

Northpoint Horizons

CAVS (Content Academic Vocabulary System) Science 3-5 Correlated to the California State Science Content Standards

Grade 4

This document provides a correlation of the extensive science directives offered throughout the *CAVS 3-5* program that meet the California Science Content Standards. The n/a signifies the standards that are not directly met for this grade level.

Science Content Standard	CAVS Science Grade 3-5 Teacher's Guide Lessons
Physical Sciences	
1.0 Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept:	
a. Students know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.	Lesson 21 – p. 121 <i>How does electricity move?</i>
b. Students know how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.	n/a
c. Students know electric currents produce magnetic fields and know how to build a simple electromagnet.	n/a
d. Students know the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones.	n/a
e. Students know electrically charged objects attract or repel each other.	Lesson 21 – p. 121 <i>How does electricity move?</i>
f. Students know that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.	Study of magnets and their properties are studied specifically in the K-2 Teacher's Guide, Lesson 17.
g. Students know electrical energy can be converted to heat, light, and motion.	Lesson 19 – p. 109 <i>How does heat energy move?</i> Lesson 21 – p. 121 <i>How does electricity move?</i>

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Life Sciences	
2.0 All organisms need energy and matter to live and grow. As a basis for understanding this concept:	
<p>a. Students know plants are the primary source of matter and energy entering most food chains.</p>	<p>Lesson 4 – p. 19 <i>What is an ecosystem?</i> Lesson 5 – p. 25 <i>How does energy flow in an ecosystem?</i> Lesson 6 – p. 31 <i>What helps an organism live in its ecosystem?</i></p>
<p>b. Students know producers and consumers (herbivores, carnivores, omnivores, and decomposers) are related in food chains and food webs and may compete with each other for resources in an ecosystem.</p>	<p>Lesson 4 – p. 19 <i>What is an ecosystem?</i> Lesson 5 – p. 25 <i>How does energy flow in an ecosystem?</i> Lesson 6 – p. 31 <i>What helps an organism live in its ecosystem?</i></p>
<p>c. Students know decomposers, including many fungi, insects, and microorganisms, recycle matter from dead plants and animals.</p>	<p>Lesson 5 – p. 25 <i>How does energy flow in an ecosystem?</i></p>
3.0 Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:	
<p>a. Students know ecosystems can be characterized by their living and nonliving components.</p>	<p>Lesson 1 – p. 1 <i>How are living things classified?</i> Lesson 4 – p. 19 <i>What is an ecosystem?</i> Lesson 5 – p. 25 <i>How does energy flow in an ecosystem?</i> Lesson 6 – p. 31 <i>What helps an organism live in its ecosystem?</i></p>
<p>b. Students know that in any particular environment, some kinds of plants and animals survive well, some survive less well, and some cannot survive at all.</p>	<p>Lesson 6 – p. 31 <i>What helps an organism live in its ecosystem?</i></p>
<p>c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.</p>	<p>Lesson 2 – p. 7 <i>How are plant and animal systems different?</i> Lesson 3 – p. 13 <i>How do plants reproduce?</i> Lesson 4 – p. 19 <i>What is an ecosystem?</i></p>

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d. Students know that most microorganisms do not cause disease and that many are beneficial.	n/a
Earth Sciences	
4.0 The properties of rocks and minerals reflect the processes that formed them. As a basis for understanding this concept:	
a. Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).	Lesson 8 – p. 43 <i>How are rocks classified?</i>
b. Students know how to identify common rock-forming minerals (including quartz, calcite, feldspar, mica, and hornblende) and ore minerals by using a table of diagnostic properties.	Lesson 8 – p. 43 <i>How are rocks classified?</i> Lesson 14 – p. 79 <i>What makes up matter?</i>
5.0 Waves, wind, water, and ice shape and reshape Earth's land surface. As a basis for understanding this concept:	
a. Students know some changes in the earth are due to slow processes, such as erosion, and some changes are due to rapid processes, such as landslides, volcanic eruptions, and earthquakes.	Lesson 10 – p. 55 <i>What are the layers of Earth?</i> Lesson 11 – p. 61 <i>What causes earthquakes and volcanoes?</i> Lesson 12 – p. 67 <i>How does Earth's surface change?</i> Lesson 13 – p. 73 <i>What are Earth's natural resources?</i>
b. Students know natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.	Lesson 9 – p. 49 <i>What is the water cycle?</i> Lesson 10 – p. 55 <i>What are the layers of Earth?</i> Lesson 11 – p. 61 <i>What causes earthquakes and volcanoes?</i> Lesson 12 – p. 67 <i>How does Earth's surface change?</i>
c. Students know moving water erodes landforms, reshaping the land by taking it away from some places and depositing it as pebbles, sand, silt, and mud in other places (weathering, transport, deposition).	Lesson 12 – p. 67 <i>How does Earth's surface change?</i>

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Investigation and Experimentation	
6.0 Scientific progress is made by asking meaningful questions and conducting careful investigations. As a basis for understanding this concept and addressing the content in the other three strands, students should develop their own questions and perform investigations. Students will:	
a. Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.	In each lesson students make observations on their own and with teacher direction. They are then asked to interpret and verify observation through experimentation.
b. Measure and estimate the weight, length, or volume of objects.	Lesson 14 – p. 79 <i>What makes up matter?</i> Lesson 15 – p. 85 <i>How do we measure matter?</i> Lesson 16 – p. 91 <i>How can matter change?</i>
c. Formulate and justify predictions based on cause-and-effect relationships.	Lesson 2 – p. 7 <i>How are plant and animal systems different?</i> Lesson 12 – p. 67 <i>How does Earth's surface change?</i> Lesson 16 – p. 91 <i>How can matter change?</i> Lesson 17 – p. 97 <i>What makes things move?</i> Lesson 20 – p. 115 <i>How does light energy move?</i>
d. Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.	Lesson 10 – p. 55 <i>What are the layers of Earth?</i> Lesson 11 – p. 61 <i>What causes earthquakes and volcanoes?</i> Lesson 16 – p. 91 <i>How can matter change?</i> Lesson 18 – p. 103 <i>How do simple machines help things move?</i>

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e. Construct and interpret graphs from measurements.	Lesson 15 – p. 85 <i>How do we measure matter?</i> Lesson 19 – p. 109 <i>How does heat energy move?</i> In these lessons there are opportunities to introduce, construct, and interpret graphs when using measurements.
f. Follow a set of written instructions for a scientific investigation.	Each Activity Placemat is a written set of instructions for scientific investigation.