cells to create parts of your body such as muscle, bone, skin and nerves.

Can you name other items, like bricks, that are used to build things with? (i.e. toys, rocks, etc.)

Color the pictures of the cells.

Your body works sort of like a car. Both get energy from fuel. For a car, the fuel is gasoline. For humans, the fuel is food. This energy makes your body move using its muscles, like the car uses its engine. Your brain controls your body just like the steering wheel and pedals control the car. Both have frameworks and both need protection. A car has its frame and body panels and you have your bones and skin!

Many things affect how you grow. Some you can control such as eating the right foods, exercising, getting plenty of sleep, practicing good safety habits, practicing good hygiene and avoiding bad habits such as smoking, drinking and drugs.

Some things you can't control, such as your height and hair color. They are called traits. Traits are determined by heredity. Heredity means the passing on of traits from one generation to the next. Are your parents both tall? You probably will be, too.

People come in all sizes – large, medium and small. Yet we all have the same kind of body. Inside, all the parts work together. If you take care of it, your body will continue to work well; year after year.

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# **Discussion**

Discuss the many different ways students can help their own growth.

- Eat the right foods. Examples: eating fruits and vegetables, do not eat a lot of sugar and salt, avoid fatty and fried foods, and eat three good meals every day.
- Get plenty of sleep. Sleep gives the body a chance to rest. Most children need 9 or 10 hours of sleep each night.
- Exercise. Daily exercise is important to keep the body growing and healthy. Exercise will help the heart, lungs, and muscles work better. Examples: Ride a bicycle, play a game outside instead of watching television.

# **Classroom Activities**

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Conduct a class discussion using the information in the chart.

- 1. In what ways do you look like others in your family? In what ways do you look different?
- 2. Do you look like your friend?

Explain to the students that they cannot control the color of their eyes, skin, hair, or how tall they will be. These things are hereditary. They are able, however, to control other things about their lives, such as their health habits and what they like to do in their spare time. They may not look like their friends, but they can choose the same hobbies.

	Father	Mother	Brother	Sister	Friend
Height					
Color of Eyes					
Color of Hair					
Hobby					
Favorite Animal					

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# **Your Bones**

# Introduction

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Bones are the framework for the body. It is important to protect this framework from injury so that there are less problems in aging.

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# Terms to Know

- Skeleton
- Posture
- Calcium

# **Workbook Activities**

Read along in the workbook with the students. Ask them to complete activities as you come to them or after you have finished the classroom discussion.

Your skeleton is made of hard bones that create a frame that supports all your other systems. Bones also give your body shape. Your muscles, make you move and are attached to your skeleton. Adults have 206 bones that make up their skeleton. That is a lot of bones!

Circle the items that help make your bones strong. (Milk, Cheese, and Yogurt)

Try to stand correctly, like Trek. Head up, shoulders back, and chest high.

Now stand bent over, like Rip. See and feel the difference?

It is important to have good posture.

Don't forget you need to sit correctly too!

Protect your back! Your spine is truly the backbone of your whole body. Be careful how you lift heavy items. Be sure you bend your knees when you lift heavy items.

Put an X over the incorrect way to lift a heavy item. Circle the correct way.

# **Discussion**

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Explain that calcium is a very hard mineral that helps make teeth and bones strong. Calcium comes from things we drink and eat such as milk, yogurt, cheese and leafy green vegetables.

# **Classroom Activities**

Why is it important to keep giving our bones calcium to use? Experiment with bones that have kept or have lost their calcium.

#### **Calcium in Bones**

Materials needed:

- 2 chicken leg bones, cleaned
- 1 large jar of white vinegar
- 2 jars large enough to hold the bones, with lids

#### Procedure:

- 1. Put a chicken leg in each jar.
- 2. Tighten the lid on one jar.
- 3. Pour vinegar to cover the leg in the second jar and tighten the lid.
- 4. Wait at least one week and remove the bones from the jars. Compare them by trying to bend each bone.

#### **Results:**

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1. How is the bone that still has calcium different from the bone that lost its calcium (that was soaked in vinegar)?

#### **Conclusions:**

1. Why is it important to have calcium in our bones? What might happen if you didn't have enough calcium in your diet?





# **Your Muscles**

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## Introduction

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Muscles make a body move or function. It is important to protect bones from injury and exercise muscles to maintain peak performance.

# **Terms to Know**

- Involuntary
- Voluntary
- Aerobic

## **Workbook Activities**

Read along in the workbook with the students. Ask them to complete activities as you come to them or after you have finished the classroom discussion.

You have muscles all over your body.

Muscles are like strong rubber bands that help things work in your body or make you move. Your brain sends a signal to your muscles to move. They contract or get shorter and pull on the bones. Your bones move and then you move!

In fact, you have about 650 muscles in your body. You even have muscles in your face! Muscles make up about half of your body's weight. So if you weigh 50 pounds, about 25 pounds is muscle!

Some people can't run or jump because they cannot use their legs, and others can't use their arms. They can build up the muscles that they can use.

Some muscles you can control, and some you can't. Your heart beating or your throat swallowing are muscles that move without you even thinking about them. Those are called "involuntary" muscles. But if you want to pick up a ball and throw it, or step on pedals to stop and go, those are muscles that you can control and are called "voluntary" muscles.

