Name _____ Date _____

Comprehension
Section 6.2

Use with textbook pages 272–277.

Different rates of reactions

1. Indicate whether each of the following would increase or decrease the rate of reaction.

   (a) adding heat ↑ increase

   (b) removing heat ↓ decrease

   (c) adding a catalyst ↑ increase

   (d) diluting a solution ↓ decrease

   (e) removing an enzyme ↓ decrease

   (f) lowering the temperature ↓ decrease

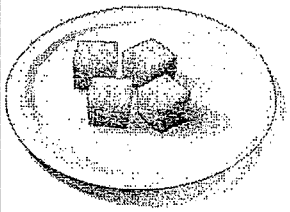
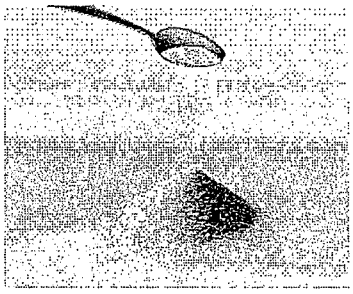
   (g) increasing the temperature ↑ increase

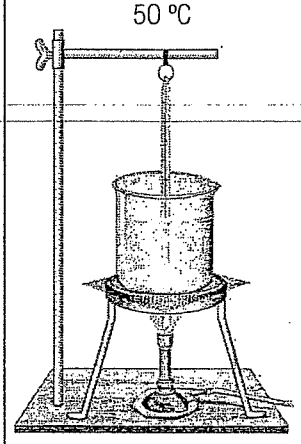
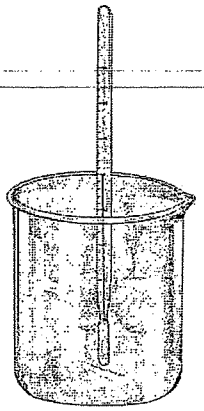
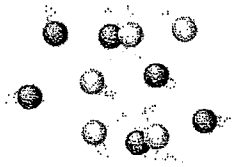
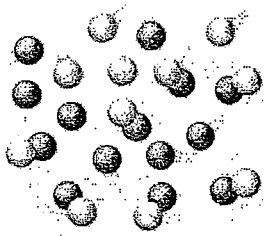
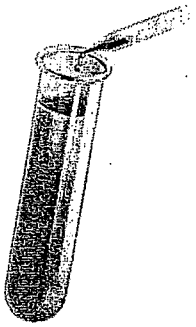
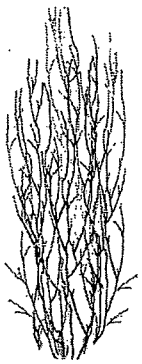
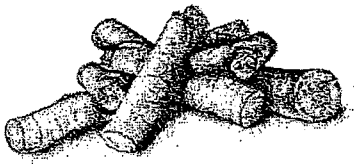
   (h) decreasing the surface area ↓ decrease

   (i) increasing the concentration of a solution ↑ increase

   (j) breaking a reactant down into smaller pieces ↑ increase

2. Identify which situation would have a higher reaction rate. Then state the factor that affected the rate of reaction in each situation.

	Situation X	Situation Y	Situation with a higher reaction rate (X or Y)	Factor affecting the rate of reaction
(a)	1 g of sugar (cubes) 	1 g of sugar (grains) 	Y	SA

(b)	50 °C 	0 °C 	X	temp
(c)	low number of particles = few collisions 	high number of particles = more collisions 	Y	Conc
(d)	enzyme added 	no enzyme added 	X	catalyst
(e)	twigs 	logs 	X	SA

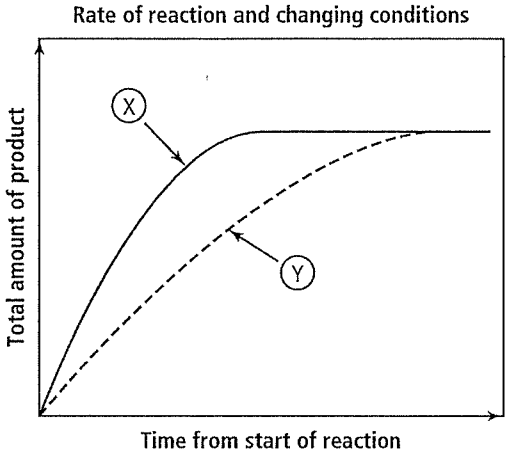
Name Date

Applying Knowledge
Section 6.2

Use with textbook pages 272–277.

Four factors affecting the rate of reactions

Use the following graph to answer question 1.



1. The graph above shows the differences in the rate of reaction at different temperatures, concentrations, surface area, and the presence or absence of a catalyst. A steeper line represents a greater rate of reaction. Indicate which line (X or Y) each of the following are associated with.

(a) lower temperature Y (b) higher temperature X

(c) lower concentration Y (d) higher concentration X

(e) absence of a catalyst Y (f) presence of a catalyst X

(g) larger pieces (small surface area) Y

(h) smaller pieces (large surface area) X

2. Which of the four factors affecting reaction rate is most important in each of the following examples? Choose from concentration, temperature, surface area, and catalyst.

(a) Raw carrots are cut into thin slices for cooking. SA

(b) Protein is broken down in the stomach by the enzyme pepsin. catalyst

(c) A woolly mammoth is found, perfectly preserved, near the Arctic. temp

(d) More bubbles appear when a concentrated solution of hydrochloric acid is added to a magnesium strip than when a dilute solution of the acid is added. concentration

