DCI: Ecosystems: Interactions, Energy, and Dynamics

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-LS4-4)

DCI: Biological Evolution: Unity and Diversity

3.LS4.A: Evidence of Common Ancestry and Diversity

Some kinds of plants and animals that once lived on Earth are no longer found anywhere. (3-LS4-1)

DCI: Biological Evolution: Unity and Diversity

3.LS4.A: Evidence of Common Ancestry and Diversity

Fossils provide evidence about the types of organisms that lived long ago and also about the nature of their environments. (3-LS4-1)

DCI: Biological Evolution: Unity and Diversity

3.LS4.B: Natural Selection

Sometimes the differences in characteristics between individuals of the same species provide advantages in surviving, finding mates, and reproducing. (3-LS4-2)

DCI: Biological Evolution: Unity and Diversity

3.LS4.C: Adaptation

For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

DCI: Biological Evolution: Unity and Diversity

3.LS4.D: Biodiversity and Humans

Populations live in a variety of habitats, and change in those habitats affects the organisms living there. (3-LS4-4)

3.LS4.C: Adaptation

For any particular environment, some kinds of organisms survive well, some survive less well, and some cannot survive at all. (3-LS4-3)

3.ESS2.D: Weather and Climate

Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)

3.ESS2.D: Weather and Climate

Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)

3.ESS3.B: Natural Hazards

A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1)

Performance Expectation

3-LS4-1: Analyze and interpret data from fossils to provide evidence of the organisms and the environments in which they lived long ago.

Clarification Statement: Examples of data could include type, size, and distributions of fossil organisms. Examples of fossils and environments could include marine fossils found on dry land, tropical plant fossils found in Arctic areas, and fossils of extinct organisms.
Assessment Boundary: Assessment does not include identification of specific fossils or present plants and animals. Assessment is limited to major fossil types and relative ages.

Performance Expectation

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.

Clarification Statement: Examples of cause and effect relationships could be plants that have larger thorns than other plants may be less likely to be eaten by predators; and, animals that have better camouflage coloration than other animals may be more likely to survive and therefore more likely to leave offspring.
Assessment Boundary: none

Performance Expectation

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.

Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.
Assessment Boundary: none

Performance Expectation

3-LS4-4: Make a claim about the merit of a solution to a problem caused when the environment changes and the types of plants and animals that live there may change.

Clarification Statement: Examples of environmental changes could include changes in land characteristics, water distribution, temperature, food, and other organisms.
Assessment Boundary: Assessment is limited to a single environmental change. Assessment does not include the greenhouse effect or climate change.

Performance Expectation

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.

Clarification Statement: Examples of evidence could include needs and characteristics of the organisms and habitats involved. The organisms and their habitat make up a system in which the parts depend on each other.
Assessment Boundary: none

3-ESS2-1: Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.

Clarification Statement: Examples of data could include average temperature, precipitation, and wind direction.
Assessment Boundary: Assessment of graphical displays is limited to pictographs and bar graphs. Assessment does not include climate change.

3-ESS2-2: Obtain and combine information to describe climates in different regions of the world.

Clarification Statement: none
Assessment Boundary: none

3-ESS3-1: Make a claim about the merit of a design solution that reduces the impacts of a weather-related hazard.

Clarification Statement: Examples of design solutions to weather-related hazards could include barriers to prevent flooding, wind resistant roofs, and lightning rods.
Assessment Boundary: none

Analyzing and Interpreting Data

Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

Analyze and interpret data to make sense of phenomena using logical reasoning. (3-LS4-1)

Constructing Explanations and Designing Solutions

Constructing explanations and designing solutions in 3–5 builds on K–2 experiences and progresses to the use of evidence in constructing explanations that specify variables that describe and predict phenomena and in designing multiple solutions to design problems.

Use evidence (e.g., observations, patterns) to construct an explanation. (3-LS4-2)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

Construct an argument with evidence. (3-LS4-3)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-LS4-4)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

Construct an argument with evidence. (3-LS4-3)

Analyzing and Interpreting Data

Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.

