



## Science 8

### TERM 1

TERM 1	
Term 1 Dates	MS College and Career Readiness Standards
WK 1: Aug 6-16	<b>SCIENCE and ENGINEERING PRACTICES</b> <ul style="list-style-type: none"> <li>• Ask Question and Define Problems</li> <li>• Develop and Use Models</li> <li>• Analyze and Interpret Data</li> <li>• Plan and Conduct Investigations</li> <li>• Use Mathematical and Computational Thinking</li> <li>• Engage in Scientific Argument from Evidence</li> <li>• Construct Explanations and Design Solutions</li> <li>• Obtain, Evaluate, and Communicate Information</li> </ul>
<b><i>Unit Assessment 1 Scientific Inquiry</i></b>	
WK 2: Aug 19-23	<b>L.8.2A.1</b> Obtain and communicate information about the relationship of genes, chromosomes, and DNA and construct explanations comparing their relationship to inherited characteristics. <b>L.8.2A.2</b> Create a diagram of mitosis and explain its role in asexual reproduction, which results in offspring with identical genetic information. <b>L.8.2A.3</b> Construct explanations of how genetic information is transferred during meiosis. <b>L.8.2A.4</b> Engage in discussion using models and evidence to explain that sexual reproduction produces offspring that have a new combination of genetic information different from either parent. <b>L.8.2A.5</b> Compare and contrast advantages and disadvantages of asexual and sexual reproduction.
WK 3: Aug 26-30	
WK 4: Sept 2-6	
<b><i>Mid-term OR Unit Assessment 2 (WK 4.5/ WK 5)</i></b>	
<b><i>Sexual &amp; Asexual Reproduction</i></b>	
WK 5: Sept 9-13	<b>L.8.2B.1</b> Construct an argument based on evidence for how environmental and genetic factors influence the growth of organisms. <b>L.8.2B.2</b> Use various scientific resources to research and support the historical findings of Gregor Mendel to explain the basic principles of heredity. <b>L.8.2B.3</b> Use mathematical and computational thinking to analyze data and make predictions about the outcome of specific genetic crosses. (monohybrid Punnett squares) involving simple dominant/recessive traits. <b>L.8.2B.4</b> Debate the ethics of artificial selection (selective breeding, genetic engineering) and the social impact of humans changing the inheritance of desired traits in organisms.
WK 6: Sept 16-20	
<b><i>Unit Assessment 3 Inherited and Acquired Characteristics</i></b>	
WK 7:	<b>L.8.2C.1</b> Communicate through diagrams that chromosomes contain many distinct genes

Sept 23-27	and that each gene holds the instructions for the production of specific proteins, which in turn affects the traits of the individual (not to include transcription or translation ) <b>L.8.2C.2</b> Construct scientific arguments from evidence to support claims about the potentially harmful, beneficial, or neutral effects of genetic mutations in organisms.
WK 8: Sept 30- Oct 4	<i>Review for Assessment</i>
WK 9: Oct 7-11	<b><i>Benchmark OR Unit Assessment</i></b>

## TERM 1

### Recurring Standards

**Standards taught the first 4-5 weeks; the mid-term data will indicate the remediation needed.**

WK 5: Sept 9-13	L8.2A.1 & L.8.2A.2
WK 6: Sept 16-20	L8.2A.3
WK 7: Sept 23-27	L8.2A.4



