Science Standard
Catalina Foothills School District
Grade 3

The third grade science program emphasizes the skills of scientific inquiry and builds on the processes of experimentation and problem solving. Through a rich, inquiry-based program of study, students will demonstrate scientific literacy and the use of applicable CFSD deep learning proficiencies in the physical, life, earth, and space sciences. Content is taught through an integrated approach with an emphasis on science themes and systems thinking. Students will engage in active inquiries and investigations to develop conceptual understanding and research/laboratory skills. Developing testable questions and data collection techniques are highlighted to expand investigative abilities that lead to logical conclusions. Third grade science explores concepts and questions in areas such as rocks and minerals, light and sound, plant life, and ecosystems.

SCIENTIFIC INQUIRY

SCIENTIFIC INQUIRY: GENERATING SCIENTIFIC QUESTIONS

SC3.1a.1 Generates testable questions using variable(s) (for example: How does the type of material affect the reflection of light? Why does the color of the material affect how much light is absorbed?).

SCIENTIFIC INQUIRY: PREDICTING AND HYPOTHESIZING

SC3.1b.1 Predicts logical results of an investigation based on prior knowledge, experience, and simple patterns.

SCIENTIFIC INQUIRY: DESIGNING INVESTIGATIONS

SC3.1c.1 Writes a plan for a simple experiment that includes (1) list of materials, (2) diagram with important elements labeled that supports procedures and illustrates setup, and (3) procedure that sequentially lists steps based on a formulated question.

SC3.1c.2 Describes how a variable in a simple experiment can be altered (for example: one plant receives adequate water, one receives too much water, and one receives to little water).

SCIENTIFIC INQUIRY: OBSERVATION AND DATA COLLECTION

SC3.1d.1 Records relevant data that supports a written plan (for example: collect the height, number of harvests, speed of germination).

SC3.1d.2 Solves problems using appropriate tools and units of measure (for example: yardstick vs. ruler, inches vs. centimeters).

SCIENTIFIC INQUIRY: ANALYSIS AND CONCLUSION

SC3.1e.1 Organizes data using visual tools (required: graphs; for example: bar graph and pictograph) and explains the results of an investigation.

SC3.1e.2 Generates new questions for possible future investigations based on the logical conclusions or explanations of an investigation.

INTERACTION OF SCIENCE AND SOCIETY

SC3.2.1 Describes how diverse people and/or cultures, past and present, have made important contributions to scientific innovation (for example: John Muir, William Herschel, Rachel Carson).

SC3.2.2 Describes beneficial and harmful impacts of natural and man-made events on human activities and the environment (for example: forest fires, flooding, pesticides, famine, drought, disease, improved transportation, medical advances).

SC3.2.3 Describes the development and use of different technologies in response to resources, needs, and values (for example: dibble stick for farming in the Mayan culture; irrigation, canals, glasses).

SYSTEMS THINKING (CFSD Deep Learning Proficiency – DLP)

SYSTEMS THINKING: BIG PICTURE

SC3.3a.1 Creates a model of key relationships by taking a whole-system perspective on an issue or process (for example: labeled diagram that includes the interrelationships among parts of the system - parts of a plant, plant life cycle).

SYSTEMS THINKING: CHANGE OVER TIME

SC3.3b.1 Describes elements of a system that change over time to produce a particular pattern of particular behavior (required: geologic time—mountains rising and falling, rivers, plate tectonics; changes in population).

Systems Thinking: Interdependencies

SC3.3c.1 Describes cause and effect as happening in a circular manner (required: causal loop or stock flow map to show how living things cause change in their environment and various environmental factors affect the organisms).

LIFE SCIENCE

CHARACTERISTICS OF LIVING THINGS

SC3.4.1 Describes the function of plant structures (required: roots—absorb nutrients and water; stems—provide support; leaves—synthesize food; flowers—attract pollinators and produce seeds for reproduction).

SC3.4.2 Compares life cycles of various plants (required: ferns, conifers, flowering plants).

SC3.4.3 Explains how growth, death, and decay are part of the plant life cycle.

INTERDEPENDENCE OF LIVING THINGS AND THEIR ENVIRONMENT

SC3.5.1 Describes the relationships among living and non-living components of an ecosystem (for example: using a causal loop to show relationships among plants and animals - producers, consumers, decomposers - in different environments).

SC3.5.2 Describes how adaptations of plants enable them to survive in specific environments (required: leaf size in local plants; for example: mesquite vs. maple).

PHYSICAL SCIENCE

STRUCTURE AND PROPERTIES OF MATTER

Not assessed at this level.

INTERACTIONS OF MATTER

SC3.7.1 Explains how sound is transmitted and used as a means of communication.

SC3.7.2 Demonstrates that the pitch of a sound depends on the rate of vibration (for example: pluck a meter stick with different lengths of the stick free to vibrate over the table edge).

SC3.7.3 Explains why sound waves travel only where there is matter to transmit them.

CONSERVATION AND TRANSFORMATION OF ENERGY

SC3.8.1 Demonstrates that light energy can be reflected (with mirrors), refracted (with prisms), and absorbed (by dark surfaces).

SC3.8.2 Describes how light behaves upon striking objects that are transparent (clear plastic), translucent (waxed paper), and opaque (cardboard).

EARTH AND SPACE SCIENCE

STRUCTURE AND PROCESSES OF THE EARTH

SC3.9.1 Describes the layers of the Earth (required: crust, mantle, core--inner and outer).

SC3.9.2 Describes the formation of rocks (required: metamorphic, igneous, sedimentary) and fossils.

SC3.9.3 Describes ways humans use earth materials (for example: fuel, building materials, food production).

STRUCTURE AND PROCESSES OF OBJECTS IN SPACE

Not assessed at this level.

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REQUIRED INVESTIGATIONS: Food Chains and Webs – DSM III; Physics of Sound – Foss; Lenses and Mirrors – DSM III; Earth Materials – Foss