

Biology 40S | Macro - genetics

Mechanisms of Inheritance

Assignment 1

Read and answer the following big picture question by researching, discussing with a partner, asking other teachers, and reading online notes (www.sciyeung.com).

The big picture question will involve smaller leading questions that will help you along the way.

Big Picture question:

1. *Sexual reproduction occurs in most living organisms on earth. How does sexual reproduction provide the diversity in living organisms?*

Smaller questions to explore:

Use these smaller questions to guide you to answer the big picture question.

1. At the cellular level, what process allows the diversity of genetic makeup of our sex cells? Where does this happen? How does the process work? What exactly is happening during the process? What is the result from the process?
2. What advantages do organisms that perform sexual reproduction have compared to organisms that perform asexual reproduction? Why?
3. Once fertilization occurs, what process that allows cells to grow? How is this process different than the process stated in question 1?
4. Finally, if someone were to ask you "My grandparents both have red hair, and my parents both have blonde hair, how come I have red hair?" how would you answer the question? Provide the rationale behind your answer.

How to answer and present your answer:

- You are to work in a small group of 2-3.
- You will submit 1 good copy of the answer to the big question on a large sheet of paper (provided) including answers to smaller questions. You should include diagrams and annotations to your diagrams.
- 5 groups will be randomly selected to present your answers to the class.
- In addition to the answers, you are to provide a list of vocabulary that you may not have heard or seen prior to this assignment.

Bibliography:

- Include a bibliography of all of the sources that you have used.

Assessment:

Completed write up of your big picture question (accuracy and thoroughness) /15

Presentation of your answers (did everyone speak? Answer?) /10

List of vocabulary /5

Group use of class time (cell phone usage? Everyone on board?) /5

/35 (30 for non presenters)