

Unit: Science for Success	Lesson 3: Life Science Genetics and Heredity: Central Dogma of Molecular Biology
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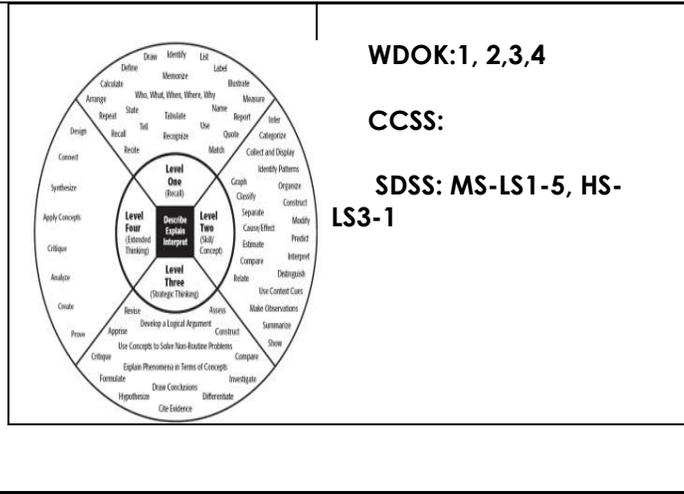
Objectives
 The student will be able to:

- Discuss genetics and heredity.
- Explain Gregor Mendel and his experiments with peas.
- Explain a Punnett Square and how it helps to predict the traits an offspring may inherit.
- List some traits that are inherited.
- Explain dominant and recessive genes.
- Explain co-dominance and incomplete dominance.

This will take at least two class periods!

Materials:

- New Readers press Science for the GED Test pages 11-15.
- Computers
- <https://www.brainpop.com/science/cellularlifeandgenetics/heredity/> Gregor Mendel video (2:49)
- <https://docs.google.com/presentation/d/1P-LpqvmnKaeZ8JBpBUL6QewNVrzRvtNHeeR7f0a644/present?slide=id.i0> Power point about Mendel's work (Mendel rap is on slide 14.)
- 1 page worksheet from the power point
- **4 popsicle sticks per student**
- <http://learn.genetics.utah.edu/content/inheritance/> Animation explaining heredity(called What is Heredity? Tour)
- Heredity Simulation Worksheet
[http://www.biologycorner.com/worksheets/Heredity%20Simulation%20\(hornimonsters\).pdf](http://www.biologycorner.com/worksheets/Heredity%20Simulation%20(hornimonsters).pdf)
- Rulers
- <http://dna.frieger.com/calc-quick.php> (site that simply figures several inherited traits in humans—Use as a reference.)
- <http://www.csun.edu/~dcw04262/files/pdf/Punnett%20Square%20Practice%20Page%20s.pdf> Punnett Square Practice Pages Worksheet
- http://www.glencoe.com/sites/common_assets/science/virtual_labs/E09/E09.html Build a monster activity on the computer
- <http://www.livebinders.com/play/play?id=2013145&present=true> Frankenfish activity. Each student will need directions and a plain piece of paper.



Key Words

- Dogma- explanation
- Translation- a process where proteins are made
- DNA- deoxyribonucleic acid-carries genetic information
- Gene- a part of a DNA molecule, which is part of a chromosome
- RNA- ribonucleic acid, a cell macromolecule that helps make protein
- Alleles- one of two or more alternative forms of a gene, occupying the same position locus on paired chromosomes and controlling the same inherited characteristic
- Genotype-a pair of alleles an organism has for a trait.
- Phenotype- an organism's appearance or characteristic that results from the genotype.
- Homozygous- having two identical genes at the corresponding loci of homologous chromosomes.
- Heterozygous- having dissimilar pairs of genes for any hereditary characteristic.

Introduction: Our chapter is titled Organization of Life and today we are moving from cell theory into genetics and heredity. Has anyone ever said to you, "You're just like your mother?" Well, maybe you are, but you are probably a mixture of both of your parents.

- Instructional Activities:**
1. Watch the power point about Gregor Mendel and his famous experiments with pea plants and fill in the worksheet when you get to the two screens that review the information.
 2. View the Gregor Mendel Rap at the end of the power point.
 3. Read pages 11-14 from *Science for the GED Test* and complete the guided practice at the end of the sheet.
 4. Complete the worksheets on heredity and the Punnett square for practice.
 5. Complete page 15 from *Science for the GED Test* on the computer, answering the questions as an essay.
 6. Complete the build a monster activity together on the LCD and laptop.
 7. Hand out paper and directions plus two pennies per student and colored pencils to do the Frankenfish assignment. Make sure they each write the genotype for each roll on their page.

Student Product

- Turn in the worksheets for the instructor to check over.
- Turn in the sample question essay to the instructor.