

7th 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

<u>Science & Engineering Practice (SEP)</u>	<u>Disciplinary Core Ideas (DCI)</u>	<u>Cross Cutting Concepts (CCC)</u>	NGSS – '98 Overlap Standards
<i>How students will demo understanding.</i>	<i>What students will understand.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 CA Science Standards.
<p><u>Construct an explanation based on evidence</u> for...</p> <p><u>Develop a model</u> to describe...</p> <p><u>Analyze and interpret data on...</u></p> <p><u>Construct a scientific explanation</u> based on evidence from...</p> <p><u>Analyze and interpret data</u> for patterns in...</p>	<p>how geoscience processes have changed Earth's surface as varying time and special scales. (ESS2.A, ESS2.C) Connected DCI: PS1.B, LS2.B</p> <p>the cycling of Earth's materials and the flow of energy that drives this process. (ESS2.A) Connected DCI: PS1.A, PS1.B, PS3.B, LS2.B, LS2.C, ESS1.B, ESS3.C</p> <p>the distribution of fossils and rocks, continental shapes and seafloor structures to provide evidence of the past plate motions. (ESS1.C, ESS2.B) Connected DCI: LS4.B</p> <p>rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-history. (ESS1.C) Connected DCI: LS4.A, LS4.C</p> <p>the fossil record that document the existence, diversity, extinction, and change of life forms throughout the history of life on Earth under the assumption that natural laws operate today as in the past. (LS4.A) Connected DCI: ESS1.C, ESS2.B</p>	<p><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.</p> <p><u>Stability & Change.</u> Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale.</p> <p><u>Patterns.</u> Patterns in rates of change and other numerical relationships can provide information about natural systems.</p> <p><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.</p> <p><u>Patterns.</u> Graphs, charts, and images can be used to identify patterns in data.</p>	<p>MS-ESS2-2 Evidence Statements CCSS Lit Connection: RST6-8.1, WHST6-8.2</p> <p>MS-ESS2-1 Evidence Statements CCSS Lit Connection: SL8.5</p> <p>MS-ESS2-3 Evidence Statements CCSS Lit Connection: RST6-8.1, RST6-8.7, RST6-8.9</p> <p>MS-ESS1-4 Evidence Statements CCSS Lit Connection: RST6-8.1, WHST6-8.2</p> <p>MS-LS4-1 Evidence Statements CCSS Lit Connection: RST6-8.1, RST6-8.7</p>

7th Grade Science Quarter 2 Overview
(Note: highlighted standards are newly added in 2017-18)

Focus Standards RST: 4, 6; WST: 1; SL: 3, 4

Recursive Standards RST: 1, 2, 3, 5, 7, 8, 9, 10; WST: 2-10; SL: 1, 2, 5, 6

Quarter Topic Focus

<u>Science & 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.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 California Science Standards.
Construct a scientific explanation based on evidence for...	the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. (LS1.C , PS3.D) Connected DCI: PS1.B, ESS2.A	Energy & Matter. Within a system, the transfer of energy drives the motion and/or cycling of matter.	MS-LS1-6 Evidence Statements CCSS Lit Connection: RST6-8.1 , RST6-8.2 WHST6-8.2 , WST6-8.9
Conduct an investigation to provide evidence that...	living things are made of cells; either one cell or many different numbers and types of cells. (LS1.A)	Scale, Proportion, and Quantity. Phenomena that can be observed at one scale may not be observable at another scale.	MS-LS1-1 Evidence Statements CCSS Lit Connection: WST6-8.7
Use arguments supported by evidence for...	how the body is a system of interacting subsystems composed of groups of cells. (LS1.A) Connected DCI: LS3.A	Systems & System Models Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.	MS-LS1-3 Evidence Statements CCSS Lit Connection: RST6-8.1
Develop and use a model to describe...	the function of a cell as a whole and ways parts of the cell contribute to the function. (LS1.A) Connected DCI: LS3.A	Structure and Function: Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function.	MS-LS1-2 Evidence Statements CCSS Lit Connection: SL8.5
Develop a model to describe how...	food is rearranged through chemical reactions forming new molecules that support growth and/or release energy as this matter moves through an organism. (LS1.C) (PS3.D)	Energy & Matter. Within a system, the transfer of energy drives the motion and/or cycling of matter.	MS-LS1-7 Evidence Statements CCSS Lit Connection: SL8.5

