

HOMEWORK #9

This assignment is due at the start of the class band on _____.

Your work may be neatly handwritten or typed, and must be turned in on a separate sheet of paper.

- A. Check all your grades for this course on PupilPath. Review your work on Exam 1 and Quiz 1.
[If you do not have access to Pupil Path, you must see Ms. DeInnocentiis in room 118 or visit Mr. Sprague in room 403 during your OPTA.]
- B. Write a letter to Mr. Sprague and Ms. Khaldarova in which you reflect on your progress so far this semester. Be sure to:
- state the grades you received on Exam 1 and Quiz 1, as well as the overall letter grade estimate for the course so far that PupilPath has calculated for you
 - describe how you studied for Exam 1 and how you studied for Quiz 1 [*be sure to include exactly what you did while studying and for how long*]
 - identify any changes that you plan to make in your study habits for the next quiz/exam
 - identify a goal for this course— what is lowest grade that you will be satisfied with at the end of the semester? [*be realistic—do not set a goal that is very very far away from where you are now*]
 - state whether you are happy with your performance so far this semester, including why or why not
 - describe a few steps that you could take to realistically improve your performance in this class [*even if you are meeting your goal grade right now, you should be able to come up with at least one thing that you can improve*]
 - include anything else that you would like me to know about your performance or attitude towards this course

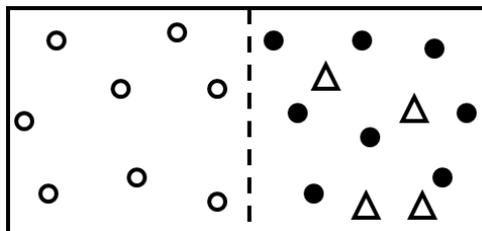
Note: Your response must address all seven bulleted asks to earn full credit. You should bullet your answers, using complete sentences.

HOMEWORK #10

This assignment is due at the start of the class band on _____.

- A. Watch the following online video: “BrainPOP: Diffusion” (see Mr. Sprague for password)
<https://www.brainpop.com/science/cellularlifeandgenetics/diffusion>
- B. Read Miller & Levine (textbook) pp. 176–178 and answer the following question in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

The diagram below represents a container in with a selectively permeable membrane separating the left and right sides of the container. The membrane is permeable to molecules ○ and ●, but molecule ▲ is unable to pass through the membrane.



Explain how diffusion will change the location of molecules in the container. In your answer:

- draw a diagram showing where molecules ○, ●, and ▲ would be found at equilibrium
- state *one* reason why molecule ▲ may be unable to pass through the membrane

HOMEWORK #11

This assignment is due at the start of the class band on _____.

- A. Watch the following online video: “BrainPOP: Active Transport” (see Mr. Sprague for password)
<https://www.brainpop.com/science/cellularlifeandgenetics/activetransport>
- B. Read Miller & Levine (textbook) pp. 179–180 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
 - 1. Compare the processes of diffusion and active transport. In your answer, be sure to:
 - state *two* ways in which active transport differs from diffusion
 - state *one* way in which active transport is similar to diffusion
 - 2. Do you think that diffusion can happen in a dead cell? Do you think that active transport can happen in a dead cell? Explain. [*Hint: think about energy. Can dead cells exert energy?*]

HOMEWORK #12

This assignment is due at the start of the class band on _____.

- A. Watch the following online video: “BrainPOP: Passive Transport” (see Mr. Sprague for password)
<https://www.brainpop.com/science/cellularlifeandgenetics/passivetransport>
- B. Read Miller & Levine (textbook) pp. 729–732, 799–801 and answer the following question in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.

Describe *one* example of diffusion in the human body. In your answer, be sure to:

- identify the place where diffusion takes place
 - identify a substance that diffuses there
 - identify where that substance diffuses from and where it diffuses to
- [*Hint: you may describe any place in the body we have learned about so far where diffusion takes place, but you must name a specific place. Simply saying “the cell” or “the cell membrane” is too vague.*]

HOMEWORK #13

This assignment is due at the start of the class band on _____.

- A. Watch the following online video: “Amoeba Sisters: Enzymes: The Proteins that Remind Us of Pac-Man”
<https://www.youtube.com/watch?v=qgVFkRn8f10>
- B. Read Miller & Levine (textbook) pp. 44–45, 720–722 and answer the following question in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
 - 1. Discuss how environmental factors may interfere with the ability of an enzyme to function. In your answer:
 - describe the role of enzymes in the human digestive system
 - explain how enzymes maintain homeostasis
 - identify *two* environmental factors that directly influence the rate of enzyme action
 - explain why changing the shape of an enzyme could affect the ability of the enzyme to function
 - 2. Copy the following chart and fill in the missing information.

Nutrient Group	Basic Building Block	Function in the Body
Carbohydrates		
Lipids		
Proteins		

- 3. Draw a plant cell, then redraw the plant cell showing what it would look like after being placed in a 15% salt solution for 20 minutes. Be sure to label the cell wall, cell membrane, and cytoplasm in both diagrams.