Name: _____ Class Period: _____

"S7L3 a & b Genetics "

Start Date: January 9, 2018 End Date: January 26, 2018

Direct Instruction	**DOK 2- Developing-**	**DOK 3- Proficient**	**DOK 4- Distinguished**
Pre-Assessment (Place score at the bottom of the sheet) Self-Assess from the Pre-Assessment **PI A - i - Dominant, recessive, genotype, phenotype, heredity, allele, genetics, Punnett Square, heterozygous, homozygous, hybrid, Offspring, mutation** **Performance Indicator A - i - Powerpoint - Punnett Squares-** - Punnett Squares Complete Guided Reading notes **PI A -ii Sexual Reproduction, Asexual Reproduction, Binary fission, Regeneration Budding**	**PI A - i *Choose either #1, #2, or # 3*** 1. Create your own assignment. MUST be teacher approved. 2. Punnett Square Worksheet Punnett Square Worksheet 3. Punnett Square Practice Worksheet Punnett Square Practice Worksheet	**PI A - i Complete #1 & *the MUST DO*** **1**. Create your own Species - Identify 3 Phenotypes with their Genotype and share with teacher before completing the MUST DO. **Must Do: Design A Species -** In this project you are going to design your own imaginary species, and create traits for the species that follow the genetic rules that you have studied. The offspring creature should have at least 3 genetic traits for which Punnett squares are created. These traits could be hair color, size, shape, or other features. You choose the traits that you want to portray. **SEE ATTACHED INSTRUCTIONS AND RUBRIC** **PI A -ii - *Choose either #1 or #2*** **1**. Create your own assignment. MUST be teacher approved. 2, Comparison Chart - Students will compile a comparison chart of 2 organisms, one that either	**PI A - i** Super Baby Description/Directions: You are a television producer charged with creating a new exciting show. As a cautious new producer, you choose to spin off successful existing shows. You decide to create an offspring of two super-heroes. Your goal is to form your offspring, otherwise known as "Super Baby," and pitch your idea to the production company executives. Your pitch will include an illustration of the actual offspring as well as a written presentation of the characteristics of the super baby that can not be seen. Also, your actual offspring may not have all of the traits you wish for your new "Super Baby." Explain what two super heroes you would select for breeding to get the super hero traits.

Performance Indicator PI A -ii - Powerpoint - Asexual vs Sexual Reproduction **Asexual vs Sexual Reproduction Nearpod** Note taking - Take detailed notes on the Nearpod	**_____** **_____** **____PI A -ii** ***Choose either #1, #2, or #3*** 1. Create your own assignment. MUST be teacher approved. 2. Asexual vs Sexual Reproduction Worksheet Asexual vs Sexual Reproduction Worksheet 3. Create a Magic Book, Booklet, or Brochure on Asexual and Sexual Reproduction SEE ATTACHED INSTRUCTIONS	reproduces sexually and one that reproduces asexually or uses both reproductive strategies. Be prepared to discuss the general characteristics for organisms that use each reproductive strategies. Using scientific reasoning create an argument for the advantages and disadvantages of all forms of reproduction.	
Vocabulary Quiz Attempt: _____	DOK2 Formative Assessment on Illuminate. See teacher for Access Code. Attempt 1: _____	DOK3 Formative Assessment on Illuminate. See teacher for Access Code. Attempt 1: _____	Formative Assessment: Same as Assignment Score: _____

Pre-Assessment: _____ **Post-Assessment: _____** **Goal for Playlist: Level _____**

Unit Competency: MS 6 Growth, Development, and Reproduction of Organisms, Natural Selection, and Adaptations

Students will apply scientific and engineering practices to understand and analyze the relationship between genetics, adaptation, and biodiversity.

Performance Indicators

A. Develop a model (for example a Punnett square) and construct and explanations that describes the inheritance of specific traits from genes located on chromosomes in both sexual and asexual reproduction. (S7L3 a-b)

Learning Targets:

1. I can compare & contrast genotypes and phenotypes.
2. I can compare and contrast dominant and recessive traits.
3. I can describe a Punnett square and demonstrate its use in determining the possible combinations of characteristics of offspring.
4. I can state Mendel's laws and explain how he arrived
5. I can differentiate between homozygous and heterozygous.
6. I can compare and contrast the genotypic and phenotypic ratios that are obtained in various crosses.
7. I can state Mendel's laws and explain how he arrived at his conclusions: *Law of Dominance * Law of Independent Assortment * Law of Segregation.
8. I can compare the characteristics of asexual and sexual reproduction (identical vs unique offspring).

