



# EbD TEEMS NextGen – Grade 3

## At-A-Glance

**Intended Audience: 3<sup>rd</sup> Grade**

**Course Length: 6-8 weeks**

**Natural Hazards** engages young learners in hands-on inquiry and design as they explore natural hazards that occur on the Earth. This Third Grade Building Block in the EbD-TEEMS Integrative-STEM Curricula for PreK-6 integrates concepts of science, technology, engineering, and mathematics through the environmental context of natural hazards. Science and mathematics concepts that are reinforced include multiple hands-on, inquiry-based activities such as creating designs, exploring regions of the Earth, and analyzing weather data as students learn about weather and climate, and the natural hazards that occur around the world. The final design challenge provides an opportunity for students to apply knowledge and skills in a meaningful way as they develop a design for a snow shoe to help people travel during a blizzard. A Grand Challenge for Engineering, identified by the National Academy of Engineering —Engineer the Tools of Scientific Discovery— serves as a real-world inspiration for students to connect their learning about Natural Hazards and design solutions that reduce the impacts of these hazards.

### Objectives

- Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
- Compare and contrast the most important points and key details presented in two texts on the same topic.
- Interpret data and graphs in order to describe typical weather conditions expected during particular seasons.
- Reason abstractly and quantitatively about weather and climate and use mathematical models.
- Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.
- Create a design solution to reduce the impacts of a weather-related hazard by engineering a blizzard shoe design.
- Develop an understanding of the attributes of design and engineering design.
- Read *Wild Weather* by Melvin Berger in order to learn about the different types of weather hazards that happen on the Earth.
- Research a specific natural hazard and create a poster to display information about the hazard as well as possible impact solutions.
- Experiment with different materials to come up with the best combination that will keep a container warm while it is submerged in ice.
- Develop the abilities to apply the design process using appropriate tools strategically.
- Design a structure that will survive the shake table.
- Read about ancient rituals intended to produce rain and create a rain stick as a way to reduce the impact of having a drought by making it rain.
- Investigate using different materials to see how they perform against each other for waterproofing.
- Learn how to set up and use a STEM notebook in order to maximize knowledge of concepts and skills throughout this building block.
- Design a plan for a solution to help reduce the impact of a natural hazard that happens at home.
- Read the story about the life of Sir Francis Beaufort and review the Beaufort Wind Scale and read the Beaufort Wind Scale by answering questions.
- Build a house that will survive the wind of a fan and follow specific criteria for success and constraints on materials.
- Apply learning throughout this Building Block and design a shoe that will reduce the impact of the weather-related hazard while following the design process and meeting the criteria and constraints of the challenge.



For More Information

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