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### TERM 2

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Term 2 Dates	MS College and Career Readiness Standards
WK 1: Oct 14-18	<p><b>L.8.4A.1</b> Use various scientific resources to analyze the historical findings of Charles Darwin to explain basic principles of natural selection.</p> <p><b>L.8.4A.2</b> Investigate to construct explanations about natural selection that connect growth, survival and reproduction to genetic factors, environmental factors, food intake, and interactions with other organisms.</p>
WK 2: Oct 21-25	<p><b>L.8.4A.2</b> Investigate to construct explanations about natural selection that connect growth, survival and reproduction to genetic factors, environmental factors, food intake, and interactions with other organisms.</p>
<b>Unit Assessment 1 Natural Selection</b>	
WK 3: Oct 28- Nov 1	<p><b>L.8.4B.1</b> Analyze and interpret data (ex. pictures/graphs) to explain how natural selection may lead to increases and decreases in specific traits in populations over time.</p> <p><b>L.8.4B.2</b> Construct written and verbal explanations to describe how genetic variations of traits in a population increase some organism’s probability of surviving and reproducing in a specific environment.</p> <p><b>L.8.4B.3</b> Obtain and evaluate scientific information to explain that separated populations, that remain separated, can evolve through mutations to become a new species (speciation).</p> <p><b>L.8.4B.4</b> Analyze displays of pictorial data to compare and contrast embryological and homologous/analogous structures across multiple species to identify evolutionary relationships.</p>
WK 4: Nov 4-8	<p><b>E.8.7.1</b> Use specific evidence to create a timeline of Earth’s history that depicts relative dates from index fossil records and layers of rock (strata)</p> <p><b>E.8.7.2</b> Create a model of the processes involved in the rock cycle and relate it to the fossil record.</p> <p><b>E.8.7.3</b> Construct and analyze scientific arguments to support claims that most fossil evidence is an indication of the diversity of life that was present on Earth and that relationships exist between past and current life forms.</p> <p><b>E.8.7.4</b> Use research and evidence to document how evolution has been shaped both gradually and through mass extinctions by Earth’s varying geological conditions (ex. Climate change, meteor impacts, and volcanic eruptions).</p>
<b>Mid-term OR Unit Assessment 2 (WK 4.5/ WK 5)</b>	
<b>Common Ancestry/ Earth’s History</b>	
WK 5: Nov 11-15	<p><b>P.8.6.1</b> Collect, organize and interpret data about the characteristics of sound and light waves to construct explanations about the relationship between matter and energy.</p> <p><b>P.8.6.2</b> Investigate research-based mechanisms for capturing and converting wave energy (frequency, amplitude, wavelength and speed) into electrical energy.</p>

WK 6: Nov 18-22	<p><b>P.8.6.3</b> Conduct simple investigations about the performance of waves to describe their behavior (ex. Refraction, reflection, transmission, and absorption) as they interact with various materials (ex. Lenses, mirrors, prisms)</p> <p><b>P.8.6.4</b> Use scientific processes to plan and conduct controlled investigations to conclude sound is a wave phenomenon that is characterized by amplitude and frequency.</p>
<b><i>Unit Assessment 3 Wave Characteristics/ Wave Properties</i></b>	
WK 7: Dec 2-6	<p><b>P.8.6.5</b> Conduct scientific investigations that describe the behavior of sound when resonance changes (ex. Waves in a stretched string and design of musical instruments).</p> <p><b>P.8.6.6</b> Obtain and evaluate scientific information to explain the relationship between seeing color and the transmission, absorption, or reflection of light waves by various materials.</p>
WK 8: Dec 9-13	<p><b>P.8.6.7</b> Research the historical significance of wave technology to explain how digitized tools have evolved to encode and transmit information ( telegraph, cell phones, and wireless computer networks)</p> <p><b>P.8.6.8</b> Compare and contrast the behavior of sound and light waves to determine which types of waves need a medium for transmission.</p>
<b><i>Unit Assessment 4 optional due to BMA</i></b>	
<b><i>Sound &amp; Light</i></b>	
WK 9: Dec 16-20	<b><i>Benchmark OR Unit Assessment</i></b>

## TERM 2

### Recurring Standards

**Standards taught the first 4-5 weeks; the mid-term data will indicate the remediation needed.**

WK 5: Nov 11-15	L.8.4A.1 & L.8.4A.2
WK 6: Nov 18-22	L.8.4B.1 & L.8.4B.2
WK 7: Dec 2-6	L.8.4B.3 & L.8.4B.4



