

Lab: Measuring the Monstrous Digestive System

Name _____

Background:

You feel hungry because your brain receives signals that your cells need energy. But eating is only the beginning of the story. Your body must change a meal into substances that you can use. Your digestive system is a group of organs that work together to digest food so that it can be used by the body.

Look at the picture to the right of your digestive system. This system contains many parts & many of the parts are folded up inside your body. If you were to take your digestive system out of your body and lay it out flat, it would surprise you how long it is. In this lab you will make models of your own digestive system by measuring & cutting yarn to represent lengths of different parts of the system, and knotting the pieces of yarn together to form one long string.

Materials: metersticks, yarn (blue, red, green, yellow, purple), scissors, digestive system diagram

Procedure:

__1) 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).

__2) Record this length in centimeters (cm) in the data table on the next page.

__3) The **esophagus** is a tube that connects the mouth and stomach. Measure & cut a piece of blue yarn the length of the esophagus. (Measure from your mouth to just below your rib cage). Tie the blue esophagus to the red mouth.

__4) Record the length of this blue string in centimeters (cm) in the data table on the next page.

__5) 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.

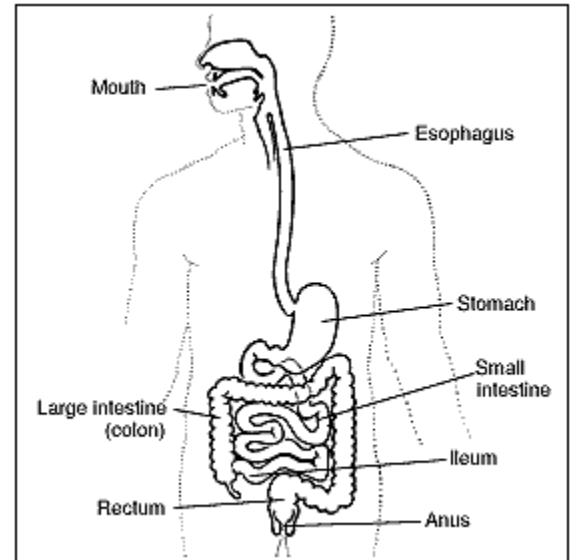
__6) Record the length of this green string in centimeters (cm) in the data table on the next page.

__7) 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 it by four. Use yellow yarn to represent the length of the small intestine. Tie the yellow small intestine to the green stomach.

__8) Record the length of this yellow string in centimeters (cm) in the data table on the next page.

__9) 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 it leaves your body. Use purple yarn to represent the length of your large intestine. Then tie the purple large intestine to the yellow small intestine.

__10) Record the length of this purple string in centimeters (cm) in the data table on the next page.



__11) Label each segment of your digestive system model with masking tape like your teacher showed you.

DIGESTIVE ORGAN	LENGTH (CM)
Mouth	
Esophagus	
Stomach	
Small Intestine	
Large Intestine	

Follow-up Questions:

1) What is the TOTAL LENGTH of your digestive system? _____ cm

2) Why do you think your digestive system is so long? _____

2) Read back through the procedure. What are the jobs of the following digestive organs?

DIGESTIVE ORGAN	FUNCTION (JOB)
Mouth	
Esophagus	
Stomach	
Small Intestine	
Large Intestine	