Subject: _____ Unit: __Genetics_____ # of Days _____

Essential Standards _____ Clarifying Objective _____

Big Ideas in NOUNS and ADJECTIVES (Vocabulary) Heredity, traits, genetics, gametes, pure bred, hybrid, monohybrid cross, phenotype, genotype, alleles, chromosomes, dominant, recessive, law of segregation, homozygous, heterozygous, law of independent assortment, Punnett square, incomplete dominance, codominance, polygenic inheritance(skin, hair, and eye color), multiple alleles, sex-linked(color-blindness, hemophilia) inheritance, pedigree, carrier, autosomal inheritance(sickle-cell, cystic fibrosis, Huntington's) Karyotype, mutation, environmental factors(diabetes, lung and mouth cancer, skin cancer, PKU, heart disease)	Real World Performance in VERBS Understand
Understanding(s): Inheritance patterns, environmental influence on phenotype	Essential Questions/I Can Statements: 1. I can identify gender when viewing a karyotype. 2. I can identify chromosomal abnormalities when viewing a karyotype. 3. I can identify nondisjuction as the cause of some chromosomal abnormalities. 4. I can determine genotypes of the parents based on observations of the offspring. 5. I can determine genotypic and phenotypic ratios of offspring based on the parents. 6. I can identify dominant/recessive heritance patterns. 7. I can construct a Punnett square(monohybrid cross) and analyze results of the offspring. 8. I can identify traits having a wide range of phenotypes as being controlled by more than one pair of genes(polygenic) 9. I can identify the relationship between malaria and sickle-cell anemia. 10. I can differentiate between autosomal and sex-linked inheritance.(Huntington's, sickle-cell, cystic fibrosis, color blindness, hemophilia) 11. I can solve and interpret Punnett squares involving multiple alleles traits(blood traits) 12. I can analyze offspring blood types to determine

	parental relationships. 13. I can identify sex chromosomes and their relationship to gender. 14. I can infer why sex-linked traits are more prevalent in males. 15. I can interpret a pedigree to identify genotypes and inheritance patterns.(autosomal vs. sex-linked) 16. I can identify the relationships between environmental factors and genetic inheritance in the expression of cancer, diabetes, PKU and heart disease.
Performance Task Ideas/Activities: -Meiosis posters -Pictures on cards; make them put the pictures in order -Genetics of Parenthood for independent assortment -Marshmutts (meiosis)- Anita and Julie (hard copy) -Dragon genetics (Biologica)- computer simulation -Examples for 3.2.3 –hydrangea, Siamese cats - Problem sets (for incomplete dominance, codominance, blood typing, etc.) - Pedigree analysis (sex-linked vs. autosomal) -Video: Ecology of the Human Body (Cindy Davidson); draw the Life Cycle -* 3.4 *case studies needed for 3.2.3	Websites: http://waynesword.palomar.edu/colorbl1.htm http://www.cliffsnotes.com/study_guide/Inheritance-Patterns.topicArticleId-8741,articleId-8615.html http://learn.genetics.utah.edu/content/begin/traits/ http://learn.genetics.utah.edu/content/begin/traits/activities/pdfs/Pick%20the%20Risk_Public.pdf http://learn.genetics.utah.edu/content/begin/traits/activities/pdfs/Risk%20Continuum_Public.pdf http://learn.genetics.utah.edu/content/begin/traits/karyotype/ http://learn.genetics.utah.edu/content/begin/traits/predictdisorder/ ?????? http://learn.genetics.utah.edu/content/begin/traits/blood/ http://serendip.brynmawr.edu/sci_edu/waldron/ http://serendip.brynmawr.edu/sci_edu/waldron/pdf/GeneticsProtocol.pdf http://www.nclark.net/Genetics

<table>
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<td>Literacy Shift Ideas: (Reading/writing)
Case studies
The Blue People of Troublesome Creek
Constructing pedigrees from a written family history.(Royal Hemophilia)
Lorenzo's Oil
http://news.bbc.co.uk/go/em/fr/-/2/hi/health/3907559.stm >

Understanding Genetics: Human Health and the Genome
Source: thetech.org

Would it be genetically possible for two individuals to populate the Earth? What complications could arise?

http://www.scientificamerican.com/article.cfm?id=identical-twins-genes-are-not-identical
http://www.phschool.com/science/science_news/biology/genetics.html</td>
<td>21st Century Themes
○ Global Awareness
○ Financial, Economic, Business & Entrepreneurial Literacy
○ Civic Literacy
○ Health Literacy
○ Environmental Literacy</td>
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