

## 8<sup>th</sup> Grade Science Quarter 1 Overview

**Focus Standards** RST: 3, 5; WST: 2, 3; SL: 1

**Recursive Standards** RST: 1, 2, 4, 6, 7, 8, 9, 10; WST: 1, 4-9; SL: 2-6

**Quarter Topic Focus** Particle Nature of Matter

<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Ideas (DCI)</u>	<u>Cross Cutting Concepts (CCC)</u>	NGSS – '98 Overlap Standards
<i>How students will demonstrate understanding.</i>	<i>What students will understand. For more detail, click the standard in the left column.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 California Science Standards.
<p><a href="#">Develop a model</a> to predict and describe...</p> <p><a href="#">Develop models</a> to describe...</p> <p><a href="#">Analyze &amp; Interpret data</a> on...</p>	<p>changes in particle motion, temperature, and state of a pure substance occur when Thermal Energy is added or removed. (<a href="#">PS1.A</a>, <a href="#">PS3.A</a>) Connected DCI ESS2.C</p> <p>the atomic composition of simple molecules and extended structures (<a href="#">PS1.A</a>,) Connected DCI ESS2.C</p> <p>the properties of substances prior to and after interacting to determine if a chemical reaction has occurred. (<a href="#">PS1.A</a>, <a href="#">PS1.B</a>) Connected DCI PS3.D, LS1.C, ESS2.A</p>	<p><a href="#">Cause &amp; Effect</a> relationships may be useful to predict phenomena in natural or designed systems.</p> <p><a href="#">Scale, Proportion, and Quantity</a>. Time, Space and energy phenomena can be observed at various scales using models to study systems that are too large or too small.</p> <p>Macroscopic <a href="#">patterns</a> are related to the nature of atomic-level and microscopic structure.</p>	<p style="text-align: center;"><a href="#">MS-PS1-4</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.7</a></p> <p style="text-align: center;"><a href="#">MS-PS1-1</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.7</a></p> <p style="text-align: center;"><a href="#">MS-PS1-2</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.1</a>, <a href="#">RST6-8.7</a></p>



**8<sup>th</sup> Grade Science Quarter 3 Overview**  
 (Note: highlighted standards are newly added in 2017-18)

**Focus Standards** RST: 2, 7; WST: 2; SL: 2, 5

**Recursive Standards** RST: 1, 3, 5, 6, 8, 9, 10; WST: 1, 3-10; SL: 1, 3, 4, 6

**Quarter Topic Focus** Engineering in Chemistry and Physics

<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Ideas (DCI)</u>	<u>Cross Cutting Concepts (CCC)</u>	NGSS – '98 Overlap Standards
<i>How students will demonstrate understanding.</i>	<i>What students will understand. For more detail, click the standard in the left column.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 California Science Standards.
<p><u>Plan and Conduct an investigation</u> to provide evidence that...</p> <p>Apply Newton’s Third Law to <u>design a solution</u> to a problem involving the motion of two colliding objects.</p> <p><u>Construct and interpret</u> graphical displays of data to describe the...</p> <p><u>Conduct an investigation</u> and evaluate the experimental design to provide evidence that...</p>	<p>the change in an object’s motion depends on the sum of the forces on the object and the mass of the object. (<a href="#">PS2.A</a>)                      Connected DCI PS3.A, PS3.B, ESS2.C</p> <p>Apply Newton’s Third Law to design a solution to a problem involving the motion of two colliding objects. (<a href="#">PS2.A</a>)                      Connected DCI PS3.C</p> <p>relationships of kinetic energy to the mass of an object and to the speed of an object. (<a href="#">PS3.A</a>)                      Connected DCI PS2.A</p> <p>fields exist between objects exerting forces on each other even though the objects are not in contact. (<a href="#">PS2.B</a>)                      No connected DCI</p>	<p><u>Stability &amp; Change.</u>                      Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and forces at different scales.</p> <p><u>Systems &amp; System Models</u>                      Models can be used to represent systems and their interactions-such as inputs, processes and outputs-and energy and matter flows within systems.</p> <p><u>Scale, Proportion &amp; Quantity</u>                      Time, Space and energy phenomena can be observed at various scales using models to study systems that are too large or too small.</p> <p><u>Cause &amp; Effect</u> relationships may be useful to predict phenomena in natural or designed systems.</p>	<p align="center"><a href="#">MS-PS2-2</a>  <a href="#">Evidence Statements</a>                      CCSS Lit Connection:  <a href="#">RST6-8.3</a>, <a href="#">WST6-8.7</a></p> <p align="center"><a href="#">MS-PS2-1</a>  <a href="#">Evidence Statements</a>                      CCSS Lit Connection:  <a href="#">RST6-8.1</a>, <a href="#">RST6-8.3</a>, <a href="#">RST6-8.7</a></p> <p align="center"><a href="#">MS-PS3-1</a>  <a href="#">Evidence Statements</a>                      CCSS Lit Connection:  <a href="#">RST6-8.1</a>, <a href="#">RST6-8.7</a></p> <p align="center"><a href="#">MS-PS2-5</a>  <a href="#">Evidence Statements</a>                      CCSS Lit Connection:  <a href="#">RST6-8.3</a>, <a href="#">WHST6-8.7</a></p>

**8<sup>th</sup> Grade Science Quarter 4 Overview**  
(Note: highlighted standards are newly added in 2017-18)

**Focus Standards** RST: 8, 9; WST: 1; SL: 2, 5

**Recursive Standards** RST: 1-7, 10; WST: 2-10; SL: 1, 3, 4, 6

**Quarter Topic Focus** Astronomy

<u>Science &amp; Engineering Practice (SEP)</u>	<u>Disciplinary Core Ideas (DCI)</u>	<u>Cross Cutting Concepts (CCC)</u>	NGSS – '98 Overlap Standards
<i>How students will demonstrate understanding.</i>	<i>What students will understand. For more detail, click the standard in the left column.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 California Science Standards.
<u>Analyze &amp; Interpret data</u> to determine...	scale properties of objects in the solar system ( <a href="#">ESS1.B</a> ) Connected DCI ESS2.A	<u>Scale, Proportion, and Quantity.</u> Time, Space and energy phenomena can be observed at various scales using models to study systems that are too large or too small.	<a href="#">MS-ESS1-3</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.1, RST6-8.7</a>
<u>Develop and use a model</u> to describe...	the role of gravity within galaxies and the solar system. ( <a href="#">ESS1.A</a> , <a href="#">ESS1.B</a> ) Connected DCI PS2.A, PS2.B	<u>Systems &amp; System Models</u> Models can be used to represent systems and their interactions-such as inputs, processes and outputs-and energy and matter flows within systems.	<a href="#">MS-ESS1-2</a> <a href="#">Evidence Statements</a> CCSS Lit Connection:
<u>Construct and present arguments using evidence</u> to support...	the claim that gravitational interactions are attractive and depend on the masses of interacting objects. ( <a href="#">PS2.B</a> ) Connected DCI ESS1.A, ESS1.B, ESS2.C	<u>Systems &amp; System Models</u> Models can be used to represent systems and their interactions-such as inputs, processes and outputs-and energy and matter flows within systems.	<a href="#">MS-PS2-4</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.1</a>
<u>Ask questions</u> about data to determine...	the factors that affect the strength of electric and magnetic forces. ( <a href="#">PS2.B</a> ) No connected DCI	<u>Cause &amp; Effect</u> relationships may be useful to predict phenomena in natural or designed systems.	<a href="#">MS-PS2-3</a> <a href="#">Evidence Statements</a> CCSS Lit Connection: <a href="#">RST6-8.1</a>