



## Youth Education Program

of San Francisco Botanical Garden Society

# Next Generation Science Standards supported in School and Summer Programs

### Science and Engineering Practices

- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigations
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Engaging in arguments from evidence
- Obtaining, evaluating, and communicating information

### Crosscutting Concepts

- Pattern
- Cause and Effect
- Scale, Proportion and Quantity
- Systems and Systems Models
- Energy and Matter
- Structure and Function
- Stability and Change

### Performance Expectations

Key to codes:

Grade - LS (Life Sciences), ESS (Earth and Space Sciences), PS (Physical Sciences) – Standard Number

- K-LS1 – 1 Use observations to describe patterns of what plants and animals (including humans) need to survive.
- K-ESS2 -1 Use and share observations of local weather conditions to describe patterns over time.
- K-ESS2 -2 Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.
- K-ESS3 - 1 Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.
- K-ESS3 - 3 Communicate solutions that will reduce the impact of humans on the land, water, air, and/or other living things in the local environment.

## Performance Expectations, cont.

- 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.
- 1-LS3 – 1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- 2-LS2 – 2 Develop a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
- 2-LS4 – 1 Make observations of plants and animals to compare the diversity of life in different habitats.
- 2-PS1 – 1 Plan and conduct an investigation to describe and classify different kinds of materials by their observable properties.
- 2-PS1 – 2 Analyze data obtained from testing different materials to determine which materials have the properties that are best suited for an intended purpose.
- 3-LS1 – 1 Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 3-LS3 – 2 Use evidence to support the explanation that traits can be influenced by the environment.
- 3-LS4 – 2 Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
- 3-LS4 - 3 Construct an argument with evidence that in a particular habitat some organisms can survive well, some survive less well, and some cannot survive at all.
- 4-LS1 – 1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- 5-LS1 -1 Support an argument that plants get the materials they need for growth chiefly from air and water.
- 5-LS2 – 1 Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.
- 5-PS3 – 1 Use models to describe that energy in animals food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.