

Planned Course: Genetics		Course Number: S407	Department: Science
Unit: Human Genetics/Heredit		Grade Level: 10-12	
Estimated Time: 5 weeks		Level/Track:	Date Approved: 8/24/09
PA Academic Standards	Core Concepts (in question format) • Skills/Knowledge	Activities/Strategies/Study Skills (identify some activities as remedial or enrichment activities)	Assessments (include types and topics)

S11.A.2.1.3 Use data to make inferences and predictions, or to draw conclusions demonstrating understanding of experimental limits.	<p>► What are some common genetic mapping techniques and how are they useful in studying the human population?</p> <ul style="list-style-type: none"> • Students will be able to distinguish between chromosome mapping, linkage mapping and how recombination frequencies are used in the process. 	<ul style="list-style-type: none"> – Teacher will lecture on Pedigrees, linkage maps, chromosome maps, and Karyotyping – Lab – Linkage mapping – Lab – Karyotype 	<p>All assessments are aligned to the core concepts:</p> <ul style="list-style-type: none"> • Worksheets • Lab packets on Karyotype • Chapter tests with objective and subjective questions
S11.A.2.1.4 Critique the results and conclusions of scientific inquiry for consistency and logic.	<p>► What do the techniques mentioned above offer as results, and what kind of conclusions can be made from the results of said techniques?</p> <ul style="list-style-type: none"> • Students will be able to demonstrate how the above techniques can be utilized to pinpoint the order of genes on a chromosome. 	<ul style="list-style-type: none"> – Cooperative learning worksheets – Analysis of lab results and what can be concluded from each 	<ul style="list-style-type: none"> • Worksheets • Lab packets on Karyotype • Chapter tests with objective and subjective questions
S11.B.2.2 Describe how genetic information is inherited and expressed.	<p>► What are some genetic conditions in humans that follow Mendel’s Laws?</p>	<ul style="list-style-type: none"> – Worksheets – Cooperative learning activities where students 	<ul style="list-style-type: none"> • Worksheets • End of Chapter

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S11.B.2.2.3 Explain how different patterns of inheritance affect population variability.	<ul style="list-style-type: none"> • Students will be able to discuss the etiologies and pathologies of several common disorders such as cystic fibrosis and Marfan's syndrome. <p>► What are some genetic conditions in humans that do not follow Mendel's Laws?</p> <ul style="list-style-type: none"> • Students will be able to discuss complications of sickle cell anemia. • Students will be able to discuss how blood typing works. • Students will be able to discuss polygenic traits. 	<p>study each others phenotypes</p> <ul style="list-style-type: none"> – Transparencies – Teacher lecture <ul style="list-style-type: none"> – Teacher lecture on sex-linked traits, multiple alleles, codominance, and incomplete dominance in the human population – Worksheets – Video – “Lorenzo’s Oil” – Video – “Is it a Boy or a Girl?” 	<p>assessment questions</p> <ul style="list-style-type: none"> • Chapter tests with objective and subjective questions <ul style="list-style-type: none"> • Worksheets • Chapter assessment questions • Subjective article critiques on videos viewed
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