Name \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date \_\_\_\_\_\_\_\_\_\_\_\_\_

Kramarczyk/Wood

**Online Diffusion Lab 2018**

**Directions**: View the links for each activity and answer the questions that follow. **Certain links only work on certain browsers**. **All links work on Internet Explorer browser.** Answer all questions in this packet. You may work with a partner, but each partner must write their own answers, and please use headphones whenever possible.

**Activity #1** – **Use INTERNET EXPLORER for your browser**

<http://www.bbc.co.uk/schools/gcsebitesize/science/add_aqa_pre_2011/cells/osmosisact.shtml>

Watch the FOUR MINUTE video and answer the following questions. Pause, replay, and use subtitles as needed to find all the answers. You can also draw and label pictures

1. What is diffusion?

**Diffusion** is the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ from

\_\_\_\_\_\_\_\_\_ concentration to \_\_\_\_\_\_\_ concentration

1. Explain two examples of diffusion
2. **Concentration Gradient** is the difference between the two concentrations. Diffusion happens faster when the

concentration gradient is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. According to the narrator, what is “the thing to remember”? If needed, replay the video and view subtitles to find out! Write the entire sentence.
2. How does water **diffuse** across a membrane?

Water moves from the area of \_\_\_\_\_\_\_\_\_\_\_\_\_

concentration of water to the area of \_\_\_\_\_\_\_\_\_\_

concentration of water.

1. If there is pure water on one side of a membrane, and a **solution** (water with something mixed in) on the other side, which side has the greater concentration of water?
2. Based on your answer to #6, in which direction will the water particles move?

From \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. What is a **partially permeable membrane**?
2. There is an error in this video, can you figure it out?
   1. What part of a cell is partially permeable, the cell wall or the cell membrane?
3. What is **equilibrium**?
4. Give an example of when osmosis occurs.

**Activity #2** – Watch the animation, *How Diffusion Works*, then write the correct answers to the questions below – it’s the quiz that follows the animation on that page. Notice that the narration is transcribed just below the animation. **(Works on MS Edge and Internet Explorer)**

<http://highered.mheducation.com/sites/0072495855/student_view0/chapter2/animation__how_diffusion_works.html>

1. Simple diffusion is defined as the movement of
2. When sugar is mixed with water, equilibrium is reached when

1. Name three things that effect diffusion rate.
2. Do the molecules in a solid lump of sugar move? \_\_\_\_\_\_\_
3. Name one process that allows a cell to exchange materials with its environment.
4. How are the yellow dots simulating sugar dissolving in water?
5. Explain how diffusion helps a sugar cube to dissolve.

**Activity #3** – **Play game on INTERNET EXPLORER browser**

**Go to** <http://www.quia.com/rr/86966.html>

Try to beat the game. Take notes to learn correct answers.

Keep playing until you win, or record your best score here \_\_\_\_\_\_\_\_

**Activity #4** – Watch the animation, *How Osmosis Works*, and answer the questions below. Notice that the narration is transcribed just below the animation. **Polar molecules** have a negatively charged side and positively charged side. **Osmotic concentration** is another term for solute concentration. The **solute** is the material dissolved into the water, ex: salt is a solute. The green molecules in the animation are the solute. **(Works on MS Edge and Internet Explorer)**

<http://highered.mheducation.com/sites/0072495855/student_view0/chapter2/animation__how_osmosis_works.html>

1. What is **diffusion**?
2. What is **osmosis**?
3. Why does the water level on the right side of the beaker rise in the animation?
4. Define **hypertonic**
5. Define **hypotonic**
6. Define **isotonic**
7. What does it mean to move down a concentration gradient?
8. **Take the quiz under the animation** and record your score below. Try to apply your knowledge to answer the questions.

Quiz score: \_\_\_\_\_

**Activity #5 – Play game on INTERNET EXPLORER browser**

Go to: <http://www.quia.com/rr/12766.html>

Play the Game. Take notes to learn correct answers.

Keep playing until you win, or record your best score here \_\_\_\_\_\_\_\_

**Activity #6 – The Cell: Passive Transport Diffusion**

Scroll down to see the animation, and answer the questions below.

<https://www.wisc-online.com/learn/general-education/anatomy-and-physiology1/ap1903/the-cell-passive-transport-diffusion> **(Works on any browser)**

1. What happens to the speed of the particles when the solution is heated?
2. What happens to the speed of the particles when the solution is cooled down?

**Activity #7 – The Cell: Passive Transport Osmosis**

Scroll down to see the animation, and answer the question below.

<https://www.wisc-online.com/learn/natural-science/life-science/ap11003/the-cell-passive-transport-osmosis> **(Works on any browser)**

Remember:

**hypertonic** – lots of solute (ex: salt)

**hypotonic** – very little solute

**isotonic** – same concentration of solute on both sides of

membrane

1. Why is it important for cells to remain in an **isotonic** environment?