

RCSS High School Science Unit Plans

Subject: Biology Unit: Molecular Genetics# of Days 10 instructional days

Essential Standards _____ Clarifying Objective _____

<p>Big Ideas in NOUNS and ADJECTIVES (Vocabulary)</p> <p>**see attached vocabulary list (Molecular genetics and Biotechnology)</p>	<p>Real World Performance in VERBS</p> <p>Understand Analyze</p>
<p>Understandings:</p> <p>Structure and function of DNA Protein synthesis (DNA→RNA→Protein→Trait) Mutations How DNA controls all cell activities Comparison of Prokaryotic and Eukaryotic Gene expression Cell cycle , S phase, (DNA Replication) Gel electrophoresis Transgenic organisms, bacterial transformation Ethical issues</p>	<p>Essential Questions/I Can Statements:</p> <p>**See attached "I Can..." statements (Molecular genetics and Biotechnology)</p>
<p>Performance tasks:</p> <ul style="list-style-type: none"> -DNA extraction from saliva, onion, or strawberries (spit in test tube; dish detergent; ice cold ethanol). -Replication drawing/cartoon strips - Alien Encounters/ Snorks activities -Biotechnology notebook: Genes to Protein (laminated pieces: used to build models or to manually manipulate the processes of DNA replication, RNA transcription, translation) -Sentence translation (transcription/translation) -Transcription/translation recipe activity -Mutation of sequences to see the change in the amino acid sequence translated. -Bacterial transformation labs (wet or paper) -Gel electrophoresis labs (wet or paper) -Marshmutts 	<p>Websites:</p>
<ul style="list-style-type: none"> -Industrial and agricultural uses of biotechnology. -Ethical issues in terms of rights to privacy of personal information. (genetic testing for specific markers for diseases). 	<p>21st Century Themes</p> <ul style="list-style-type: none"> ○ Global Awareness ○ Financial, Economic, Business & Entrepreneurial Literacy ○ Civic Literacy ○ Health Literacy ○ Environmental Literacy

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Assessments	Additional Info:
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