

Planned Course: Genetics		Course Number: S407	Department: Science
Unit: Biotechnology		Grade Level: 10-12	
Estimated Time: 3 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)

<p>ASSESSMENT ANCHOR S11.B.2.1.3 Explain the role of Selective Breeding and Biotechnology in changing the genetic makeup of a population.</p>	<ul style="list-style-type: none"> ▶ What are some common Biotechnology tools used to alter genetic makeup of an organism? <ul style="list-style-type: none"> • Students will be able to explain cloning, PCR, and DNA fingerprinting. ▶ How is cloning performed? <ul style="list-style-type: none"> • Students will be able to explain the steps in cloning. ▶ What are the advantages of cloning? Disadvantages? <ul style="list-style-type: none"> • Students will be able to discuss the potential benefits and risks of cloning. ▶ How is modern medicine using the knowledge of immunogenetics in areas such as organ transplants? ▶ What are some uses for Gel electrophoresis? <ul style="list-style-type: none"> • Students will be able to discuss how these techniques are useful in forensics and the advancement of medical treatments. 	<ul style="list-style-type: none"> – Teacher lecture on PCR, Gel electrophoresis, and DNA recombination – Worksheets – Transparencies – Lab – Gel electrophoresis “Crime Scene Investigation” – Video – “Designer Babies” – Class Debate: Pro cloning vs. Con cloning – Field trip – Biotechnology Lab- 	<ul style="list-style-type: none"> • Worksheets • Debate articles • Chapter Exam questions • Homework • Lab practical Gel electrophoresis • Assessment of field trip
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	<ul style="list-style-type: none"> • Students will be able to discuss risks that may arise during the genetic therapy trials. 		
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