Unit GSE:

S7L3. Students will recognize how biological traits are passed on to successive generations.
a. Explain the role of genes and chromosomes in the process of inheriting a specific trait.
b. Compare and contrast that organisms reproduce asexually and sexually (bacteria, protists, fungi, plants & animals).

Enduring Understanding
Students will understand that…
1. Many traits of an organism are inherited from its biological parents.
2. Genes and chromosomes determine the expressions of inherited traits.
3. All organisms reproduce sexually or asexually.

Essential Questions
1. Why do I look the way I do?
2. How do genes contribute to an organism's survival?
7. How can our knowledge of genetics be useful?
8. Why do some organisms reproduce asexually & some sexually?

3. Why are genes important in determining hereditary traits?
4. Why do I look the way I do?
5. How can I predict what traits will be passed from one generation to another?
6. How is genetic material passed from parents to their offspring?
9. Why do living things need different methods for reproduction, not just one?

Week of	Monday	Tuesday	Wednesday	Thursday	Friday	To Do:
1/09	PL - No School	9 PI A Direct Instruction DOK 2 - DOK 4	10 - PI A D/I DOK 2 - DOK 4	11 -PI A D/I DOK 2 - Vocab Quiz / DOK 2 Check-Up DOK 4	12 - PI A D/I- DOK2 DUE Vocab Quiz / DOK 2 Check-Up DOK 4	
12/4	15 - PI A D/I DOK 3 - DOK 4	16- PI A D/I DOK 3 - DOK 4	17-PI A D/I DOK 3 - DOK 4	18- PI A D/I DOK 3 - DOK 4 DOK 3 Check-Up	19 - PI A D/I DOK 3 DUE- DOK 4 DOK 3 Check-Up	
12/11	22- PI A -ii D/I DOK 1-3 Check-Up - DOK 4	23 - PI A -ii Direct Instruction - DOK 3 Check-Up - DOK 4	24 - PI A -ii Direct Instruction - DOK 3 - DOK 3 Check-Up - DOK 4	PI A -ii - PI B Direct Instruction - DOK 3 - DOK 3 Check-Up - DOK 4	26 Punnett Squares/ Asexual/Sexual Reproduction Test DOK 4 DUE	

Resources

Video: Introduction to Genetics https://www.youtube.com/watch?v=B_PQ8qYtUL0&list=PLISBHwlJXpn2bmLjfiShKcIHpBPcov24O&index=8
Video: DNA, Chromosomes, Genes, and Traits: An Intro to Heredity
https://www.youtube.com/watch?v=8m6hHRlKwxY&feature=em-subs_digest
Video: Genetics Introduction
https://www.youtube.com/watch?v=7CMHzVNnh1I&list=PLpVSLnEyW17YVOw9iNL3Hj2-v4dXvcRGA
Video: What are Punnett Squares
https://www.youtube.com/watch?v=V_pl5lcSUFg&list=PLpVSLnEyW17YVOw9iNL3Hj2-v4dXvcRGA&index=2
Video: What are Pedigree Charts
https://www.youtube.com/watch?v=Wuk0W10EveU&list=PLpVSLnEyW17YVOw9iNL3Hj2-v4dXvcRGA&index=3
Video: What is Selective Breeding
https://www.youtube.com/watch?v=W_CnR0Ak604&list=PLpVSLnEyW17YVOw9iNL3Hj2-v4dXvcRGA&index=4

Video: Asexual and Sexual Reproduction https://www.youtube.com/watch?v=fcGDUcGjcyk&list=PLwL0Myd7Dk1FVxYPO_bVbk8oOD5EZ2o5W
Video: Monohybrid and the Punnett Square Guinea Pig
https://www.youtube.com/watch?v=i-0rSv6oxSY&index=3&list=PLwL0Myd7Dk1FVxYPO_bVbk8oOD5EZ2o5W
Video: Pedigrees
https://www.youtube.com/watch?v=Gd09V2AkZv4&list=PLwL0Myd7Dk1FVxYPO_bVbk8oOD5EZ2o5W&index=8
Video: Mitosis: The Amazing Cell Process that Uses Division to Multiply! (Updated)
https://www.youtube.com/watch?v=f-ldPgEfAHI&list=PLwL0Myd7Dk1HwPKULqkJoNkfOnT3aTzq6
Video: Meiosis (Updated)
https://www.youtube.com/watch?v=VzDMG7ke69g&list=PLwL0Myd7Dk1HwPKULqkJoNkfOnT3aTzq6&index=2
Video: Chromosome Numbers During Division: Demystified!
https://www.youtube.com/watch?v=gcz1FOWw0Cg&list=PLwL0Myd7Dk1HwPKULqkJoNkfOnT3aTzq6&index=3