Circle the movements that you can control. (Lips Smiling, Foot Kicking, Hand Holding, Running)

#### **Exercise**

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Exercise is great for all your muscles and especially your heart. It pumps more blood when you exercise or play. The stronger your heart and lungs become the better at supplying your body with oxygen.

Have some aerobic fun at least four days a week for a minimum of 30 minutes each day. Aerobic exercise is exercise that strengthens your heart such as swimming, running, fast walking, biking, roller skating, fast dancing and jumping rope. Choose activities that you enjoy and get your heart pumping. Always remember to begin your activity with a warm up and end it with a cool down.

#### **Reach Like an Eagle**

- 1. Sit on the floor with your legs wide apart.
- 2. Slowly bend your head forward toward the floor.
- 3. As you bend, grasp your ankles and pull yourself down. Be sure to keep your knees bent.
- 4. Stay bent down to the count of five.
- 5. Slowly sit up and reach arms up.
- 6. Repeat two or three times.

#### Walk Like a Monkey

1. Stand up straight with your feet together. Bend over and put your hands flat on the floor.

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- 2. Bend your knees slightly.
- 3. Now, walk around like a monkey. Be sure to watch where you are going!
- 4. Slowly stand up. Keep your knees bent as you come up.

#### **Stretch Like a Cat**

- 1. Kneel down. Put your hands in front of you.
- 2. Raise your right knee until it touches your right ear Hold it there to the count of five.
- 3. Now stretch your right leg back as far as you can. Stretch it just as a cat would stretch. Count to five.
- 4. Return to the kneeling position.
- 5. Repeat using your Left leg.

#### Swing Like an Elephant

- 1. Stand up straight with your hands together.
- 2. Slowly bend down as far as your leg muscles will let you. Keep your knees bent slightly.
- 3. Let your arms swing free. Now, walk around like an elephant. Stand up straight when you finish your walk.

#### Discussion

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Teach students the difference between aerobic exercise and anaerobic exercise.

- 1. An aerobic exercise is an exercise during which the heart and lungs are able to supply all the oxygen the working muscles need.
- 2. An anaerobic exercise is an exercise in which the muscles are so highly exerted the heart and lungs are not able to keep up with the oxygen demands of the working muscles. Purely anaerobic exercise cannot last more than a minute or two.

Discuss exercises that are better for keeping the heart healthy (cardiovascular fitness) and ones that are better for building muscles and strength.

1. Cardiovascular fitness is improved by exercises that elevate the heart for an extended period. Examples: swimming or running a long distance, jumping rope, biking and skating.

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 Muscular strength is improved most by exercises that require short periods of strenuous effort followed by periods of rest. Examples: weight lifting, pull-ups, sprinting, tennis and volleyball.

#### **Classroom Activities**

Start an exercise point system for one month to encourage the students to participate in regular exercise. The students can help you design the system.

For example:			
Walking to school	2 points	Tennis	2 points
Riding a bicycle to school	2 points	Volleyball	1 points
Walking home from school	2 points	Softball/Baseball	1 points
Riding a bicycle home from school	2 points	Soccer	2 points
Swimming	2 points	Walking the dog	1 points
Jumping rope	2 points		

For students who ride in a bus or car to school, help them find other activities they can do after school. Adjust the point system accordingly for a physically challenged child. The class may want to work as individuals or as teams. Consider working with the students' physical education teacher to promote activities for which they will receive points and encouragement to participate. You may want to initiate competition between classrooms. Have a special celebration at the end of the competition – include healthy activities and snacks!

# **Safety Zone**

# Introduction

Good habits are important for a body's growth and good health. Good habits are also important for safety. Accidents can be prevented. Plan ahead. Everyone should learn to obey safety rules and know what to do in an emergency.

# Terms to Know

- Environment
- Emergency

#### **Workbook Activities**

It is important to learn how to stay safe in any environment.

Learn the things in your home that are unsafe and then stay away from them!

#### **Safe or Unsafe**

Safety equipment helps make unsafe things safer. Here is some of the safety equipment that might make YOU a little safer.

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Draw a line from each picture in the green area to the safety equipment that it belongs with in the orange area. (seatbelt/car, life jacket/boat, helmet/bat, helmet/bike, and helmet & pads/football)

Circle the items that are unsafe in the house. (outlet, banana peel, poison, hot water, match or fire, and appliances near water)

#### **Emergencies**

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Learn what an "emergency" is and what to do in an emergency!

List 4 emergencies. (i.e. house fire, stranger coming in house, etc.)

What is the number to call in an emergency? (911)

What two things do you need to know to tell the operator? (address & phone number)

#### Fire

Every family should know what to do in case of fire.

You can start by making a floor plan of your home in the square below. Draw a BLUE line from your bed to the fastest way to get outside. Draw a RED line that shows another way to get outside.

Think of a place to meet and list it.

Discuss this plan with your family. Practice your escape route once a month! Kind of like fire drills you practice at school.

#### **Signs**

It is important to look both ways before you cross the street. Cross only on the "WALK" sign.

