

**HOMEWORK #18**

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 Mr. Sprague is 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.

**HOMEWORK #19**

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

- A. Watch the following online video: “BrainPOP: Mitosis” (see Mr. Sprague for password)  
<https://www.brainpop.com/science/cellularlifeandgenetics/mitosis>
- B. Watch the following online video: “BrainPOP: Cancer” (see Mr. Sprague for password)  
<https://www.brainpop.com/health/diseasesinjuriesandconditions/cancer>
- C. Read Miller & Levine (textbook) pp. 239–247 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Describe how the life function of growth occurs through cell division (mitosis). In your answer, be sure to:
    - define the terms *growth* and *reproduction*
    - identify the cell organelle that contains the chromosomes
    - identify the material that chromosomes are made of
    - compare the number of chromosomes in a parent cell with the number in a daughter cell
    - describe the process of mitosis, including a few pictures to illustrate what is happening [Note: you are *not* required to memorize the names of the phases of mitosis or to use them in your answer to the question]
  2. Describe the causes of cancer and how the disease is treated. In your answer, be sure to:
    - define the term *cancer*
    - state *one* way that cancer cells act different than normal, healthy cells
    - identify *one* factor that can trigger cells to become cancerous
    - describe *one* method of treating cancer

**HOMEWORK #20**

*This assignment is due at the start of the class band on \_\_\_\_\_.*

- A. Watch the following online video: “BrainPOP: Reproductive Systems” (see Mr. Sprague for password)  
<https://www.brainpop.com/health/bodysystems/reproductivesystem>
- B. Read Miller & Levine (textbook) pp. 817–818 and complete the Male Reproductive System worksheet. The job of each organ can be found in the textbook or online. Please make arrangements to obtain any necessary information before the due date.

**\*\*Full credit will only be awarded if every blank box on the worksheet is completed.\*\***

**HOMEWORK #21**

*This assignment is due at the start of the class band on \_\_\_\_\_.*

- A. Watch the following online video: “BrainPOP: Period” (see Mr. Sprague for password)  
<https://www.brainpop.com/health/personalhealth/period>
- B. Read Miller & Levine (textbook) pp. 819–822 and complete the Female Reproductive System worksheet. The job of each organ can be found in the textbook or online. Please make arrangements to obtain any necessary information before the due date.

**\*\*Full credit will only be awarded if every blank box on the worksheet is completed.\*\***

**HOMEWORK #22**

*This assignment is due at the start of the class band on \_\_\_\_\_.*

- A. Watch the following online video: “BrainPOP: Hormones” (see Mr. Sprague for password)  
<https://www.brainpop.com/health/bodysystems/hormones>
- B. Read Miller & Levine (textbook) pp. 275–279 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
  - 1. Copy the following chart onto your paper and fill in the missing information.

Question	Mitosis	Meiosis
Are daughter cells diploid or haploid?		
Are daughter cells genetically identical to each other or different from each other?		
How many times does parent cell divide?		
Where in the body does this take place?		

- 2. Describe the roles of *two* human reproductive hormones. In your answer, be sure to:
  - identify *two* human reproductive hormones
  - identify the gland (organ) where *each* of these hormones are produced
  - state the role that *each* of these hormones plays in reproduction

*Mark your calendar...*

**Final Exam Friday, January 22, 2017**

*Extra credit coupons are due on the day of the Final Exam and will not be accepted late.*