

**SLIM GOODBODY presents**



*Dear Teacher:*

*Bodyology was created to help children learn about the wonders of the human body. This knowledge will hopefully lead to an increased sense of self-appreciation and self-respect.*

*There are a wide variety of activities in this Teacher Guide. They can be utilized before or after the program as reinforcement, depending on your schedule and your curriculum needs.*

*In addition, there are ancillary materials available for use in conjunction with this program. Please call our offices if you would like more information*

*Enjoy the show!*

## **The Circulatory System: *Lubba Dubba***

1. Borrow a stethoscope or improvise one by attaching a small funnel to a plastic or rubber tube. Hold the funnel to the chest and put the other end of the tube to the ear. A cardboard tube, or the human ear, can be used to listen, too. Have the students listen to their own hearts and other students' hearts. Students will be able to hear the heart best on the left-hand side of the chest because it is near the chest wall there.
2. Ask students why doctors and nurses take our pulses (the pulse beats at the same rate as the heart, so by counting the number of pulse beats in a minute we can tell how fast the heart is beating.) Ask the students to remember what Slim Goodbody called the heart (a muscle.) Ask what one does to make a muscle strong and keep the heart healthy. Set up a three-column
3. Have students look at their wrists. Why do they think the veins have a blue color? Explain that, as Slim Goodbody pointed out in The Musical Health Show, the dark red or venous blood looks blue through the skin, but blood flowing away from the heart in the arteries is bright red. Why the difference in colors? (The blood becomes bright red when it picks up oxygen from the lungs. After it delivers oxygen to the cells it loses its bright red color.)

## **The Respiratory System: *The Breath of Life***

1. Have students record the number of breaths they take in a minute as they sit resting. (The breathing rate for children is 20 - 25 breaths per minute; for adults like Slim Goodbody, about 16 per minute.) Then have the students do the same thing after several minutes of hard exercise (jumping jacks, jogging, etc.) What happened to their rate of breathing? Point out that the heart and lungs work as a team. Just as some of the activities the students came up with to make their hearts stronger (exercise,) they will also increase their lung capacity. What factors do students think could decrease their lung capacity (air pollution, smoking, inactivity, etc.)
2. Stretching their necks, can students locate the larynx, or “Adam’s Apple”? Have them hold the larynx in their fingers as they speak and sing. Can they feel the larynx vibrate? What is causing the vibration and producing sound? (Air rushing past two folds of flesh, called the vocal cords, found in the larynx, makes them vibrate and produces sound.)

## **The Brain and Nervous System: *The Smart Parts***

1. Ask students if they have ever dropped a ball because somebody has tossed it to them so suddenly that they did not have time to get ready to catch it. This shows that the nervous system takes a little time to absorb a signal, figure it out, and act on it. This brief pause is called reaction time. Can they think of other examples? Why is it important for drivers and bicyclists to be aware of reaction time?
2. Ask the participant how the brain gets the information it needs to work. They may mention various senses, such as sight and hearing. The body also has senses we don’t think about. For example, ask the students to hold their arms out in front of themselves and close their eyes. Now with their eyes still closed, have them raise one arm. Ask them how they know which arm is raised. (They can tell the position of the arms.) Nerves go from the muscles and joints to the brain, telling the brain the position of the body. Some people call this the sense of position, or kinesthetic sense. Have students test other nerve sensations (tickling sensation, warm and cold sensation, etc.)

## **The Musculo-Skeletal System: *The Team that Hustles***

1. A great variety of muscles, tendons, and joints work together to make our hands very useful. The thumb is especially important. Have the students fold their thumbs across their palms. Fix the thumbs in place with adhesive tape. Now have the students attempt various tasks with their “thumbless” hands, such as picking up small and large objects, carrying things, and drinking a glass of water. Afterwards, have them examine their hands to find out how the thumb works with the fingers. Humans are among the few creatures who have an “opposable” thumb that can curve to touch other fingers and hold things.
2. Ask students to open their mouths and wiggle their tongues about. Do they think the tongue has muscles? (Yes, it has four, which can make a variety of movements.) Ask students to roll up their tongues the long way, to form a kind of tube. Only some will be able to do this. Some people are born with this ability; others are born without it. It is one of the many minor differences among people.

## **The Digestive System: *Down, Down, Down***

1. After they have washed their hands, have students touch their teeth and identify the chisel-shaped front incisors, the pointed canines, and the flat-topped molars at the rear of the mouth. Discuss different foods and which teeth bite, tear and chew the food. Discuss how each type of tooth helps break up the food for digestion.
2. The esophagus is more than just a tube down which food slides to the stomach. Have students help a child stand on his or her head. Have the child take a small bite of banana, masticate it, and swallow it. Follow this with some sips of water through a straw. How can the food and water reach the stomach if they have to travel “uphill?” (The esophagus walls pinch inward to force food and liquid along toward the stomach, much as you might squeeze a toothpaste tube.) The children will especially enjoy this experiment if the teacher volunteers to be the second subject. Caution children to not try this experiment on their own. They should eat sitting upright to avoid choking.
3. Using a copy of the food guide pyramid, discuss a diet of recommended daily food choices: a) Bread, Cereal, Rice, & Pasta Group – 6-11 SERVINGS; b) Fruit Group – 2-4 SERVINGS; c) Vegetable Group – 3-5 SERVINGS; d) Meat, Poultry, Dry Beans, Eggs, & Nuts Group – 2-3 SERVINGS; e) Milk, Yogurt, & Cheese Group – 2-3 SERVINGS; f) Fats, Oils & Sweets – USE SPARINGLY.

## ***The Senses: Reporters on the World***

1. Have students examine each other’s tongues. Do they see the tiny bumps covering the tongue? The bumps are largest toward the back of the tongue. Each bump holds a number of invisibly small taste buds. A person’s tongue has about nine thousand taste buds.
  2. What part does smell play in taste? Have a participant bite into an apple slice while smelling a cut onion. Does the apple taste like apple? Or more like onion?
- students to name some quiet noises. Can they name some very loud noises? Besides being soft or loud, noises can be pleasant or unpleasant. Have students think of some pleasant noises they have heard or can imagine. What are some unpleasant noises? Have they ever been frightened by a sound?



3. The ears can hear an amazing range of sounds, from soft whispers to thunderous noises. Ask