KNOW your signs! What does each of these signs mean?

#### Stop



Bicycle Crossing No Bicycles Railroad Crossing School Crossing Hospital Traffic light

#### **Safety Tips**

#### Car Safety

Sit in the cab of a pickup truck. Never ride in the truck bed. It is too dangerous!

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- Always use a seat belt and sit in the back seat of a car.
- · Keep your head, feet and hands inside the car.

#### Walking Safety

- Look both ways before crossing the street.
- Obey traffic signals. Cross on the "walk" sign.
- Always walk facing traffic.
- Wear light colored clothing.
- Walk on the sidewalk when possible.

#### Bike Safety

- Always wear a bicycle helmet to prevent head injuries.
- Ride only on streets without heavy traffic. Ride in the same direction as the flow of traffic, not against the flow of traffic.
- Obey all traffic rules and signs. Learn hand signals for turning and stopping.
- Only one person should ride on the bike at one time.
- Don't ride after dark.
- Walk your bike across busy street crossings.

#### Sun Safety

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- Wear sunscreen to protect your skin from the sun's harmful rays.
- Apply sunscreen before you swim and reapply it often as you swim or play in the sun.

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Wear a hat to add extra protection to your face when you are in the sun.

#### Water Safety

- Stay away from water unless you can swim and have adult supervision.
- Use the buddy system. Always swim with someone.
- Get out of the water when a storm is coming.
- If you get tired while swimming, relax and float on your back.
- Always wear a life jacket when riding in a boat.

#### Personal Safety

- Stay away from strangers. Never get into a stranger's car or accept things from people you don't know.
- Learn what to do in an emergency. Pay attention during fire and tornado drills.
- Learn your address and phone number in case you need to call 9-1-1 in an emergency.
- Use common sense. If something seems dangerous or risky to you, you probably shouldn't

do it.

## **Discussion**

Discuss the things that are important to know and to do in the event of an accident or injury.

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- 1. Stay calm.
- 2. Get help.
- 3. Write emergency numbers on or near the phone.
  - Police and Fire departments
  - Poison Control Center
  - Parents' Work Places
  - Family Doctor
  - Neighbor
- 4. If you don't know the emergency numbers, dial 9-1-1. Describe the emergency and give your name and address.
- 5. Be prepared for fire.
  - In case of a fire, your family should have a practiced plan for leaving the house quickly. There should be an assigned meeting place outside.
  - Someone in the family should be assigned to go to a neighbor's house to call the fire department.
  - Install a smoke detector and remember to change the batteries every 6 months. Check once a month. Check smoke detector batteries once a month and change the batteries every 6 months.
  - Have a fire extinguisher. Remember that fire extinguishers are not toys.
  - If your clothes catch fire, roll up in a blanket or roll on the ground to put out the flames.

# **Classroom Activities**

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Have the students prepare themselves and others for an emergency.

1. Have the students draw their own safety posters using a section from the Safety Rules. Have a Safety display outside the classroom or have the students present safety rules to a younger class and discuss the importance of them.

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2. Have the students make a chart for emergency phone numbers and other information including their address and home phone number. Explain that in an emergency situation, they may not remember numbers or other information. Have them post the charts near phones at home.





Terms to Know

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Nutrition

Nutrients

**Proteins** Carbohydrates

Vitamins Minerals

Calories

Fats

# Nutrition

### Introduction

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A simple approach to good nutrition is to eat a variety of foods from each of the major food groups. Moderation, balance and variety are key elements of a healthy diet. Good nutrition fuels a body to move, think and function.

# Dairy Fruits Grains Protein

# Choose MyPlate.gov

#### **Foods to Increase**

# **Foods to Reduce**

 Make half your plate fruits and vegetables.

Switch to fat-free or low-fat

whole grains.

(1%) milk.

- Compare sodium in foods like soup, bread, and frozen Make at least half your grains meals - and choose the foods lower in numbers
  - Drink water instead of sugary drinks

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#### Workbook Activities

Nutrition is the study of food and how our bodies use the food we eat. Nutrition can influence how we look and how we feel. Our eating habits also affect our growth and our health.

Nutrients come from food during digestion. They build and maintain body tissues, regulate your body processes and supply energy.

- Proteins are necessary for growth, repair and maintenance of your body tissues.
- Carbohydrates are the ideal energy fuels for the body. •
- Fats are the most concentrated source of energy. •
- Vitamins and minerals don't provide energy, but they are necessary to keep the body running.

You get nutrients from foods including bread and other grain foods, meat and other high protein foods, milk and other dairy foods and fruits and vegetables.

These nutrients give you energy to bum. This energy is measured in calories. The foods you eat become your body's building blocks and give you energy to play.

Improper eating habits can cause a person to be overweight or underweight. Your body may not get enough nutrients if you eat too much or too little of certain foods.

It is up to you... make healthy choices... eat healthy foods every day!

#### Discussion

Review the basic food groups and the nutrients they provide.

