2. Earth’s Systems: Processes that Shape the Earth

Crosscutting Concepts

Patterns
- Patterns in the natural world can be observed. (2-ESS2-2),(2-ESS2-3)

Stability and Change
- Things may change slowly or rapidly. (2-ESS1-1),(2-ESS2-1)

Connections to Engineering, Technology, and Applications of Science

Influence of Engineering, Technology, and Science on Society and the Natural World
- Developing and using technology has impacts on the natural world. (2-ESS2-1)

Connections to Nature of Science

Science Addresses Questions About the Natural and Material World
- Scientists study the natural and material world. (2-ESS2-1)

Science and Engineering Practices

Developing and Using Models
Modeling in K–2 builds on prior experiences and progresses to include using and developing models (e.g., diagram, drawing, physical replica, diorama, dramatization, or storyboard) that represent concrete events or design solutions.
- Develop a model to represent patterns in the natural world. (2-ESS2-2)

Constructing Explanations and Designing Solutions
Constructing explanations and designing solutions in K–2 builds on prior experiences and progresses to the use of evidence and ideas in constructing evidence-based accounts of natural phenomena and designing solutions.
- Make observations (firsthand or from media) to construct an evidence-based account for natural phenomena. (2-ESS1-1)
- Compare multiple solutions to a problem. (2-ESS2-1)

Obtaining, Evaluating, and Communicating Information
Obtaining, evaluating, and communicating information in K–2 builds on prior experiences and uses observations and texts to communicate new information.
- Obtain information using various texts, text features (e.g., headings, tables of contents, glossaries, electronic menus, icons), and other media that will be useful in answering a scientific question. (2-ESS2-3)
- Obtain information from experiences or gather information from provided sources to answer a question. (2-ESS2-1)

Mathematics

MP.2 Reason abstractly and quantitatively. (2-ESS2-1),(2-ESS2-2),(2-ESS2-3)

MP.4 Model with mathematics. (2-ESS2-1),(2-ESS2-2)

MP.5 Use appropriate tools strategically. (2-ESS2-2)

2.NBT.A Understand place value.
- Read and write numbers to 1000 using base-ten numerals, number names, and expanded form. (2-ESS2-2)

2.MD.B.5 Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (2-ESS2-1)

Articulation of DCIs across grade bands:
- 2.ESS1.A (2-ESS2-1)
- 3.LS2.C (2-ESS1-1)
- 4.ESS2.A (2-ESS1-1),(2-ESS2-1)
- 4.ESS1.C (2-ESS1-1),(2-ESS2-1)
- 4.ESS2.B (2-ESS2-2)
- 4.ETS1.A (2-ESS2-1)
- 4.ETS1.B (2-ESS2-2)

Common Core State Standards Connections:

ELA/Literacy

RI.1.2 Ask and answer such questions as who, what, where, when, why, and how to demonstrate understanding of key details in a text. (2-ESS1-1)

RI.1.3 Describe the connection between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text. (2-ESS1-1),(2-ESS2-1)

RI.2.9 Compare and contrast the most important points presented by two texts on the same topic. (2-ESS2-1)

W.2.6 Write, using a variety of digital tools to produce and publish writing, including in collaboration with peers. (2-ESS2-1),(2-ESS2-3)

W.2.7 Participate in shared research and writing projects (e.g., read a number of books on a single topic to produce a report; record science observations). (2-ESS1-1)

W.2.8 Recall information from experiences or gather information from provided sources to answer a question. (2-ESS1-1),(2-ESS2-3)

SL.2.2 Reconstruct or describe key ideas or details from a text read aloud or information presented orally or through other media. (2-ESS1-1)

SL.2.5 Create audio recordings of stories or poems; add drawings or other visual displays to stories or recounts of experiences when appropriate to clarify ideas, thoughts, and feelings. (2-ESS2-2)

*The performance expectations marked with an asterisk integrate traditional science content with engineering through a Practice or Disciplinary Core Idea.


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