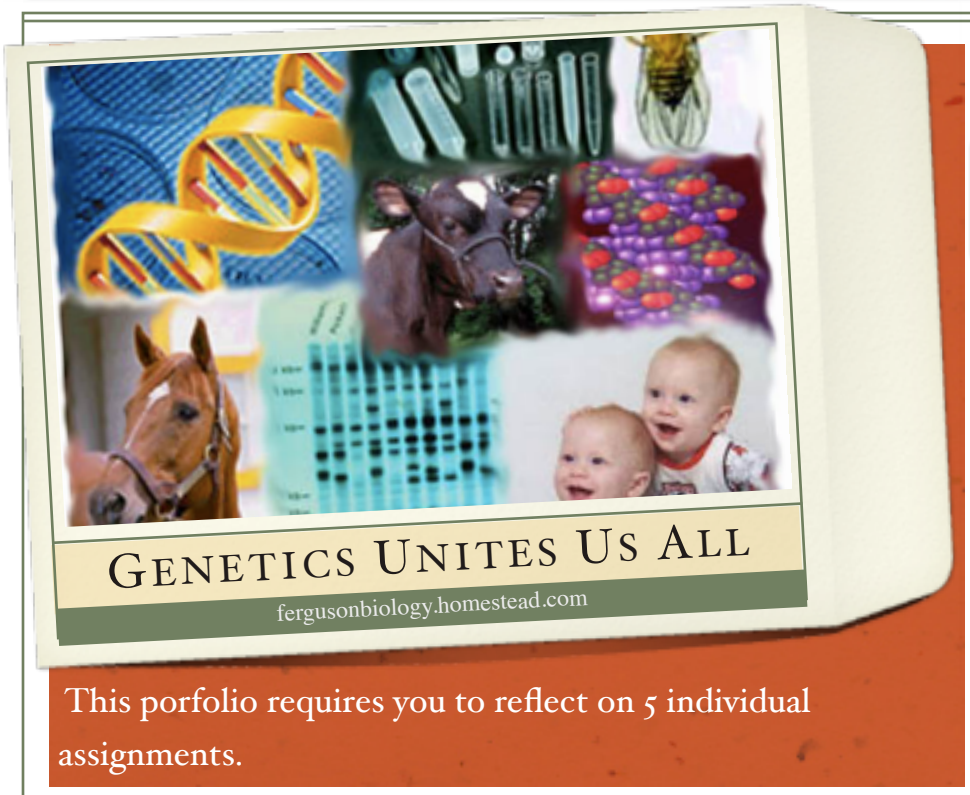
Life Science

7TH GRADE

GENETICS PORTFOLIO



This porfolio requires you to reflect on 5 individual assignments.

Order of Content for Each Assignment Porfolio Page:

1. Title: List assignment name and number
2. Objective(s)- list assignment objective(s)
3. Rationale- 2 or 3 sentences explaining what you think the purpose of the assignment was, what were you expected to learn, explain the content by using the appropriate vocabulary
4. Evidence- the completed and graded assignment with corrections attached
5. Reflection- one or two paragraphs (at least 5 sentences) based on the rationale, explain what you learned by completing this assignment (think about life skills you learned or practiced during the assignment- example: working with others, technology, etc.)

Be sure to include your Genetics Portfolio Rubric with your Portfolio.

Word to the Wise...DO NOT wait till the night before. True reflection takes time and serious thought. Good news is you don't have a Chapter 3 Test! This assignment has been created to make you THINK, so fire up those brain cells!

Due: Feb 14th

Portfolio Purpose:

A portfolio is a collection of evidence of what you have learned during a given project. The portfolio of your learning will include an objective, a rationale, evidence and a reflection.

Objective- states the purpose of the assignment

Rationale- is a statement that explains why I was required to do the assignment for this unit of study

Evidence- the completed, graded assignment

Reflection- a statement that clearly explains what I learned from doing this assignment

Assignment List:

Assignment #1: Meiosis Review Lab

Assignment #2: Dragon Meiosis Web Lab

Assignment #3: Bikini Bottom Genetics & Incomplete Dominance

Assignment #4: "Identical Twins, Too?" Project

Assignment #5: The Intimate Side of Plant Reproduction

Genetics Portfolio Assignment Information:

Assignment #1: Meiosis Review Lab

Objective: The student will illustrate the steps of a cell going through the process of Meiosis. The student will use the paper chromosomes to visually see the process on the table. Students will display and explain the Meiosis process on their paper.

Assignment: You will be assigned a certain number of chromosomes for your cell that is entering Meiosis. 1) As a group you will use those chromosomes to illustrate how chromosomes behave as they go through Meiosis I and Meiosis II. 2) You will examine all of your gametes and explain if the combination of chromosomes is the same for all cells. 3) You will explain how you know these cells just went through the process of Meiosis based on the number of chromosomes that are in each sex cell. 4) You will explain why you used two different colors of chromosomes. 5) You will explain if you would expect to get the same number of chromosomes if the cell had gone through Mitosis.

Assignment #2: Dragon Meiosis Web Lab

Objective: The student will determine how traits are passed from parents to their offspring and if there is a difference between offspring that came from the same parents.

Assignment: You will use the Meiosis Dragon web site to create four new offspring from the parents you were given. You need to record the genotypes for the parents as well as the offspring. You will examine all of the offspring and compare them to each other and to the parents and make conclusions about their genetic make-up.

Assignment #3: Bikini Bottom Genetics & Incomplete Dominance

Objective: The student will apply what they have learned about genetics to the genetic word problems for SpongeBob and other characters in Bikini Bottom. Students will use their knowlegde of dominant/recessive traits, genotypes, phenotypes, finding percentages of offspring for given traits, and incomplete dominance.

Assignment: Complete the worksheet titled "Bikini Bottom Genetics & Incomplete Dominance"

Assignment #4: "Identical Twins, Too?" Project

Objective: Students will successfully research the history of genetics and the importance of Gregor Mendel's experiments. Students will examine the relationships between the processes of mitosis and meiosis; relate the chromosome number to daughter cells and gametes. Students will examine the examples of variation within the species. Students will use Punnett squares and apply Mendel's Genetic Laws to predict genotype and phenotype ratios, incomplete dominance, complete dominance, codominance, sex-linked traits and multiple alleles, and ratios.

Assignment: Students will create a multi-media presentation to explain the possible outcome of the children of two sets of identical twins that marry each other. Will the cousins be identical? Students will use the content rubric as a guide to help develop their presentation. Students will complete a Self-Assessment for the portfolio assignment.

Assignment #5: The Intimate Side of Plant Reproduction

Objective: The student will identify the parts of flowers and understand plant reproduction, the importance of flowers, the pollination process, and the relationship between plants and animals in reproduction.

Assignment: 1) You will create a "new" species of flower out of recycled materials found around your home. You will label each of the parts of your flower and write a description of it's function. 2) You will also design and build a "new" species of polinator for your flower. You will describe the relationship between the two organisms.

Sample Porfolio Page

Elizabeth Frank
C Block

Assignment #1- Meiosis Review Lab

Objectives: The student will illustrate the steps of a cell going through the process of Meiosis. The student will use the paper chromosomes to visually see the process on the table. Students will display and explain the Meiosis process on their paper.

Rationale: I think the purpose of this lesson was.... I was supposed to learn.... explain the content by using appropriate vocabulary

Reflection: One to two paragraphs (at least 5 sentence paragraphs) based on the rationale, explain what you learned by completing this assignment (think about life skills you learned or practiced during the assignment- example: working with others, technology, etc.)