

HOMEWORK 18

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/bodysystems/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 maintains 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.

HOMEWORK 19

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

- A. Watch the following online video: “BrainPOP: Immune System” (see Mr. Sprague for password)
<https://www.brainpop.com/health/bodysystems/immunesystem>
- B. Watch the following online video: “BrainPOP: Vaccines” (see Mr. Sprague for password)
<https://www.brainpop.com/health/diseasesinjuriesandconditions/vaccines>
- C. Watch the following online video: “BrainPOP: Neurons” (see Mr. Sprague for password)
<https://www.brainpop.com/health/bodysystems/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.

HOMEWORK 20

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

- A. Reread all of your class notes from September through December.
- B. Answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. How do biologists determine if something is a living thing or not? Be specific.
 2. Design a controlled experiment to test the effectiveness of an energy drink that claims to increase attentiveness (ability to pay attention) for eight hours. Be sure to identify the independent variable, dependent variable, how the control group will be treated differently from the experimental group, two constants, and the data you will collect. [*Note: your data must be measureable (something you can count).*]
 3. Explain why eating salty popcorn makes you thirsty. [*Hint: it may be helpful to draw a picture showing the movement of molecules into or out of a cell to support your answer.*]
 4. Explain why your teachers are always saying that the most important property of a protein is its shape. Be sure to give some examples of important proteins and how their shape is important to their function.
 5. Define the term *homeostasis*. Give *one* example of two cell organelles working together to maintain homeostasis. Give *one* example of two human body systems working together to maintain homeostasis.

Mark your calendar...

**The tentative date for the Final Exam is
Tuesday, January 14, 2020 (D&H Bands)
or Wednesday, January 15, 2020 (J Band)!**