## Science 8

### TERM 3

TERM 3	
Term 3 Dates	MS College and Career Readiness Standards
WK 1: Jan 6-10	E.8.9A.1 Investigate and explain how the flow of Earth’s internal energy drives the cycling of matter through convection currents between Earth’s surface and the deep interior causing plate movements
WK 2: Jan 13-17	E.8.9A.2 Explore and debate theories of plate tectonics to form conclusions about past and current movements of rock at Earth’s surface throughout history. E.8.9A.3 Map land and water patterns from various time periods and use rocks and fossils to report evidence of how Earth’s plates have moved greater distances, collided, and spread apart.
WK 3: Jan 20-24	E.8.9A.4 Research and assess the credibility of scientific ideas to debate and discuss how Earth’s constructive and destructive processes have changed Earth’s surface at varying time and spatial scales.
WK 4: Jan 27-31	E.8.9A.5 Use models that demonstrate convergent and divergent plate movements that are responsible for most landforms and the distribution of most rocks and minerals within Earth’s crust. E.8.9A.6 Design and conduct investigations to evaluate the chemical and physical processes involved in the formation of soils. E.8.9A.7 Explain the interconnected relationship between surface water and groundwater
<b>Mid-term OR Unit Assessment 2 (WK 4.5/ WK 5)</b> <b>Unit Assessment 1 Plate Tectonics</b>	
WK 5: Feb 3-7	E.8.9B.1 Research and map various types of natural hazards to determine their impact on society.
WK 6: Feb 10-14	E.8.9B.2 Compare and contrast technologies that predict natural hazards to identify which types are most effective. E.8.9B.3 Using an engineering design process, create mechanisms to improve community resilience, which safeguard against natural hazards (ex. Building restrictions in flood or tidal zones, regional watershed management, firewise construction).
<b>Unit Assessment 2 Natural Hazards</b>	
WK 7: Feb 17-21	E.8.10.1 Read and evaluate scientific information about advancements in renewable and nonrenewable resources. Propose and defend ways to decrease national and global dependence on nonrenewable resources.
WK 8:	E.8.10.2 Create and defend a proposal for reducing the environmental effects humans have on Earth. (Ex. population increases, consumer demands, chemical pollution, deforestation, and change in average annual temperature)

Feb 24-28	E.8.10.3 Using scientific data, debate the societal advantages and disadvantages of technology advancements in renewable energy sources. E.8.10.4 Using an engineering design process, develop a system to capture and distribute thermal energy that makes renewable energy more readily available and reduces human impact on the environment. (ex. Building solar water heaters, conserving home energy).
<b>Unit Assessment 4 optional due to BMA</b> <b>Earth's Resources</b>	
WK 9: March 3-7	<b>Review &amp; Benchmark OR Unit Assessment</b>

## TERM 3

### Recurring Standards

Standards taught the first 4-5 weeks; the mid-term data will indicate the remediation needed.

WK 5: Feb 3-7	E.8.9A.1, E.8.9A.2 & E.8.9A.3
WK 6: Feb 10-14	E.8.9A.3 & E.8.9A.4
WK 7: Feb 17-21	E.8.9A.5, E.8.9A.6 & E.8.9A.7



## Science 8

### TERM 4

TERM 4	
Term 4 Dates	MS College and Career Readiness Standards
WK 1: March 17-21	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
<b>Checkpoint 1</b>	
WK 2: March 24-28	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
<b>Checkpoint 2</b>	
WK 3: March 31- April 4	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
<b>Checkpoint 3</b>	
WK 4: April 7-11	<i>TBD using Benchmark/ Unit Assessment data and/or remediation time needed for other grade level tested areas</i>
<b>Checkpoint 4</b>	
WK 5: April 14-18	<i>N/A; benchmark testing</i>
WK 6: April 21-25	<i>N/A; benchmark testing</i>
WK 7: April 28- May 2	<i>N/A; benchmark testing</i>
WK 8: May 5-9	<i>N/A; benchmark testing</i>
WK 9: May 12-21	<b>Review &amp; EOY Assessment</b>

### TERM 4

#### Recurring Standards

Standards taught the first 4-5 weeks; the mid-term data will indicate the remediation needed.

WK 5: April 14-18	<i>N/A; benchmark testing</i>
WK 6: April 21-25	<i>N/A; benchmark testing</i>
WK 7:	<i>N/A; benchmark testing</i>

April 28- May 2