Name _____ Date _____

Science Mastery

Diffusion

1. State the definition of diffusion.

_____

_____

_____

2. State the definition of a concentration gradient.

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_____

_____

3. Decide if the rate of diffusion would be increased or decreased by making the following changes:

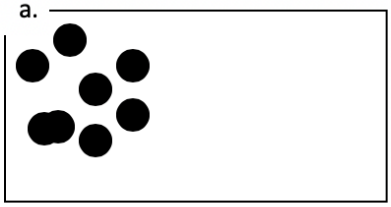
   a. Decreasing the temperature _____
   b. Increasing the temperature _____
   c. Increasing the surface area _____
   d. Decreasing the surface area _____
   e. Increasing the concentration gradient _____
   f. Decreasing the concentration gradient _____

Name _____ Date _____

Science Mastery

4. On to each of the diagrams below draw an arrow to indicate the direction of **net movement** of particles. Explain your answer using the terms **high concentration** and **low concentration.**

a.



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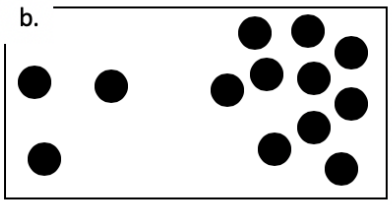
b.



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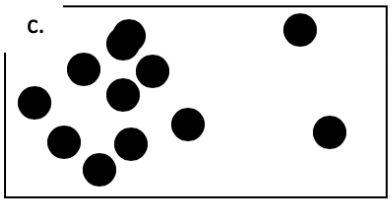
c.



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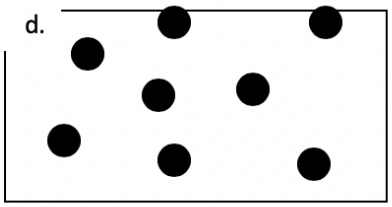
d.



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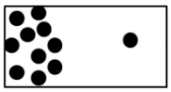
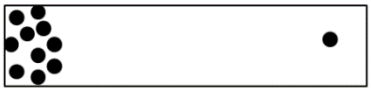
5. Which of these would have a faster rate of diffusion? Explain your answer.

A 

B 

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Name _____ Date _____

Science Mastery

6. Using your knowledge of particle theory explain why the rate of diffusion would be increased by increasing the temperature.

_____

_____

_____

7. Using your knowledge of particle theory explain why diffusion cannot happen in solids.

_____

_____

_____

8. Root hair cells are more effective at absorbing water than other types of plant cell. Explain why this is, using your knowledge of the structure of plant cells and root hair cells.

_____

_____

_____

Stretch activity:

A scientist is trying to set a world record for the fastest rate of diffusion. Describe **all** the conditions that would be needed to allow this to happen.