## Milk Group

Examples: milk, cheese, cottage cheese, yogurt and ice cream, custards and puddings Nutrients:

- · Calcium for building and maintaining bones and teeth
- Protein for building and maintaining bones and teeth
- Riboflavin a B vitamin which helps the body use energy

#### Meat Group

Examples: meat, fish, poultry, dried beans and peas, nuts and nut products (peanut butter) and eggs Nutrients:

- Protein
- Iron
- B vitamins

#### Fruit and Vegetable Groups

Examples: all fruits and vegetables and their juices Nutrients:

Nutrients:

- Vitamin C good sources include citrus fruits/juices, raw cabbage, strawberries, tomatoes and broccoli
- Vitamin A for good vision and smooth, healthy skin. Good sources include dark green, orange and yellow vegetables, such as broccoli, greens, sweet potatoes, carrots and squash

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#### Bread and Cereal Group

Examples: Whole grain and enriched breads, cereal, noodles, rice, tortillas, bagels Nutrients:

Iron

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- B vitamins,
- Carbohydrates the body's most efficient source of energy

## **Classroom Activities**

Ask the students to keep a food diary for one day. Have them write down everything they eat including snacks and beverages. Have them use the food pyramid and the examples above to see what group each food is in and how many servings they need each day from each group. Have them count how many servings they ate from each food group. Discuss whether they need to eat more or less from any food groups. Discuss changes in their eating that will help them get more of the foods and nutrients they need

to grow and stay healthy.

# **Your Nose**

## Introduction

A nose has 3 essential functions as: an airway for lungs; a filter for lungs; and the center for smell.

## **Terms to Know**

- Breathe vs. Breath
- Nose Hairs
- Mucous

# **Workbook Activities**

Your nose is very important. You breathe in air through your nose. Your nose actually connects to the back of your mouth where air then goes down your throat and into your lungs. When you breathe air out, it can go back out of your mouth or nose. Your nose not only helps you breathe and helps food taste better, but your nose hairs and mucous are important filters for your lungs!

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Name 3 items that your nose filters out. (i.e., dust, pollen, blowing dirt)

Your nose knows when something smells good or bad. Your sense of smell lets you know when lunch is ready or if something is burning. It works together with your sense of taste to let you know when food tastes good or bad. When you have a cold, food may not taste as good because your sense of smell is dull.

Name 3 items that smell bad. (i.e., cigarette smoke, rotten eggs or dirty tennis shoes)

Name 3 items that smell good. (i.e., a rose or cookies baking)

Your sense of smell also warns you of danger. It tells you if there is a fire or if you are eating rotten food that will make you sick.

# Discussion

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Have the class discuss ways their sense of smell can warn them of danger. Examples: smoke, a gas leak, spoiled food.

# **Classroom Activities**

Have several items for the students to identify by smell, i.e., different foods, perfumes, herbs, etc.



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# **Your Mouth**

### Introduction

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A mouth has 4 essential functions: an airway for the lungs; a passageway for food; a place where food is processed before swallowing; and the center for taste.

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#### **Terms to Know**

- Tongue
- Taste buds
- Teeth
- Bacteria
- Plaque
- Enamel
- Decay

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Vocal Chords

#### **Workbook Activities**

Your mouth is where you feed your body fuel! Your teeth tear and chew the food. Your lips help keep the food neatly in your mouth. Your tongue tastes the food and helps move your food to your throat to swallow.

Your taste comes from taste buds in your mouth and on your tongue. Your tongue is divided into areas that let you know if foods taste sweet, salty, sour or bitter. You can taste sweet on the front of your tongue, salty on the front sides, sour on the back sides and bitter in the back.

Find the areas that will taste potato chips. Mark them with an X. Where will your tongue taste candy? Mark it with an O. Where will you taste a lemon? Mark the areas with a check mark.

List an example of food for each taste.

Sweet (candy) Sour (lemon) Salty (pretzel) Bitter (lemon rind)

Your teeth are also important to help you taste food. Your teeth help you bite, tear and chew food so your tongue can taste it. Plaque is a thin, sticky layer of bacteria that constantly forms on your teeth. Plaque breaks down the sugar in food and turns it into acid. The sticky plaque holds the acid on your teeth. The acid attacks the tooth enamel and causes tooth decay. Brush and floss your teeth every day to help keep them clear of plaque.

Your mouth also helps you speak. Sound comes from your vocal chords in your throat. Your tongue and your lips help form these sounds into words.

#### Discussion

Remember, brush and floss your teeth everyday to keep them clean and strong! Here is how to brush correctly:

1. Place the bristles along the gums at an angle. The bristles should contact both the tooth surface and the gums.

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- 2. Gently brush the outer tooth surfaces by rolling the brush up and down.
- 3. Gently brush using a back, forth, and rolling motion along all of the inner tooth surfaces, biting surface and tongue.
- 4. Tilt the brush vertically behind the upper and lower front teeth. Make several up & down strokes using the front half of the brush.

Here is how to floss correctly:

- 1. Hold floss between thumbs and index fingers.
- 2. Use thumbs to guide the floss between upper teeth. Slide floss up and down against the tooth surface and under the gumline. Floss each tooth thoroughly with a clean section of floss. This has to be done GENTLY or you can damage your gums.

Discuss what might happen if you didn't brush or floss.

