3-ESS3  Earth and Human Activity

Students who demonstrate understanding can:

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.]

The performance expectations above were developed using the following elements from the NRC document A Framework for K-12 Science Education: Practices, Cross-Cutting Concepts, and Core Ideas. Integrated and reprinted with permission from the National Academy of Sciences.

Science and Engineering Practices

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)

Disciplinary Core Ideas

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) (Note: This Disciplinary Core Idea is also addressed by 4-ESS3-2.)

Crosscutting Concepts

Cause and Effect

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

Influence of Engineering, Technology, and Applications of Science

• 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)

Science is a Human Endeavor

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

Connections to other DCIs in third grade: N/A

Articulation of DCIs across grade levels: K.ESS3.B (3-ESS3-1); K.ETS1.A (3-ESS3-1); 4.ESS3.B (3-ESS3-1); 4.ETS1.A (3-ESS3-1); MS.ESS3.B (3-ESS3-1)

Common Core State Standards Connections:

ELA/Literacy –

W.3.1 Write opinion pieces on topics or texts, supporting a point of view with reasons. (3-ESS3-1)
W.3.7 Conduct short research projects that build knowledge about a topic. (3-ESS3-1)

Mathematics –

MP.2 Reason abstractly and quantitatively. (3-ESS3-1)
MP.4 Model with mathematics. (3-ESS3-1)

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

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