



Curiosity Guide #204

Digestive System

Accompanies Curious Crew, Season 2, Episode 4 (#204)

Polly Wants a Cracker

Investigation #1

Description

A simple and fun way to start thinking about how digestion begins. You may want to try this investigation with other foods, too!

Materials

- 1 small saltine cracker for each person
- Stopwatch

Procedure

- 1) What do you think happens to food when you begin to chew food in your mouth? Make a prediction.
- 2) Take a bite of the saltine cracker. Chew it slowly. Don't swallow yet!
- 3) Start the stopwatch. Hold the food in your mouth for 20 to 30 seconds.
- 4) Stop the stopwatch when time is up. Swallow.
- 5) What happened? Were there changes in texture or taste? Why?

My Results

Explanation

Did you know that digesting your food starts in your mouth? It's true! Our teeth cut and grind the food into smaller bits, and chewing sends a message to our brains to make saliva. The saliva, or spit, has a special enzyme that starts to change the starch in the foods we eat into simple sugars that our bodies need. Chewing is really an important first step in the digestion process.

Saliva is loaded with an enzyme called amylase. When you chew food, the amylase surrounds the starch molecules in the food. The amylase chemically breaks apart the long- starch molecules into small sugar carbohydrates. Because the process happens abruptly, our taste buds can detect the sweet flavor of the resulting sugar carbohydrates. Those simple sugars will eventually be processed in the small intestine and converted to glucose, the body's main energy source. Because the chewing process stimulates the secretion of saliva in the mouth, it is important to amply chew before swallowing and get an effective start on the digestion process.

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