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)


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


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

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.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)

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**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)

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**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)
DCI: Earth and Human Activity

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
Performance Expectation

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.

Performance Expectation

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

Clarification Statement: none
Assessment Boundary: none

Performance Expectation

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
Science and Engineering Practice

**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)

Science and Engineering Practice

**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)

Science and Engineering Practice

**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)
Science and Engineering Practice

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)

Science and Engineering Practice

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)

Science and Engineering Practice

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)
Science and Engineering Practice

**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)

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Science and Engineering Practice

**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)

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Crosscutting Concept

**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)
<table>
<thead>
<tr>
<th>Crosscutting Concept</th>
<th>Patterns</th>
<th>Patterns of change can be used to make predictions (3-ESS2-1)</th>
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</table>
Connection to Nature of Science

**Scientific Knowledge Assumes an Order and Consistency in Natural Systems**

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

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Connection to Engineering, Technology, and Applications of Science

**Interdependence of Science, Engineering, and Technology**

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

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Connection to Engineering, Technology, and Applications of Science

**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)
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)

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)

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)
# Common Core State Standards for ELA/Literacy

**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)

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**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)

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**Common Core State Standards for Mathematics**

**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)
Common Core State Standards for Mathematics

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 units—whole numbers, halves, or quarters. (3-LS4-1)

Common Core State Standards for Mathematics

Mathematical Practices
MP.2 - Reason abstractly and quantitatively
CCSS text (3-LS4-1), (3-LS4-2), (3-LS4-3), (3-LS4-4)

Common Core State Standards for Mathematics

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)