

UNIT 7

Grade	10
Unit of Study	Basic Genetics & Cell Division
Length of Unit	3-4 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How are traits inherited from parents and passed on to offspring?	Genes from parents are passed to offspring through chromosomes.
How can predictions be made about whether a trait will occur in offspring?	Punnett Squares can be used to predict the likelihood of a trait in offspring. Pedigrees show the history of traits in a family.
What cellular processes contribute to the growth of an organism and how can that negatively impact an organism?	Mitosis allows cells to divide for organisms to grow. Uncontrolled mitosis leads to cancer.

Missouri Learning Standards	
<u>Biology Power Standards</u>	Supporting Standards
Power Standard 2: I can understand that there is a genetic basis for the transfer of biological characteristics from one generation to the next through reproductive processes.	LS1.A.1, LS3.B.4, LS4.B.2, & LS1.B.1

Unit 7 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
LS1.A.1	Inheritance	I can use a model to recognize that all cells contain DNA, DNA is divided into genes that code for specific proteins, and tissues are systems of specialized cells that use specific proteins.	Allele Genotype Phenotype

LS3.B.4	Punnett Squares & Pedigrees	I can perform mathematical functions and use appropriate statistical analyses of data to determine the probability of a trait in a population.	Punnett Square Pedigree Homozygous Heterozygous Dominant Recessive
LS4.B.2	Impact of Mutations	I can evaluate and use the data analyses as evidence to support explanations about positive and negative effects on survival and reproduction as related to an individual's expression of a variable trait, natural selection as the cause of increases and decreases in heritable traits over time as related to reproductive success, and the changes in the distribution of traits in a population.	Mutation
LS1.B.1	Growth, Differentiation, & Cancer	I can use the mitosis model to show how mitosis and differentiation produce complex offspring.	Cell Cycle Mitosis Differentiation Cancer

MLS	Learning Activities	
LS1.A.1	Spongebob Genetics	Must Do ▾
LS3.B.4 LS4.B.2	Puppies/Kittens Offspring Activity	Must Do ▾
LS3.B.4	Harry Potter Pedigrees and/or Puppy Pedigree	Must Do ▾
LS1.B.1	Cancer Lab	Must Do ▾

Assessments		
MLS	Description or Location	Rubric/Location
LS1.A.1 LS3.B.4 LS4.B.2 LS1.B.1	Unit 7 Test	Pear Assessment
LS3.B.4 LS1.A.1 LS4.B.2	O'Hare Family CER	Paper

Additional Resources

[Quizizz.com](https://www.quizizz.com), [Blooket.com](https://www.blooket.com), [Quizlet.com](https://www.quizlet.com), [Openstax.org](https://openstax.org)