girl scouts of central indiana

Daisy – Coding Basics

Material list:

Step 1: For this step you have two options, you only need to complete one choice.

Option 1: (craft)

- **Build a Virtual S'more Algorithm** pdf and **Template** pdf
- Colored paper or foam (white, black, light brown, dark brown) *
- Scissors
- Glue
- Black marker
- Wiggle eyes (optional)

* You can also use white paper and crayons/markers if you don't have construction paper or foam.

Option 2: (edible)

- **Build a S'more IRL (in Real Life) Algorithm** pdf
- 1-marshmallow
- 1-small piece of chocolate
- 2-graham crackers
- A plate/napkin

Step 3:

- **Animal Algorithms** pdf
- Scissors

Step 1: Create algorithms for a computer that follow a sequence

Computers cannot think for themselves; they can only follow a set of directions a computer programmer has already given them. When a computer programmer is writing a new program for a computer to complete a job, they will first write a set of directions called an algorithm. Then they will make sure they are in the right order or sequence. The computer will then follow the directions exactly.

Let's give it a try can you follow one of these algorithms to create a s'more. Remember you need to think like a computer and follow the directions exactly.

Option 1 (craft): Build a Virtual S'more
Option 2 (editable): Build a S'more IRL (in Real Life)

Now, can you think of something you know how to do and write an algorithm for someone else to follow?

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Step 2: Learn about women in computer science

Did you know that the first computer program was written almost 200 years ago? A 17-year-old girl named Ada Lovelace is the one credited for writing that program. She, along with her friend, Charles Babbage, created a machine that could do math. Ada dreamed that one-day computers could do more than just math.

Here are a few books you could check out to learn more about Ada Lovelace.

- *Ada Lovelace, Poet of Science: The First Computer Programmer*
  - by Diane Stanley
- *Little People, BIG Dreams: Ada Lovelace*
  - by Maria Isabel Sanchez Vegara
- *Ada Byron Lovelace & the Thinking Machine*
  - by Laurie Wallmark

How would you use a computer to help someone solve a problem?

Step 3: Explore sorting algorithms

Computers programmers will often write algorithms to help tell a computer how to sort information into different categories. Use the Animal Algorithms to sort the animals into different groups.

Now that you've earned this badge, you could give service by creating an algorithm to teach your family or friends something new. What are you inspired to do with your new knowledge?