7th 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

<u>Science & 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.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 CA Science Standards.
<u>Use argument based on empirical evidence</u> and scientific reasoning to support an explanation for...	how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animal and plants respectively. (LS1.B) Connected DCI: LS2.A	<u>Cause and Effect.</u> Phenomena may have more than one cause, and some cause & effect relationships in systems can be described using probability.	MS-LS1-4 <u>Evidence Statements</u> CCSS Lit Connection: RST6-8.1
<u>Construct a scientific explanation</u> based on evidence for...	how environmental and genetic factors influence the growth of organisms. (LS1.B) Connected DCI: LS2.A	<u>Cause and Effect.</u> Phenomena may have more than one cause, and some cause & effect relationships in systems can be described using probability.	MS-LS1-5 <u>Evidence Statements</u> CCSS Lit Connection: RST6-8.1 , RST6-8.2 , WHST6-8.2 , WST6-8.9
<u>Analyze and interpret data</u> to provide evidence for...	The effects of resource availability on organisms and populations of organisms in an ecosystem. (LS2.A) Connected to DCI: ESS3.A, ESS3.C	<u>Cause and Effect.</u> Relationships may be used to predict phenomena in natural or designed systems.	MS-LS2-1 <u>Evidence Statements</u> CCSS Lit Connection: RST6-8.1 , RST6-8.7
<u>Develop and use a model</u> to describe...	Why structural changes to genes (mutations) located on chromosomes may affect proteins and may result in harmful, beneficial, or neutral effects to the structure and function of the organism. (LS3.A , LS3.B) Connected DCI: LS1.A, LS4.A	<u>Structure and Function:</u> Complex and microscopic structures and systems can be visualized, modeled, and used to describe how their function depends on the relationships among its parts, therefore complex natural structures/systems can be analyzed to determine how they function.	MS-LS3-1 <u>Evidence Statements</u> CCSS Lit Connection: RST6-8.1 , RST6-8.4 , RST6-8.7

<p><u>Develop and use a model</u> to describe...</p>	<p>Why asexual reproduction results in offspring with identical genetic information and sexual reproduction results in offspring with genetic variation. (<u>LS1.B</u>, <u>LS3.A</u>, <u>LS3.B</u>)</p>	<p><u>Cause and Effect.</u> Relationships may be used to predict phenomena in natural or designed systems.</p>	<p><u>MS-LS3-2</u> <u>Evidence Statements</u> CCSS Lit Connection: <u>RST6-8.1</u>,<u>RST6-8.4</u>, <u>RST6-8.7</u></p>
<p><u>Construct an explanation</u> based on evidence that describes...</p>	<p>How genetic variations of traits in a population increase some individuals' probability of surviving and reproducing in a specific environment. (<u>LS4.B</u>) Connected DCI: LS2.A, LS3.A, LS3.B</p>	<p><u>Cause and Effect.</u> Phenomena may have more than one cause, and some cause & effect relationships in systems can be described using probability.</p>	<p><u>MS-LS4-4</u> <u>Evidence Statements</u> CCSS Lit Connection: <u>RST6-8.9</u> <u>WHST6-8.2</u>,<u>WST6-8.9</u> <u>RST6-8.1</u></p>
<p><u>Construct an argument</u> supported by empirical evidence that...</p>	<p>changes to physical or biological components of an ecosystem affect populations. (<u>LS2.C</u>) Connected DCI: LS4.C, LS4.D, ESS2.A, ESS3.A, ESS3.C</p>	<p><u>Stability & Change.</u> Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale.</p>	<p><u>MS-LS2-4</u> <u>Evidence Statements</u> CCSS Lit Connections: <u>RST6-8.1</u>, <u>RI8.8</u>, <u>WHST6-8.1</u>, <u>WHST6-8.9</u></p>
<p><u>Evaluate competing design solutions</u> for...</p>	<p>Maintaining biodiversity and ecosystem services. (<u>LS2.C</u>) (<u>LS4.D</u>) (<u>ETS1.B</u>) Connected DCI: ESS3.C</p>	<p><u>Stability & Change.</u> Explanations of stability and change in natural or designed systems can be constructed by examining the changes over time and processes at different scales, including the atomic scale.</p>	<p><u>MS-LS2-5</u> <u>Evidence Statements</u> CCSS Lit Connections: <u>RST6-8.8</u>, <u>RI8.8</u></p>

7th Grade Science Quarter 4 Overview

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

<u>Science & 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.</i>	<i>How students will connect their understanding across units.</i>	NGSS versions of the '98 California Science Standards.
<p><u>Analyze displays of pictorial data</u> to compare patterns in...</p> <p><u>Use mathematical representations</u> to support explanations of how...</p> <p><u>Apply scientific ideas to construct an explanation</u> for...</p>	<p>The embryological development across multiple species to identify relationships not evident in the fully formed anatomy. (<u>LS4.A</u>)</p> <p>Natural selection may lead to increases and decreases of specific traits in populations over time. (<u>LS4.C</u>) Connected DCI: LS2A, LS2.C, LS3.B, ESS1.C</p> <p>The anatomical similarities and differences among modern organisms and between modern and fossil organisms to infer evolutionary relationships. (<u>LS4.A</u>) Connected DCI: LS3.A, LS3.B, ESS1.C</p>	<p><u>Patterns.</u> Graphs, charts, and images can be used to identify patterns in data.</p> <p><u>Cause and Effect.</u> Phenomena may have more than one cause, and some cause & effect relationships in systems can be described using probability.</p> <p><u>Patterns</u> can be used to identify cause and effect relationships.</p>	<p style="text-align: center;"><u>MS-LS4-3</u> <u>Evidence Statements</u> CCSS Lit Connection: <u>RST6-8.1</u>, <u>RST6-8.7</u>, <u>RST6-8.9</u></p> <p style="text-align: center;"><u>MS-LS4-6</u> <u>Evidence Statements</u> CCSS Lit Connection: n/a</p> <p style="text-align: center;"><u>MS-LS4-2</u> <u>Evidence Statements</u> CCSS Lit Connection: <u>RST6-8.1</u>, <u>WHST6-8.2</u>, <u>WST6-8.9</u></p>