# **Classroom Activities**

Have several unidentified objects for the students to taste. Blindfolds might be necessary for this activity. Ask the students to identify them by salty, sweet, sour, or bitter, and then by name. Demonstrate how taste and smell are linked by having them also hold their noses and try to identify the items.

Why is it important to brush our teeth? Simulate what would happen if you did not brush your teeth.

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#### **Tooth Decay**

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Materials needed:

- 2 eggs, uncooked
- 1 large jar of white vinegar
- 1 large jar of water
- 2 jars large enough to hold the eggs, with lids

#### Procedure:

- 1. Put an egg in each jar.
- 2. Pour water to cover the egg in one jar and tighten the lid.
- 3. Pour vinegar to cover the egg in the second jar and tighten the lid.
- 4. Explain that the eggshell of each egg is similar to the enamel on our teeth. Both are protecting what is inside of it.
- 5. The vinegar is the acid in your mouth if not brushed. The water is your mouth having been brushed and rinsed.
- 6. Allow the eggs to soak overnight.
- 7. Have the students examine the eggs carefully.

#### Results:

- 1. How have the eggshells changed?
- 2. What are the differences?

#### **Conclusions:**

- 1. What effect does acid have on teeth?
- 2. How might you keep teeth strong?
- 3. Are there any foods to avoid that will keep teeth healthier?



# **Your Eyes**

# Introduction

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Eyes are the body's windows to seeing the world. Eyes use lenses and light to focus and color an image. They send signals to the brain for interpretation of that image. When the image is fuzzy, sometimes glasses or contacts are used to correct the image. Sometimes your eyes can play tricks on you.

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#### **Terms to Know**

- optical
- braille
- pupil
- iris
- eyelid

# **Workbook Activities**

Your eyes and your brain work together to tell you about the world around you.

The eye works much like a camera. It needs light to see an image. The image then goes to your brain which learns and tells you what the image is and what colors you are seeing. You have two eyes that help you see depth of objects instead of them looking flat. Sometimes glasses or contacts are used to correct images that are fuzzy or out of focus.

When you look at something, each eye sees from two slightly different angles. The brain uses information sent by each eye to build a 3-D image and judge the distance and the shape of the object. Sometimes you eyes can fool you because of their different viewpoints. Here are three activities to prove it. They are called optical illusions.

#### **Optical Illusions**

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#### Sausage Fingers

You can turn your two fingers into a floating sausage. Hold your index fingers tip to tip about 5 inches away from your eyes. If you focus on something in the distance, a fuzzy sausage shape will appear between your fingers.

#### A Hole in Your Hand

You can see through your hand. Roll a sheet of paper into a tube. Hold it up to your right eye like a telescope. Now hold your other hand in front of your left eye, about four inches away. If you position it right, your hand will seem to have a hole in it!

#### Two for One

Put one end of a soda straw (or the eraser end of a pencil) on the tip of your nose and point it away from you. Try to focus on the far end of the straw. How many straws do you see?

#### **Braille alphabet**

Close your eyes for a moment and imagine what it would be like if you could not see. You would have to learn about the world by your other senses, especially hearing and touch. You might learn to read and write by using the Braille alphabet, a collection of raised dots arranged to form letters. By moving your fingers across the raised dots, you would be able to read.

See if you can write your name below according to the Braille alphabet.

# **Discussion**

Discuss the optical illusions.

Ask the children if they know someone who is blind. Ask them how best to relate to someone who cannot see, i.e. with courtesy and respect, not staring or making fun, perhaps offering help if they think a person needs it.

Explain that most eye problems can be corrected. People who have trouble seeing objects clearly usually wear glasses or contact lenses. Ask students who wear glasses or contact lenses to share with their classmates what their vision was like before they got glasses or contact lenses.

### **Classroom Activities**

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If possible, have examples of Braille, or a book written in Braille for the students to and feel the raised letters.

Look and Do! Students will have to concentrate on their sense of sight in order to do! Write on a blackboard this key: 1= snap finger 2= clap hands 3= stomp foot 4= wave 5= turn around 6= jump

Next roll two dice and write the sequence down on the blackboard next to the key. For example: 2, 5. The students will have to clap their hands and then turn around in the example. The game can be repeated eliminating students until there is one left. Signal an end to each round. A sequence of three dice and numbers can be used as well. Students should realize that it takes a good pair of eyes (and some concentration) to win the game!





# **Your Ears**

# Introduction

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Ears are responsible for collecting sounds and sending signals to the brain for interpretation of those sounds.

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# **Terms to Know**

- Sound waves
- Ranges
- Cochlear

# **Workbook Activities**

Your ears allow you to hear sounds all around you!

Sound waves come through the air to your ears, which capture them. The waves then enter your ear which turns them into a sound message that goes into your brain.

Some sounds can be too loud and can hurt your ears.

What has the softest sound? (rainfall) What has the loudest sound? (balloon pop) Can you name other loud sounds? (variable)

Humans and animals have different ranges of hearing.

Which animal has the best hearing? (elephant and dolphin) Which animal hears more lower pitched sounds? (elephant) Which animal hears more higher pitched sounds? (dolphin and bat)

For different reasons, some children and adults do not hear well. They may use a tiny device called a hearing aid or a "cochlear implant" to allow them to hear.

