**GPS – Factors Affecting Rates of Reaction**

Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period\_\_\_\_\_\_\_\_\_\_

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| ***Bellwork*** |
| http://www.bbc.co.uk/staticarchive/f5be3f194273fed6987dcf97a8eb789791895768.gif | 1. What factors affect the rate of reactions?
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| 1. ***Slower and slower***
	1. Reactions do not proceed at a \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_. They start off at a certain speed, then get slower and slower until they stop.
	2. As the reaction progresses, the amount of reactants decreases.
2. ***Temperature and collisions***
	1. How does temperature affect the rate of particle collision?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. ***Surface Area***
	1. If we make the pieces of the reactants \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ we increase the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ on surface which can react.
	2. This makes the reaction \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. ***Concentration***
	1. If we make on reactant more \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (like making a drink of Kool-Aid more sweet)
	2. There are \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the \_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to react.
	3. So the reaction goes \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. ***Using a catalyst***
	1. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a chemical which is added to a reaction.
	2. It makes the reaction go \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	3. The catalyst \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ in the reaction.
	4. It gives the reaction the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to get started.
3. ***Everyday catalysts***
	1. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	2. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
	3. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
4. ***Endothermic and exothermic***
	1. Endothermic reactions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
	2. Exothermic reactions \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to their surroundings.
	3. Which are the following?

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Complete the following questions with a partner, using your notes and your book!

***Review Questions – Factors affecting rates of reactions***

1. You are trying to get a mystery block of substance to react with acid. You crush the block of substance in order to get it to react faster. Which of the 4 factors are you using to speed up the rate of reaction?
2. You are baking a cake for your sister’s birthday. You set the oven to 350 degrees Fahrenheit. You decide to turn up the oven to 400 degrees to bake it faster, and your burn the cake. Which of the 4 factors are you using to speed up the rate of reaction?
3. Your car uses platinum to catalyze carbon monoxide and nitrogen monoxide into CO2 and nitrogen. Which of the 4 factors is your car using?
4. WHY does a higher temperature speed up the rate of reaction?
5. WHY does a higher concentration speed up the rate of reaction?
6. WHY does a higher surface area speed up the rate of reaction?
7. WHY would industries want to use catalysts?
8. What happens to the rate of a reaction as the amount of reactants decreases?
9. Why doesn’t a reaction occur at a steady rate?
10. What is activation energy?