Computer Science Lesson Plan

Target Audience: 1st Grade

Time Required: One 45-minute class period, ongoing. (More time can be added if needed.)

Activity:

**Sidenote—my students have been using Kodable so you may see some references to this in the slideshow. You can modify this to fit which ever program you may be using.

- Ask if students have heard of the word 'algorithm' or know what the meaning of the word is.
- Explain that algorithms are processes that we use every day—at school, home, and anywhere else we might be during the day.
- Open the slideshow, found at the following link: https://tinyurl.com/bdenpxv3 . Go over the first standard that is on slide 2. Tell the students that they will be working on this standard today.
- Go through each of the sides, stopping as necessary to play the video, introduce the term *algorithm*, and review examples of algorithms.
- Have students help answer the questions that are on slides 7, 8, 9, 10 and 11.
- At the end of the slideshow, read the other standard (slide 12) to the students.
- Inform the students that they will be putting some pictures of activities they do every day in the correct algorithm sequence.
- Students will need to get a pencil, scissors, and glue.
- Distribute copies of the documents on this link: https://tinyurl.com/mr27kncs to each student. Depending on the class, it might be advisable to only pass out one paper at a time (there are 3 papers total).
- Instruct the students to put their names on each page.
- They will then cut off the TOP PORTION ONLY of each page—only completing one page at a time. Model this, as needed.
- They will use the bottom portion of the paper to put the pictures in order. They will use either arrows or numbers to indicate what order the pictures go in. Model this, as needed.
- Students are only allowed to glue once their paper has been checked by an adult. (This may or may not be your rule depending on how plausible it is for you to be able to check each student's paper in your class.
- Allow adequate time for students to complete each paper. Walk around and monitor the students while they are working.
- After students are finished and their papers have been checked, bring the group back together again as a class to review the meaning of the word *algorithm* and ask students to verbally provide more examples of algorithms that are completed in daily life.

Standards

- **2.AP.A.01**: With guidance, identify and model daily processes by creating and following algorithms (sets of step-by-step instructions) to complete tasks. (Student-friendly language: I can create and follow algorithms to complete tasks.)
- **2AP.V.01:** Model the way programs store and manipulate data by using numbers or other symbols to represent information. (Student-friendly language: I can use arrows or numbers to show the correct direction in an algorithm.)

Learning Outcomes: Students can provide a grade-level definition of the word 'algorithm'. Students will be able to independently put photos in the correct order (using arrows or numbers) that represent the algorithm for completing a given task.

Engage

Begin with a question.

- “Has anyone here heard of the word *algorithm* or does anyone know what this word means?”
- Wait for students to share, if any.
- Tell the students that today they will learn about the word *algorithm* and what it means.

Explore

Describe what students are going to do in this lesson.

- “Today, we are going to learn about what algorithms are. Believe it or not, you follow algorithms all the time. You will soon find out what I mean by this.”

Explain

Stress the importance of an algorithm being placed in the correct order.

- After showing the video (located in the slideshow), make the following observation out loud: “In the video, you saw that an algorithm must be carefully followed *in order,* or it will not work properly. For example, would it make sense to put the spaghetti sauce on the noodles if you have not cooked the noodles yet?” Students should know the answer to this. They might find it silly to complete an algorithm out of order.
- Have a class discussion about other algorithms that would be silly to complete if not completed in order. (Brushing teeth without toothpaste on toothbrush first, eating a peanut butter and jelly sandwich without putting on either the peanut butter or the jelly, making coffee without putting the coffee grinds and filter in the coffee maker, etc.)

Elaborate

After the activity, bring the class back together and elaborate on more examples of algorithms.

- “Can you think of another activity you do in which you are completing an algorithm?”
- Allow students to share, provide more examples if the students cannot think of any. (Making cookies, washing a car, planting a garden, etc.)
- Relate what they just learned about algorithms to their coding program, Kodable. (Or whichever program you are using.)
- Explain to the students that even though the word *algorithm* seems like a fancy or difficult word, we actually complete algorithms each day, everywhere we are!