Girl Scouts Think Like a Programmer Journey
Content Unit Report

Grades: 2, 3
States: Next Generation Science Standards

Brownie Think Like a Programmer
Summary: In this Journey for second- and third-graders, girls will learn how programmers use computational thinking to solve problems. They will do three computational thinking activities: find out about paper programming; create a functional suncatcher to explore algorithms, variable, and functions; and create a personal innovation to discover rapid prototyping.

Next Generation Science Standards
Grade: 2-3

Disciplinary Core Ideas

DISCIPLINE		**Engineering, Technology, and Applications of Science**
DISCIPLINARY CORE IDEA	ETS1.A	Defining and Delimiting Engineering Problems
	K-2.ESS1.A	• A situation that people want to change or create can be approached as a problem to be solved through engineering. • Asking questions, making observations, and gathering information are helpful in thinking about problems. • Before beginning to design a solution, it is important to clearly understand the problem.
DISCIPLINARY CORE IDEA	ETS1.B	Developing Possible Solutions
	K-2.ESS1.B	Designs can be conveyed through sketches, drawings, or physical models. These representations are useful in communicating ideas for a problem's solutions to other people.
DISCIPLINARY CORE IDEA	ETS1.B	Developing Possible Solutions
	3-5.ETS1.B	• Research on a problem should be carried out before beginning to design a solution. Testing a solution involves investigating how well it performs under a range of likely conditions. • At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs.

Science & Engineering Practices

SEP 2	Developing and using models
SEP 5	Using mathematics and computational thinking
SEP 6	Constructing explanations (for science) and designing solutions (for engineering)
SEP 8	Obtaining, evaluating, and communicating information

Crosscutting Concepts

Patterns	Observed patterns of forms and events guide organization and classification, and they prompt questions about relationships and the factors that influence them.
Cause and effect: Mechanism and explanation	Events have causes, sometimes simple, sometimes multifaceted. A major activity of science is investigating and explaining causal relationships and the mechanisms by which they are mediated. Such mechanisms can then be tested across given contexts and used to predict and explain events in new contexts.