#### Sign language

People who cannot hear the majority of sounds are called "deaf." Cover your ears and see if you can understand what your partner is saying without sounds. They may also not be able to speak well because they have not heard how to form words. They often communicate through sign language or may read lips.

## **Discussion**

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Ask the children if they know someone who is deaf. Ask them how best to relate to someone who cannot hear, or may be physically challenged, i.e. with courtesy and respect, not staring or making fun, perhaps offering help if they think a person needs it.

#### **Classroom Activities**

Play several sounds on a tape or with musical instruments and have the students identify the sounds. Discuss how we can identify certain situations by sounds, i.e., car horn or siren may signify danger, singing or whistling may identify a happy person, etc.

# **Your Skin**

# Introduction

Skin protects, keeps out germs, warms and cools your body. It is the main organ for the sense of touch. It is also where hair grows out of and what sweat comes through. Skin keeps a body together!

## **Terms to Know**

- Nerves
- Temperature

## **Workbook Activities**

Your sense of touch is through your skin.

You have nerves all over your body that let you know if somebody or something is touching you. Your sense of touch can identify water, sand, gravel, fur and many other items just by the way they feel. You can also feel temperature such as hot or cold through your sense of touch.

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Think of something that feels: Hot, Cold, Hard, Soft, Rough, Smooth, Wet, or Dry

It is important to protect your skin. The sun's rays can damage your skin.

Rip is going to the beach. Circle what he needs to take with him to protect his skin from the sun's harmful rays. (hat, sunglasses, umbrella, sunscreen lotion, and clothing)

The sun and cold of winter can be just as damaging to your skin. Name 4 items that will help protect you in the winter. (i.e., hat, gloves, boots, and coat)

#### What's in a face?

All faces have one of 5 basic shapes - Square, Round, Triangular, Oblong or Oval.

Circle which face shape is most like yours.

Your face is made up of several layers. There is first the skull. Muscles then overlay the skull. Skin then attaches to the muscles. This is what makes you look like you!

#### Discussion

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Discuss the uniqueness of skin for: color, sweat, nails, and hair.

Discuss how a blind person might learn by touch rather than sight.

#### **Classroom Activities**

Have several bags or boxes with unidentified objects in them. Have the students feel the objects and try to identify them by their sense of touch.

Show how everyone has unique or different fingerprints. Have students press their thumbs or index fingers onto an inkpad and then onto a paper. Collect several prints on the paper. Circle prints that represent the three basic kinds of fingerprints: the circular whorl; the loop; and the arch. (They look just like they sound.) Point out how all of them are unique, like snowflakes. Also point out that because all fingerprints are different, that police use their identification to help track criminals.



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# Germs

## Introduction

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Those terrible colds or stomach aches are often caused by germs. a cold is not a serious llness, but germs can cause other, more serious illnesses. Germs are everywhere, but a healthy and clean body can fight germs. It is important to keep in tip-top shape to help prevent diseases.

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#### **Terms to Know**

Diseases

## **Workbook Activities**

Germs are tiny living things that can cause us to get sick. They are too small for you to see them, but they are everywhere! They are in the air and can get into your body when you breathe. They usually get into your body through your eyes, nose or mouth when you touch your hands to your face. You can also get germs in your body through cuts in your skin.

Do you know what causes diseases? Diseases are caused by germs and can make a person sick. Germs are tiny living things - so small, in fact, that you need a microscope to see them.

If germs get inside you, your body provides warmth, food and water for them to survive. However, your body kills most of the harmful germs that grow inside it. Sometimes doctors can prescribe medicine to help kill the germs that your body does not.

Keep your germs to yourself!

To keep your germs from spreading to others when you're sick:

- Stay away from other people.
- Cover your mouth with your shirt or a tissue when you cough or sneeze.
- Wash your hands often with soap and water. Don't let other people drink from your glass.

It is important that you wash your hands thoroughly to clean all the places where germs can hide. Trace your hand in the box. Next draw in some of the creases, lines and wrinkles on your hand. Put an X over areas where you think germs can hide.

The choices you make about how you take care of this amazing body directly affect your health. When you make the same good choices again and again, they become healthy habits.

#### Discussion

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Discuss ways you can get germs and the importance of cleanliness. Impress upon the students the importance of washing their hands often with soap and warm water. Make sure your school provides soap in the washrooms so the children can practice good hygiene.

Talk about not sharing certain items such as food, drinks, lip balm, medicines such as eye drops, etc. Children may not realize how many germs their pens and pencils carry due to putting them in their mouths and being handled constantly.

Discuss how a healthy body can fight certain germs, but medicine may be required to fight others. Some conditions such as cancer, asthma, diabetes, cerebral palsy and epilepsy are not caused by germs.

# **Classroom Activities**

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Ask the students the following true/false statements about germs.

