Science Grade 1 Curriculum Guide

West Contra Costa Unified School District

- Pacing is based on current (2016) version of Draft California Science Framework
  - http://www.cde.ca.gov/ci/sc/cf/scifw2nd60daypubreview.asp
- Textbook: California Science.

Instructional Segments

1. **Plant Shapes**

   Students explore their natural surroundings with nature hunts and garden planting. They examine the shapes and parts of plants and begin to ask questions about what purpose these parts serve, how the shape of the parts helps them accomplish this purpose, and how the shapes of young plants are similar to the shapes of their parents.

2. **Animal Sounds**

   Students observe the behavior of parents & babies, noticing patterns in how they communicate. They explore the nature of sound, notice the physical parts of animals that produce sounds, and construct physical models that mimic animal sounds.

3. **Shadows and Light**

   Students plan and conduct investigations of how light travels and interacts with different objects. They use these observations as the foundation for constructing models of how people see.

4. **Patterns of Motion of Objects in the Sky**

   Students track the motions of the Sun, Moon, and Stars, noticing patterns in how sunlight varies throughout the seasons and moon phases change over the month. They analyze their data to develop a model that predicts the position of objects.

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Instructional Segment	Guiding Questions	Phenomena	Performance Expectation	Suggested Lessons/Activities	Resources
1. Plant Shapes	How can we tell different types of plants apart? How do these differences help the plants?	What am I going to be when I grow up?	**1-LS3-1. Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.**	• Venn Diagram comparing and contrasting animal babies and their parents • Pick/observe leaves from the same kinds of plants and notice their similarities and differences • Have students pick two of their favorite animals and pretend they had a kid. Have the student draw the animal. Discuss animal traits: physical/physiological/behavioral. • Play a "this does not belong game" with pictures of similar animals but not the same (cats/cheetah, dogs/wolf, ducks/goose, bumblebees/mosquito, hummingbirds/blackbird)	Wyoming Lesson on Heredity Parent/Offspring Lesson

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1. Plant Shapes	How can we tell different types of plants apart? How do these differences help the plants?	BrainPop Jr. Camouflage Video How Animals Meet Their Needs Game Ultimate Animal Moms Penguin Parent Patrol	**1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.**	• Design/draw clothing or equipment to protect or help humans using animal or plant parts. Ex: A bicyclist protected by a turtle or acorn shell, keeping intruders out by mimicking thorns/branches/animal quills, detecting intruders by mimicking eyes/ears. • Have students think of man-made inventions that are similar to those of animals Ex: giraffe's long neck and a grabber stick; manatee snouts and close valve snorkels etc • Look at bird's beaks and how they function for their specific diet, think of ways humans use different tools for different foods (long spoons for ice cream etc) • Watch the Penguin Parent Control video and discuss how the parents help their offspring survive.	NGSS @ NSTA ***This is incredible helpful What Makes a Bird a Bird Lessons

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1. Plant Shapes	How can we tell different types of plants apart? How do these differences help the plants?		**K–2-ETS1-2** **Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem.**	• Think about animals and how they are created with certain necessary features: giraffes & long necks, porcupines & quills, warthogs & tusks and so forth. Have students draw a picture of the animal and then describe the feature that helps with the given problem. • Students will define a problem (Keeping the rabbit out of the garden) from Muncha Muncha Muncha and design an object or tool to solve that problem. See attached resources.	Engineering Garden Lesson on Muncha Muncha Muncha YouTube Reading of Muncha Muncha Muncha

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1. Plant Shapes	How can we tell different types of plants apart? How do these differences help the plants?	BrainPop Jr. Light Video	**1-PS4-3. Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.**	• Shadow animals: have students make animals with various materials such as paper, wax paper, cardboard, and plastic. Using the projector see which animals make the best shadow puppets. • Students create a communicate device that they use to signal across a hallway. See NGSS @ INSTA for more details	Shadow Puppets NGSS @ NSTA Light Lesson

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1. Plant Shapes	How can we tell different types of plants apart? How do these differences help the plants?		**1-ESS1-1. Use observations of the sun, moon, and stars to describe patterns that can be predicted.**	• Oreo Cookie Moon Phase Activity- Can either do Full/Half, or the full cycle of moon • Record shadows with earth's rotations • Draw constellations on black paper with white crayons or create constellations with marshmallows and toothpicks • Sequence of where the sun is located during the day	 Shadow Activity Sun Sequence Activity