

## Reaction Rates

Name: \_\_\_\_\_

Date: \_\_\_\_\_ Per: \_\_\_\_\_

**Directions:** Compare the four sets of situations below. In each case, describe how the given change (B) will affect the number of collisions between the reactant particles compared to Situation A. Then predict whether the change will increase or decrease the overall rate of the reaction. Respond to the extend problems once you have completed the four sets of situations.

### Situation Set 1

- A. A charcoal grill is lit using 10mL of lighter fluid on 25 charcoal briquettes and a crumpled up sheet of newspaper. The charcoal grill is sitting in your back yard.
- B. A charcoal grill is lit using 10mL of lighter fluid on 25 charcoal briquettes and a crumpled up sheet of newspaper. The charcoal grill is in a tent containing pure oxygen.

### Situation Set 2

- A. 25mL of 2.0M acetic acid react with 0.50g of sodium bicarbonate.
- B. 25mL of 2.0M acetic acid are mixed with 100mL of water and then react with 0.50g of sodium bicarbonate.

### Situation Set 3

- A. A 10g stick of wood is lit on fire using a Bunsen burner.
- B. 10grams of sawdust are blown into a Bunsen burner flame.

### Situation Set 4

- A. A tea bag is placed in a cup of boiling water to make a tasty hot beverage in the winter.
- B. A tea bag is placed in a cup of cold water to make a tasty cold beverage in the summer.