Represent data in tables and various graphical displays (bar graphs and pictographs) to reveal patterns that indicate relationships. (3-ESS2-1)

Obtaining, Evaluating, and Communicating Information

Obtaining, evaluating, and communicating information in 3–5 builds on K–2 experiences and progresses to evaluating the merit and accuracy of ideas and methods.

Obtain and combine information from books and other reliable media to explain phenomena. (3-ESS2-2)

Engaging in Argument from Evidence

Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).

Make a claim about the merit of a solution to a problem by citing relevant evidence about how it meets the criteria and constraints of the problem. (3-ESS3-1)

Cause and Effect

Cause and effect relationships are routinely identified and used to explain change. (3-LS4-2), (3-LS4-3)

Crosscutting Concept

Scale, Proportion, and Quantity

Natural objects and/or observable phenomena exist from the very small to the immensely large or from very short to very long time periods. (3-LS4-1)

Crosscutting Concept

Systems and System Models

A system can be described in terms of its components and their interactions. (3-LS4-4)

Crosscutting Concept

Cause and Effect

Cause and effect relationships are routinely identified and used to explain change. (3-LS4-3)

Crosscutting Concept

Patterns

Patterns of change can be used to make predictions (3-ESS2-1)

Crosscutting Concept

Patterns

Patterns of change can be used to make predictions (3-ESS2-2)

Crosscutting Concept

Cause and Effect

Cause and effect relationships are routinely identified, tested, and used to explain change. (3-ESS3-1)

Scientific Knowledge Assumes an Order and Consistency in Natural Systems

Science assumes consistent patterns in natural systems. (3-LS4-1)

Interdependence of Science, Engineering, and Technology

Knowledge of relevant scientific concepts and research findings is important in engineering. (3-LS4-4)

Science Is a Human Endeavor

Science affects everyday life. (3-ESS3-1)

Influence of Science, Engineering, and Technology on Society and the Natural World

Engineers improve existing technologies or develop new ones to increase their benefits (e.g., better artificial limbs), decrease known risks (e.g., seatbelts in cars), and meet societal demands (e.g., cell phones). (3-ESS3-1)

Reading Informational Text

RI.3.1 - Key Ideas and Details

Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Reading Informational Text

RI.3.2 - Key Ideas and Details

Determine the main idea of a text; recount the key details and explain how they support the main idea. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Common Core State Standards for ELA/Literacy

Reading Informational Text

RI.3.3 - Key Ideas and Details

Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, and cause/effect. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Common Core State Standards for ELA/Literacy

Speaking & Listening

SL.3.4 - Presentation of Knowledge and Ideas

Report on a topic or text, tell a story, or recount an experience with appropriate facts and relevant, descriptive details, speaking clearly at an understandable pace. (3-LS4-2), (3-LS4-3), (3-LS4-4)

Common Core State Standards for ELA/Literacy

Card Type name

W.3.1 - Text Types and Purposes

Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-LS4-1), (3-LS4-3), (3-LS4-4)

Card Type name

W.3.2 - Text Types and Purposes

Write informative/explanatory texts to examine a topic and convey ideas and information clearly. (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Card Type name

W.3.8 - Research to Build and Present Knowledge

Recall information from experiences or gather information from print and digital sources; take brief notes on sources and sort evidence into provided categories. (3-LS4-1)

Measurement & Data
3.MD.B.3 - Represent and interpret 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. (3-LS4-2), (3-LS4-3)

Measurement & Data

3.MD.B.4 - Represent and interpret data.

Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate unitsâ€" whole numbers, halves, or quarters. (3-LS4-1)

Mathematical Practices

MP.2 - Reason abstractly and quantitatively

CCSS text (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Mathematical Practices

MP.4 - Model with mathematics

CCSS text (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Common Core State Standards for Mathematics

Mathematical Practices
MP.5 - Use appropriate tools strategically

CCSS text (3-LS4-1)