Name:_____

Lab Activity – Cracker digestion

Your digestive system is highly specialized for absorption and digestion, breaking down foods to obtain nutrients. Both of these processes begin in the mouth

■ Starch (a carbohydrate) is an important food molecule found in many foods and is a major component in most human diets.

■Lugol's iodine stain can be used to detect the presence of sugar. A change to blue/black is a positive test.

■In this activity, you will examine the process of digestion involving starch that begins in your mouth.

Materials

- Saltine crackers
- Test tubes and racks
- Funnel
- Water
- Droppers
- Graduated cyclinder
- Mortar and pestle
- Iodine

Part 1 – In your mouth

Procedure

1. Put a cracker in your mouth and chew for 6 minutes (NO SWALLOWING!)
2. Record your initial observation of taste and your taste observations after 6 minutes.

Observations

1. Describe the taste of the cracker when you initial began chewing it.

2. Describe the changes in the taste of the cracker after 6 minutes.

3. Make a hypothesis about what may be occurring.

Part 2 – In the Test Tube

Procedure

1. Spit into a 10ml graduated cylinder. You must collect at least 5 ml (one teaspoon) of saliva.
2. Once saliva is collected, pour into test tube.
3. Pour 5ml of water into your second test tube.
4. Obtain a soda biscuit. Break off one pea sized piece and grind it (using the mortar and pestle) into powder. Pour into one of your test tubes.
5. Repeat step 4 but pour into other test tube.
6. Add one drop of iodine to each test tube.
7. Observe for 5 minutes, noting the colour of each test tube.

Observations

1. What colour change did you observe in the test tube with water and iodine? What does this indicate?

2. What colour change did you observe in the test tube with saliva and iodine? What does this indicate?

Discussion

1. Use your observations to support what chemical reactions may be taking place in your mouth when you are eating food with starch in them?

2. What purpose would this serve? Why would this process begin in the mouth?