_____

Owl Pellets and Beyond (grades K-8)
Classroom kit
_____

NEXT GENERATION SCIENCE STANDARDS

Science and Engineering Practices

Asking questions

K-2: Ask questions based on observations to find more information about the natural and/or designed world(s). Ask and/or identify questions that can be answered by an investigation.

3-5: Ask questions that can be investigated and predict reasonable outcomes based on patterns such as cause and effect relationships.

Analyzing and interpreting data

K-2: Use observations (firsthand or from media) to describe patterns and/or relationships in the natural and designed world(s) in order to answer scientific questions and solve problems.

3-5: Represent data in tables and/or various graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. Analyze and interpret data to make sense of phenomena, using logical reasoning, mathematics, and/or computation. Compare and contrast data collected by different groups in order to discuss similarities and differences in their findings.

6-8: Construct, analyze, and/or interpret graphical displays of data and/or large data sets to identify linear and nonlinear relationships. Analyze and interpret data to provide evidence for phenomena.

Developing and using models

3-5: Develop a model using an example to describe a scientific principle.

6-8: Use a model to describe phenomena.

Disciplinary Core Ideas

K-LS1-C: Organization for Matter and Energy Flow in Organisms

All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to live and grow.

3-LS1.B: Growth and Development of Organisms

Reproduction is essential to the continued existence of every kind of organism. Plants and animals have unique and diverse life cycles.

CALIFORNIA ACADEMY OF SCIENCES

3-LS2-C: Ecosystem Dynamics, Functioning, and Resilience

When the environment changes in ways that affect a place's physical characteristics, temperature, or availability of resources, some organisms survive and reproduce, others move to new locations, yet others move into the transformed environment, and some die.

3-LS4-D: Biodiversity and Humans

Populations live in a variety of habitats, and change in those habitats affects the organisms living there.

4-LS1-A: Structure and function

Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.

MS-LS2-C: Ecosystem Dynamics, Functioning, and Resilience

Ecosystems are dynamic in nature; their characteristics can vary over time. Disruptions to any physical or biological component of an ecosystem can lead to shifts in all its populations.

Crosscutting Concepts

Patterns

K-2: Children recognize that patterns in the natural and human designed world can be observed, used to describe phenomena, and used as evidence.

3-5: Students use patterns to make predictions.

6-8: Students use patterns to identify cause and effect relationships, and use graphs and charts to identify patterns in data.

Structure and function

K-2: Students observe the shape and stability of structures of natural and designed objects are related to their function(s).

3-5: Students learn different materials have different substructures, which can sometimes be observed; and substructures have shapes and parts that serve functions.

Cause and effect

3-5: Students routinely identify and test causal relationships and use these relationships to explain change.

6-8: Students use cause and effect relationships to predict phenomena in natural or designed systems.

CALIFORNIA
ACADEMY OF
SCIENCES

Related Performance Expectations

MS-LS2-2. **Construct an explanation that predicts patterns of interactions among organisms across multiple ecosystems.** [Clarification Statement: Emphasis is on predicting consistent patterns of interactions in different ecosystems in terms of the relationships among and between organisms and abiotic components of ecosystems. Examples of types of interactions could include competitive, predatory, and mutually beneficial.]

COMMON CORE STATE STANDARDS

Grade 3
Numbers and Operations: Fractions
> Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b.

Measurement & Data
> Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one-and two-step "how many more" and "how many less" problems using information presented in scaled bar graphs.

Grade 5
Numbers and Operations: Fractions
> Interpret a fraction as division of the numerator by the denominator (a/b = a ÷ b). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Grade 6
Ratios & Proportional Relationships
> Find a percent of a quantity as a rate per 100 (e.g., 30% of a quantity means 30/100 times the quantity); solve problems involving finding the whole, given a part and the percent.

CALIFORNIA
ACADEMY OF
SCIENCES