- 1. Germs are very large. (false)
- 2. Germs are passed from one person to another by their hands. (true)

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- 3. Germs always make you sick. (false)
- 4. If you cut your knee, you should just leave it alone. (false)
- 5. You should wash your hands before you eat. (true)
- 6. If you sneeze, you don't need to cover your mouth. (false)
- 7. Germs are everywhere. (true)
- 8. Some diseases are caused by germs. (true)
- 9. Germs can't get into your body nose or mouth. (false)
- 10. You should wash your hands with soap after using the restroom. (true)



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# **Your Heart & Lungs**

## Introduction

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Your heart and lungs are what provide the oxygen that a body needs. Lungs breathe oxygen in and depleted oxygen out. The heart circulates the oxygen. It is important to keep this important process going. Smoking or chemicals can hurt oxygen intake.

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### **Terms to Know**

- Chambers
- Atrium/Atria
- Ventricles
- Pulse
- Oxygen

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Carbon Dioxide

#### **Workbook Activities**

Your heart is a large, strong muscle about the size of your fist. Your heart's job is to pump blood. Your blood flows through your blood vessels taking nutrients and oxygen to all parts of your body.

Your heart has four sections called chambers. The two upper chambers are called atria. The two lower chambers are called ventricles.

This is a drawing of the inside of a heart. Follow the directions to trace the blood flow. You will need red and blue crayons or markers.

- 1. Put your blue pencil on the place marked "Begin Here."
- 2. Follow the arrows and color the blood flowing into the right atrium.
- 3. Go down into the right ventricle and back up to the right valve. The valve keeps blood from flowing backward.
- 4. Keep going! Follow the arrows to your lungs.
- 5. Blood picks up oxygen in your lungs. Switch to the red color to show oxygenated blood.
- 6. Color the blood red returning from your lungs into the left atrium.
- 7. Follow the blood into the left ventricle.
- 8. Oxygenated blood flows from the left ventricle into the rest of your body.

One complete round trip of the blood from your right atrium, through your lungs, back to your heart and to your body takes less than one minute. Your blood completes this trip more than 1,000 times each day.

You can feel and hear the pumping of your heart as you hear heart beats. Your heart beats 60 to 120 times times a minute: this number is called your heart rate or pulse. Your heart beats about 100,000 times a day!

When you exercise, your heart beats faster and gets stronger. Can you think of other things that make your heart beat faster?

The air around you contains oxygen. Your body needs oxygen to play and to grow. Your lungs, located inside your chest, help you breathe in oxygen.

- 1. You breathe in air (inhale) through your nose and mouth.
- 2. The air then travels down your windpipe (trachea and bronchi) into your lungs.

3. The air sacs (alveoli) in your lungs take oxygen from the air your breathe in. In the air sacs of your lungs, the oxygen enters your blood and colors your blood red.

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- 4. Blood pumped by your heart carries the oxygen to your body.
- 5. As your body uses the oxygen, it makes carbon dioxide. The carbon dioxide leaves your body when you breathe out (exhale).

Now, trace the breathing process on the picture you colored.

You can keep your lungs healthy by running and playing.

When you smoke your body doesn't get the oxygen it needs to do its job. Cigarette smoke also contains many dangerous chemicals that pollute the air and can harm your body. So don't smoke!

# Discussion

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Your heart and lungs work together. Your lungs gather oxygen by inhaling air into your body. Your heart moves the oxygen to all the places that need it in your body. Your lungs then remove used air out of your body. It's teamwork! Can you think of other things that work together? (An example is two people on a see-saw.)

Explain that the heart has four chambers and that each one has a special job.

- Right Atrium receives blood from all parts of the body. This blood is dark red because it lacks oxygen.
- Right Ventricle pumps the oxygen-depleted blood to the lungs. While the blood is in the lungs,
  - it receives fresh oxygen. In the lungs, the blood turns bright red.
- Left Atrium receives bright red, oxygen-rich blood from the lungs.
- Left Ventricle pumps oxygen rich blood to all parts of the body.

Discuss ways to make a heart beat faster. Distinguish between positive and negative stimuli, i.e., exercise, smoking, adrenaline, etc. Do your lungs inhale faster or more with these stimuli?

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Discuss the importance of weight control, proper diet, exercise and heart health.

Review the lungs and explain the breathing process. Have the students follow along by tracing the oxygen path on the illustration.

Briefly describe what happens when people smoke.

- Bad gases in the smoke disrupt the flow of oxygen in the lungs.
- Nicotine makes the blood vessels get smaller. This causes an increase in heart rate, making the heart work harder.
- The body is deprived of the oxygen it needs.

Discuss why smoking is a bad habit.

- Smoking is an easy habit to start, but it is a difficult habit to break.
- Smoking is an expensive habit.
- People who smoke can cause fires. It is not uncommon for smokers to fall asleep with lighted cigarettes and start fires in their beds.
- Smoking makes people smell bad, and it gives people bad breath.
- Smoking makes you have unhealthy lungs and heart and less energy.
- People who smoke have a higher incidence of respiratory and other diseases.
- Smoking damages your heart and there is an increase of heart attacks.

#### **Classroom Activities**

Teach students to measure their heart rate.

- 1. You can feel your pulse on your wrist or the side of your neck by slightly holding our index finger and middle finger on one of those spots.
- 2. Have students count their heart beats for 10 seconds.
- 3. After students have made a 10 second count, ask them to mulitply the count by 6. The result is the pulse rate (the number of times the heart beats in one minute).

