

LARKSPUR SCHOOL DISTRICT
 CALIFORNIA SCIENCE ACADEMIC CONTENT STANDARDS
 GRADE LEVEL: FOUR

Introduce Develop Master	Content Standards	Assessment	Instructional Strategies	Instructional Resources
	<p>Physical Sciences</p> <p>1. Electricity and magnetism are related effects that have many useful applications in everyday life. As a basis for understanding this concept:</p>			
I/D	a. Students know how to design and build simple series and parallel circuits by using components such as wires, batteries, and bulbs.	Student notebooks Teacher observation Circuit board quiz	Build circuits Draw designs	Teacher-created lessons ETF
D	b. Students know how to build a simple compass and use it to detect magnetic effects, including Earth's magnetic field.	Teacher observation	Teacher demonstration Compass activity Building compasses	Teacher-created lessons ETF
I/D	c. Students know electric currents produce magnetic fields and know how to build a simple electromagnet.	Teacher observation Notebook drawings	Experiment with iron filings to "see" field Build electromagnet	Teacher-created lessons ETF
I less emphasis	*d. Students know the role of electromagnets in the construction of electric motors, electric generators, and simple devices, such as doorbells and earphones.	Teacher observation	Discussion	Physics textbook <i>How Things Work</i>
I/D/M	e. Students know electrically charged objects attract or repel each other.	Teacher observation	Experiments with magnets	Teacher-created lessons
I/D/M	f. Students know that magnets have two poles (north and south) and that like poles repel each other while unlike poles attract each other.	Student notebooks	Experiments with magnets	Teacher-created lessons

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I/D	g. Students know electrical energy can be converted to heat, light, and motion.	Teacher observation	Discussion	Video Physics textbook
	Life Sciences 2. Living organisms depend on one another and on their environment for survival. As a basis for understanding this concept:			
M	a. Students know ecosystems can be characterized by their living and nonliving components.	Teacher observation	Discussion	Teacher-created lessons
M	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.	Teacher observation	Discussion	Teacher-created lessons Life Lab
D/M	c. Students know many plants depend on animals for pollination and seed dispersal, and animals depend on plants for food and shelter.	Teacher observation	Discussion Food Chain simulation	Life Lab
I/D	d. Students know that most microorganisms do not cause disease and that many are beneficial.	Teacher observation	Discussion	Teacher-created lessons Biology textbook
	Earth Sciences 3. The properties of rocks and minerals reflect the processes that formed them. As a basis for understanding this concept:			
D/M	a. Students know how to differentiate among igneous, sedimentary, and metamorphic rocks by referring to their properties and methods of formation (the rock cycle).	Student notebooks	Rock observation activity Rock cycle diagram	Naturescope Earth Science textbook Teacher materials

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D/M	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.	Student notebooks	Mineral test experiment	Teacher materials
	4. Waves, wind, water, and ice shape and reshape Earth's land surface. As a basis for understanding this concept:			
D/M	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.	Student notebooks Student projects	Experiments Student erosion projects	GEMS guide Naturescope Video – school library
D/M	b. Students know natural processes, including freezing and thawing and the growth of roots, cause rocks to break down into smaller pieces.	Teacher observation	Experiments Student erosion projects	GEMS guide Naturescope Video – school library
D/M	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, and deposition).	Student labsheet Teacher observation	River cutters experiment	GEMS guide
	5. Water on Earth moves between the oceans and land through the processes of evaporation and condensation. As a basis for understanding this concept:			
D/M	a. Students know most of Earth's water is present as salt water in the oceans, which cover most of Earth's surface.	Student notebooks	Discussion Pie chart activity	Project MARE Lawrence Hall of Science
D/M	b. Students know when liquid water evaporates, it turns into water vapor in the air and can reappear as a liquid when cooled or as a solid if cooled	Teacher observation Student diagrams	Discussion Video	Naturescope – Weather Weather kit

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	below the freezing point of water.			
D/M	c. Students know water vapor in the air moves from one place to another and can form fog or clouds, which are tiny droplets of water or ice, and can fall to Earth as rain, hail, sleet, or snow.	Teacher observation Bingo game of weather	Poster, demonstration Discussion Video	Weather kit Naturescope Teacher materials
D/M	d. Students know that the amount of fresh water located in rivers, lakes, underground sources, and glaciers is limited and that its availability can be extended by recycling and decreasing the use of water.	Teacher observation	Video from kit State Dept. water booklets	Weather kit
I/D/M	e. Students know the origin of the water used by their local communities.	Teacher observation	Visiting presentation by MMWD	MMWD
	6. Energy from the Sun heats Earth unevenly, causing air movements that result in changing weather patterns. As a basis for understanding this concept:			
I/D	a. Students know uneven heating of Earth causes air movements (convection currents).	Teacher observation	Discussion Video	Naturescope Weather kit
I/D	b. Students know the influence that the ocean has on the weather and the role that the water cycle plays in weather patterns.	Teacher observation	Discussion Video	Naturescope Weather kit
I/D	c. Students know the causes and effects of different types of severe weather.	Teacher observation	Discussion Video	Naturescope Weather kit
I/D	d. Students know how to use weather maps and data to predict local weather and know that weather forecasts depend on many variables.	Teacher observation Student work	Reading maps Predicting weather	Naturescope Weather kit Internet weather maps
I	e. Students know that the Earth's atmosphere exerts a pressure that decreases with distance above Earth's surface and that at any point it	Teacher observation	Discussion	Weather kit

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	exerts this pressure equally in all directions.			
	<p>Investigation and Experimentation</p> <p>7. 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:</p>			
D	a. Differentiate observation from inference (interpretation) and know scientists' explanations come partly from what they observe and partly from how they interpret their observations.	Teacher observation	Discussion	Teacher materials
D/M	b. Measure and estimate the weight, length, or volume of objects.	Student notebooks	Classroom and lab experiments and activities	Teacher materials
D	c. Formulate and justify predictions based on cause-and-effect relationships.	Student notebooks	Discussion	Teacher materials
D	d. Conduct multiple trials to test a prediction and draw conclusions about the relationships between predictions and results.	Student notebooks	Experiments Comparing results	Teacher materials
D/M	e. Construct and interpret graphs from measurements.	Graphs	Classroom and lab activities	Teacher materials Math textbook
D/M	f. Follow a set of written instructions for a scientific investigation.	Student lab sheet	Lab experiments	Teacher materials