NAME\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Potatoes and Iodine: How does Surface Area Affect Reaction Rate?

BACKGROUND: *In this experiment, you will observe a reaction between iodine and the starch found in potatoes. When iodine encounters starch, it reacts and turns from dark red to blue/purple. Potatoes are a carbohydrate, and therefore made mostly of starches.* *Therefore, when iodine reacts with a potato, a color change is observable.*

QUESTION: How do size and surface area of potatoes affect the rate and extent of a chemical reaction with iodine?

MATERIALS:

* 1 potato, peeled and cut in half
* Potato Flakes
* 3, 2cm potato cubes
* Iodine
* Water
* Stirring Rod
* 4 Beakers (or cups), at least 250 mL
* Dropper
* 100 mL Graduated cylinder

DIRECTIONS:

Part One: Potato

1. Put 100 mL (1/2 cup) of water and 30 drops of iodine in a 250 mL (1 cup) beaker.
2. Place the 1/2 potato in the iodine and let sit for 3-5 min.
3. Observe and record any changes.

Part Two: Potato Flakes

1. In a new beaker, put 100 mL (1/2 cup) of water and 30 drops of iodine in a 250 mL (1 cup) beaker
2. Pour about 30 mL of potato flakes into your hand.
3. Observe the potato flakes- how are they similar to the ½ potato? How are they different?
4. Put the flakes in the iodine water and stir for approximately 20 seconds. Observe and record any changes.

DATA:

PART ONE: Observations/ Sketch

PART TWO: Observations/ Sketch

ANALYSIS:

1. Compare your results for Part 1 and Part 2. What differences did you see in both the water and the potato substance?
2. What do the results from Part 1 and 2 demonstrate?

Take Home Point-

Use *evidence* from the experiment to support a *claim* addressing the following question: How does size and surface area affect the rate of a chemical reaction?