## **Classroom Activities**

Demonstrate the effect of extra weight on the heart.

- 1. Use two students of equal size and weight.
- 2. Take each student's pulse and record the rate.
- 3. Have one student walk back and forth across the room 10 times carrying 15 lbs. of weight.

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- 4. Take the student's pulse after the exercise.
- 5. Have the other student do the same activity without the weight.
- 6. Record pulses.
- 7. Compare pulse rates.

#### **Smoking Demonstration**

Tars and chemicals present in cigarette smoke can damage lungs.

#### Materials needed:

- 1 empty clear detergent bottle
- 10-12 cotton balls
- 1-2 cigarettes

#### Procedure:

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- 1. In the bottom of the bottle, cut a hole approximately the same diameter as a pencil.
- 2. Put enough cotton balls inside the bottle to fill the bottle loosely.
- 3. Take the spout out of the cap, and put a cigarette in its place.
- 4. Light the cigarette.
- 5. Squeeze the bottle. Air will be squeezed out of the bottle through the hole in the bottom.
- 6. Put your finger over the hole, and release the bottle. This procedure will suck air through the cigarette, representing a smoker inhaling.
- 7. Repeat this procedure until you have "smoked" one or two cigarettes or until the cotton balls begin to turn yellow. The yellow color is the tar from the smoke. There will also be tar around the hole in the bottom of the bottle and around the cap.

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8. Explain to the students that this experiment demonstrates how tar collects in a smoker's lungs. Point out the discoloration of the cotton after only two cigarettes. Think what happens to your lungs after years of smoking!

# **Your Brain**

### Introduction

The brain is the control and command center for every function of the entire body.

### **Terms to Know**

- Spinal cord
- Nervous System
- Cerebrum
- Brain Stem
- Hormones
- Cerebellum

#### **Workbook Activities**

Your brain controls everything you do. It only weighs about three pounds, but it coordinates your movements, controls your breathing and controls your emotions.

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All messages traveling to and from the brain go through your spinal cord. Together the brain and spinal cord are called the central nervous system.

The brain has three main parts: the brain stern, the cerebrum, and the cerebellum. The largest part of the brain is the cerebrum, which is mostly made up of nerve cells or neurons. Electrical signals in brain are carried by neurons. You use your cerebrum when you think or walk.

Your brain and spinal cord are connected by the brain stem. The brain stem controls the body's functions such as breathing, heartbeat and blood pressure. These things happen automatically because of the brain stem. The brain stem also controls your body's hormones. Hormones control your size, how much hair you have and how your body uses food.

Behind the brain stem at the back of the brain is the cerebellum. The main job of the cerebellum is to control the body's muscles and balance.

What part of the brain is controlling these activities?

Running (cerebellum) Inhaling (brain stem) Taking a math test (cerebrum)

#### **Making Sense**

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Your brain controls your five senses: Sight, Smell, Touch, Hearing, Taste.

Draw a line from the question to the right answer.

What helps you see? (Eye) What helps you taste? (Tongue) What helps you hear? (Ear) What helps you smell? (Nose) What helps you feel? (Hand) What controls your senses? (Brain)

Put an X on what you can smell. (food, flowers) Put a circle around what you can see. (all) Put a box around what you can taste. (food) Put a check mark on things you can hear. (plane, bird, kids, bee, dog, cat, radio) List 3 things that you can feel. (dog,flowers, food, Trek and Rip)

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# Discussion

Trace a message from one part of the body, to the brain and back.

Discuss how fast your brain works when you want to do something, i.e., stand up, sit down, and any other action.

Discuss ways to protect your brain.

- 1. Wear a bike helmet, even when riding in the driveway skating or riding a scooter.
- 2. Wear seatbelts when riding in a vehicle.
- 3. Observe bicycle and traffic rules.
- 4. Jump into water feet first every time.

Discuss ways to help our brains develop

- 1. Reading
- 2. Eating healthy foods
- 3. Exercising
- 4. Paying attention

#### **Classroom Activities**

#### **Gelatin Brain**

Ask the BodyTrek staff about using the gelatin brain mold. Prepare gelatin according to directions the day before you are planning to do a demonstration.

Drop the gelatin mold from several feet above a cement or asphalt surface. Discuss with students what happens when the gelatin hits the ground and how the outcome might have been different.

#### Safety Helmets Saves Lives

Purchase two cantaloupes, making sure that at least one of the cantaloupes is very ripe. Drop the very ripe cantaloupe as explained above. Place the other cantaloupe securely in a safety helmet and repeat the demonstration (the cantaloupe should not break or burst). Discuss the different outcomes of the experiment and how a helmet can save lives.

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#### Senses Test

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Ask the students to choose what main sense might be used to tell what the following is:

- 1. Thunder (hearing)
- 2. Skunk odor (smell)
- 3. Cactus Needle (touch)
- 4. Lightning (sight)
- 5. Lemon drop (taste)
- 6. Shadow (sight)
- 7. Cookies baking (smell)
- 8. Pin (touch)

**Notes** 

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A Cooperative Educational Program of Blue Cross and Blue Shield of Alabama and Children's of Alabama

5/2019