

DCI: Earth's Place in the Universe

4.ESS1.C: The History of Planet Earth

Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (4-ESS1-1)

Performance Expectation

4-ESS1-1: Identify evidence from patterns in rock formations and fossils in rock layers for changes in a landscape over time to support an explanation for changes in a landscape over time.

Clarification Statement: Examples of evidence from patterns could include rock layers with marine shell fossils above rock layers with plant fossils and no shells, indicating a change from land to water over time; and, a canyon with different rock layers in the walls and a river in the bottom, indicating that over time a river cut through the rock.

Assessment Boundary: Assessment does not include specific knowledge of the mechanism of rock formation or memorization of specific rock formations and layers. Assessment is limited to relative time.

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.

Identify the evidence that supports particular points in an explanation. (4-ESS1-1)

Crosscutting Concept

Patterns

Patterns can be used as evidence to support an explanation. (4-ESS1-1)

Connection to Nature of Science

Scientific Knowledge Assumes an Order and Consistency in Natural Systems

Science assumes consistent patterns in natural systems. (4-ESS1-1)

Common Core State Standards for ELA/Literacy

Card Type name

W.4.7 - Research to Build and Present Knowledge

Conduct short research projects that build knowledge through investigation of different aspects of a topic. (4-ESS1-1)

Common Core State Standards for ELA/Literacy

Card Type name

W.4.8 - Research to Build and Present Knowledge

Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources. (4-ESS1-1)

Common Core State Standards for ELA/Literacy

Card Type name

W.4.9 - Research to Build and Present Knowledge

Draw evidence from literary or informational texts to support analysis, reflection, and research. (4-ESS1-1)

Common Core State Standards for Mathematics

Measurement & Data

4.MD.A.1 - Solve problems involving measurement and conversion of measurements.

Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. (4-ESS1-1)

Common Core State Standards for Mathematics

Mathematical Practices

MP.2 - Reason abstractly and quantitatively

CCSS text (4-ESS1-1)

Common Core State Standards for Mathematics

Mathematical Practices

MP.4 - Model with mathematics

CCSS text (4-ESS1-1)