

NGSS CONNECTIONS

The Next Generation Science Standards (NGSS) offer a new vision for K-12 science education. Released for states' adoption in 2013, and designed with decades of research on best practices for teaching and learning science, the NGSS offer an opportunity to move science education into the 21st century.

The activities in *Bug Safari* support youth engagement in some aspects of the three dimensions of the NGSS. Specifically the Science and Engineering Practices (SEPs) are used as strategies for making sense of content that connects to the Crosscutting Concepts (CCCs) and the Disciplinary Core Ideas (DCIs).

Science and Engineering Practices (SEPs)

Analyzing and Interpreting Data

Activities 8, 10, 11

- » Represent data in tables and/or various graphical displays (bar graphs, pictographs, and/or pie charts) to reveal patterns that indicate relationships.
- » Analyze and interpret data to provide evidence for phenomena.

Designing Solutions

Activity 12

- » Apply scientific ideas to solve design problems.

Engaging in Argument from Evidence

Activities 3, 7

- » Construct and/or support an argument with evidence, data, and/or a model.

Obtaining, Evaluating, and Communicating Information

Activities 4, 5, 6, 7, 8, 9, 10, 11

- » Communicate scientific and/or technical information orally and/or in written formats, including various forms of media as well as tables, diagrams, and charts.

Disciplinary Core Ideas (DCIs)

LS1.A: Structure and Function

- » Organisms have both internal and external macroscopic structures that allow for growth, survival, behavior, and reproduction.

LS2.A: Interdependent Relationships in Ecosystems

- » Organisms and populations are dependent on their environmental interactions both with other living things and with nonliving factors, any of which can limit their growth. Competitive, predatory, and mutually beneficial interactions vary across ecosystems but the patterns are shared.

LS4.D: Biodiversity and Humans

- » Populations of organisms live in a variety of habitats. Change in those habitats affects the organisms living there.

ESS3.C: Human Impacts on Earth Systems

- » Human activities have altered the biosphere, sometimes damaging it, although changes to environments can have different impacts for different living things. Activities and technologies can be engineered to reduce people's impacts on Earth.

Crosscutting Concepts (CCCs)

Patterns

Activity 11

- » Patterns can be used as evidence to support an explanation.
- » Graphs, charts, and images can be used to identify patterns in data.

Cause and Effect

Activity 7

- » Cause and effect relationships may be used to predict phenomena in natural or designed systems.

Scale, Proportion, and Quantity

Activity 2

- » The observed function of natural and designed systems may change with scale.
- » Phenomena that can be observed at one scale may not be observable at another scale.

