

HOMEWORK #13

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

- A. Watch the following online video: “BrainPOP: Passive Transport” (see your teachers 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 #14

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		

HOMEWORK #15

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

- A. Watch the following online video: “BrainPOP: Endocrine System” (see your teachers for password)
<https://www.brainpop.com/health/body/systems/endocrinesystem>
- B. Read Miller & Levine (textbook) pp. 810–816 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Explain how insulin helps maintain homeostasis in humans. In your answer, be sure to:
 - describe the role of hormones in the human body
 - state the job of insulin in the human body
 - identify the gland that produces insulin
 - identify *one* human hormone other than insulin, state the job of this hormone, and identify the gland that produces this hormone
 2. The pituitary gland releases thyroid stimulating hormone (TSH) into the blood to signal the thyroid gland to start releasing its hormones. Explain why only the cells of the thyroid gland receive this message even though all cells are exposed to TSH as it travels through the blood.
 3. Explain how negative feedback ensures that hormone levels are not too high or too low.
 4. 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.

HOMEWORK #16

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

- A. Watch the following online video: “BrainPOP: Immune System” (see your teachers for password)
<https://www.brainpop.com/health/body/systems/immunesystem>
- B. Watch the following online video: “BrainPOP: Vaccines” (see your teachers for password)
<https://www.brainpop.com/health/diseases/injuries/and/conditions/vaccines>
- C. Watch the following online video: “BrainPOP: Neurons” (see your teachers for password)
<https://www.brainpop.com/health/body/systems/neurons>
- D. Read Miller & Levine (textbook) pp. 841–851 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Explain how a nerve impulse travels through a synapse from one neuron to the next.
 2. Explain how a flu vaccine protects the human body against pathogens. In your answer, be sure to:
 - identify what substance is in a flu vaccine that stimulates immunity
[Hint: be very careful about how you word your answer]
 - state how the human body reacts to the flu vaccine
 - explain why the flu vaccine does not protect a person from other viral diseases, such as measles
 - explain why a person who wants to be protected against the flu must get a new flu vaccine each year
 3. Explain the cause of the following diseases: allergies, autoimmune disorders, AIDS.