

Lesson Plan Title: Day Three Heredity

Teacher's Name: Paul Pacheco

Subject/Course: Honor Biology

Unit: Heredity

Grade Level: 9th

Stage 1-Desired Results	
Standard(s): • HS-LS3-1. Develop and use a model to show how DNA in the form of chromosomes is passed from parents to offspring through the processes of meiosis and fertilization in sexual reproduction. Clarification Statement: • The model should demonstrate that an individual's characteristics (phenotype) result, in part, from interactions among the various proteins expressed by one's genes (genotype). State Assessment Boundary: • Identification of specific phases of meiosis or the biochemical mechanisms involved are not expected in state assessment. • HS-LS3-3. Apply concepts of probability to represent possible genotype and phenotype combinations in offspring caused by different types of Mendelian inheritance patterns. Clarification Statements: • Representations can include Punnett squares, diagrams, pedigree charts, and simulations. • Inheritance patterns include dominant-recessive, codominance, incomplete dominance, and sex-linked.	
Aim/Essential Question: How do our genes affect how organisms look?	
Understanding(s): <i>Students will understand that . . .</i> - Dominate traits cover recessive traits - Homozygous have the same alleles - Heterozygous have different alleles - phenotypic traits are predictable - monohybrid and poly-hybrid crosses can predict one or more phenotypic outcomes	
Content Objectives: <i>Students will be able to . . .</i> - I will be able to differentiate between what is a dominant or recessive trait - I will be able to identify homozygous and Heterozygous traits - I will be able to predict phenotypic	Language Objectives: ELD Levels 4-6 <i>Students will be able to share their answers with the class in English</i> ELD Levels 3-6 <i>Students will be able to pronounce key terms with the class in English</i> ELD Levels 3-6 <i>Students will be able to understand dominant and recessive genes answering</i>

traits - I will be able to predict genotypes of parent-offspring - I will be able to execute monohybrid and poly-hybrid crosses	<i>the pear deck questions written in English</i>
Key Vocabulary • located in the digital notebook: https://docs.google.com/presentation/d/1O-Ef1AhyFuuOnsDleCKfrX6Ad8d-yUO09EJcl6f1YTo/edit#slide=id.g95c01df52a_1_461	
Stage 2-Assessment Evidence	
Performance Task or Key Evidence • Student self-reported feedback through peardeck responses • Heredity worksheet 2	
Key Criteria to measure Performance Task or Key Evidence • Open response style answering • Student answers	
Stage 3- Learning Plan	
Learning Activities: Do Now/Bell Ringer/Opener: Students will review Monohybrids by watching a video and answering the following questions 1. What does the uppercase B represent? 2. What does the lowercase b represent? 3. Are punnett squares full proof of what will happen in reality? Are they just predictions? Learning Activity 1: Students will analyze a Punnett Square - answer the following questions 1. Which parent is carrying the cystic fibrosis gene 2. Does any parent have cystic fibrosis 3. What percentage of offspring will inherit the cystic fibrosis gene 4. What percentage of offspring will not inherit the cystic fibrosis gene	

Video and Punnett square example is included in the slides
https://docs.google.com/presentation/d/1cuI6KE7h1fKNnKWm_d6UPfr9sxX97_OamShEcWl4cSc/edit#slide=id.SLIDES_API1194250819_0

Learning Activity 2: Review Heredity Worksheet 1 - Roleplaying: Teacher and Students reverse roles.

And then a class discussion on different answers.

Application: Cystic Fibrosis & inheritance and guinea pig alleles

Multiple Intelligences Addressed:

☒ Linguistic	☐ Logical-Mathematical	☐ Musical	☐ Bodily-kinesthetic
☐ Spatial	☒ Interpersonal	☐ Intrapersonal	☐ Naturalistic

Student Grouping

☒ Whole-Class ☒ Small Group ☐ Pairs ☒ Individual

Instructional Delivery Methods

☒ Teacher Modeling/Demonstration	☐ Lecture	☒ Discussion
☐ Cooperative Learning	☐ Centers	☒ Problem Solving
☐ Independent Projects		

Accommodations

N/A

Modifications

N/A

Homework/Extension Activities:

- Edpuzzle: Pedigrees

Materials and Equipment Needed:

- Smart Device
- Wifi Connection

Adapted from Grant Wiggins and Jay McTighe-*Understanding by Design*