

Grade 4

Amplify Science unit name and summary

NGSS performance expectations addressed

Energy Conversions

Blackout in Ergstown

Students play the roles of systems engineers for Ergstown, a fictional town that experiences frequent blackouts. They explore reasons why an electrical system can fail, choose new energy sources and energy converters for the town, and use evidence to explain why their choices will make the town's electrical system more reliable.

4-PS3-1: Energy
4-PS3-2: Energy
4-PS3-3: Energy
4-PS3-4: Energy
4-ESS3-1: Earth and Human Activity
4-ESS3-2: Earth and Human Activity
3-5-ETS1-1: Engineering and Design
3-5-ETS1-2: Engineering and Design
3-5-ETS1-3: Engineering and Design

Waves, Energy, and Information

Investigating How Dolphins Communicate

In their roles as marine scientists, students work to figure out how mother dolphins communicate with their calves. They investigate how sound travels and learn about how to look for and to create patterns of communication.

4-PS3-2 Energy
4-PS3-3: Energy
4-PS4-1: Waves and their Applications in Technologies for Information
4-PS4-3: Waves and their Applications in Technologies for Information
4-ESS3-2: Earth and Human Activity
4-LS1-2: From Molecules to Organisms: Structures and Processes
3-5-ETS1-2: Engineering and Design
3-5-ETS1-3: Engineering and Design

Earth's Features

Mystery in Desert Rocks Canyon

Playing the roles of geologists, students help the National Park Service explain what a particular boney-looking rock is, how it formed, and how it came to be in its current location at the bottom of Desert Rocks National Park. Then they explain to park visitors how the canyon where they're doing their research was formed.

4-ESS1-1: Earth's Place in the Universe
4-ESS2-1: Earth's Systems
4-ESS2-2: Earth's Systems
4-ESS3-2: Earth's Systems

Vision and Light

Investigating Animal Eyes

As wildlife biologists, students work to figure out why a local population of geckos has decreased since the construction of a new stadium. Students consider the bright lights of the stadium and use a computer simulation to investigate the relationship of light and vision, specifically the sensitivity of different animals' eyes to light, and make a recommendation for mitigating the situation.

4-PS4-2: Waves and their Applications in Technologies for Information
4-LS1-1: From Molecules to Organisms: Structures and Processes
4-LS1-2: From Molecules to Organisms: Structures and Processes