



Investigation 1

Measuring the Monstrous Digestive System

Materials

- student record sheets on pages 20 and 21, reproduced for each student
- overhead transparency of *The Digestive System* on page 17
- photocopy of the diagram for each pair of students
- measuring tools (rulers, metersticks)
- yarn (blue, red, green, yellow, and purple)
- scissors

Steps to Follow

1. Engage students in a discussion of why we need food. Lead them to the understanding that food and oxygen provide our cells with the energy they need to function. Display *The Digestive System* transparency and discuss the different parts of the digestive system.
2. Explain to students that they will be making models of their own digestive systems by measuring and cutting yarn to represent the lengths of different parts of the system, and then knotting the pieces of yarn together to form one long string.
3. Group students into pairs. Have them take turns measuring each other, so that each student has a set of data for his or her own body. Students should measure in centimeters.
4. Distribute student record sheets, diagrams, and materials. Either read the instructions together or have students complete the activity on their own.

Follow-Up

When students have completed the activity, hang the digestive system models around the room so the class can observe their actual length.

Review the record sheet answers, especially the Conclusions section. Students might say that the model showed them the length of the digestive system and the order of its different parts.

Measuring the Monstrous Digestive System



Procedure

1. Measure each part of the digestive system in centimeters. Record your data in the Observations section.
 - Digestion begins in the mouth, so measure and cut a piece of red yarn from the front to the back of the mouth. (You can do this by stretching the yarn from the front of your lips to the back of your jaw along your cheek.)
 - The esophagus is a tube that connects the mouth and stomach. Measure and cut a piece of blue yarn the length of the esophagus.* Tie the blue esophagus to the red mouth.
 - In the stomach, gastric juices break down solid food into a liquid. Find the length of the stomach by spreading the fingers of your hand and measuring the span from the thumb to the little finger. Measure and cut a piece of green yarn to match this length. Tie the green stomach to the blue esophagus.
 - The small intestine is the longest part of the digestive system. It is folded up inside of you so it fits. Food is further digested and absorbed here. Measure your height and multiply by four. Use yellow yarn to represent the length of the small intestine. Tie the yellow small intestine to the green stomach.
 - Last is the large intestine. It is much wider than the small intestine but much shorter. It is about as tall as you are. Undigested material from the small intestine moves to the large intestine before being excreted. Use purple yarn to represent the length of your large intestine. Then tie the purple large intestine to the yellow small intestine.
2. Add all the lengths together. This is the approximate length of your digestive system.

*The esophagus ends just below your rib cage.

Observations

Digestive Organ	
Mouth	
Esophagus	
Stomach	
Small Intestine	
Large Intestine	

Total Length of Digestive System: _____ cm

Conclusions

3. Why do you suppose your digestive system is so long?

4. A model is a representation of an object or a process or idea. It simplifies and helps to explain whatever it represents. List two things your model helped you learn about the digestive system.
