

HOMEWORK 7

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

- A. Watch the following online video: “BrainPOP: Fetal Development” (see your teachers for password)
<https://www.brainpop.com/health/geneticsgrowthanddevelopment/fetaldevelopment>
- B. Watch the following online video: “BrainPOP: Stem Cells” (see your teachers for password)
<https://www.brainpop.com/science/cellularlifeandgenetics/stemcells>
- C. Read Miller & Levine (textbook) pp. 248–251 and p. 827. Answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Explain how harmful substances in the blood of a pregnant female can cause damage to a fetus.
In your answer, be sure to:
 - identify the structure through which materials diffuse between the mother and her fetus
 - explain why consuming alcohol is *more* harmful to the fetus than to the mother
 - identify *two* substances *other than alcohol* that can harm the developing fetus if they enter the mother’s body
 2. How is a cell that is *differentiated* different from a cell that is *undifferentiated*?
Are most of the cells in your body differentiated or undifferentiated?
 3. Explain in detail how you will prepare for the first quiz of Living Environment II. Be as specific as possible and be sure to include the exact amount of time you plan to spend on each activity you describe.

HOMEWORK 8

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

- A. Watch the following online video: “Tour of Basic Genetics”. **Be sure to watch all six sections.**
<http://learn.genetics.utah.edu/content/basics/oldtour>
- B. Read Miller & Levine (textbook) pp. 290–291 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Place the following terms in order from *smallest* to *largest*: cell, chromosome, gene, nucleus, nucleotide.
 2. Explain what a gene is and what it codes for.
 3. Explain the role of each protein in your body: *enzymes, hormones, receptors, hemoglobin, and pigments*.

HOMEWORK 9

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

- A. Check all your grades for this course on PupilPath. Review your work on the two quizzes and the first exam.
[If you do not have access to Pupil Path, you must see your guidance counselor, Ms. DeInnocentiis, or your teachers.]
- B. Write a letter to your teachers in which you reflect on your progress so far this semester. Be sure to:
- state the grades you received on Quizzes 1 and 2 and on Exam 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 the two quizzes and the first exam [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 us to know about your performance or attitude towards this course

Note: Your response must address all seven bulleted tasks 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 _____.

The username for the BrainPOP video is _____ and password is _____.

- A. Watch the following online video: “BrainPOP: RNA” (see your teachers for password)
<https://www.brainpop.com/science/cellularlifeandgenetics/rna>
- B. Read Miller & Levine (textbook) pp. 311–315 and answer the following questions in **complete sentences** on a **separate sheet of paper**. You may type or neatly handwrite your answers.
1. Use the DNA sequence below and the Universal Genetic Code to answer the questions that follow.

TAATGCCCTGAAAGT

- write the complementary DNA for the bases above
 - explain how you can tell that the code above is DNA and *not* mRNA
 - transcribe the DNA sequence into an mRNA sequence
 - use the genetic code chart to translate the mRNA sequence you just wrote into a sequence of amino acids
2. Explain how DNA makes you the unique individual that you are. In your answer, be sure to:
 - identify the place in the cell where DNA is found
 - identify the place in the cell where proteins are synthesized
 - identify the building blocks that make up a molecule of DNA
 - identify the building blocks that make up a molecule of protein