

K Lesson Plan - Hour of Code

Objective: Students will learn that when we complete tasks, the steps taken to complete the task are very similar to steps we need to think about when we are coding an object to complete a task.

Standards:

Strand E. Computational Thinking: Programming: Computational thinking builds and enhances problem solving, allowing students to move beyond using knowledge to creating knowledge.

K-2 Computational thinking and computer programming as tools used in design and engineering.

- 8.2.2.E.1 List and demonstrate the steps to an everyday task.
- 8.2.2.E.2 Demonstrate an understanding of how a computer takes input through a series of written commands and then interprets and displays information as output.
- 8.2.2.E.3 Create algorithms (a sets of instructions) using a pre-defined set of commands (e.g., to move a student or a character through a maze).
- 8.2.2.E.4 Debug an algorithm (i.e., correct an error).
- 8.2.2.E.5 Use appropriate terms in conversation (e.g., basic vocabulary words: input, output, the operating system, debug, and algorithm).

3-5 Computational thinking and computer programming as tools used in design and engineering.

- 8.2.5.E.1 Identify how computer programming impacts our everyday lives.
- 8.2.5.E.2 Demonstrate an understanding of how a computer takes input of data, processes and stores the data through a series of commands, and outputs information.
- 8.2.5.E.3 Using a simple, visual programming language, create a program using loops, events and procedures to generate specific output.
- 8.2.5.E.4 Use appropriate terms in conversation (e.g., algorithm, program, debug, loop, events, procedures, memory, storage, processing, software, coding, procedure, and data).

Materials Provided:

- Plant a Flower picture steps
- “Today I participated...” paper to glue the steps on

Materials Needed:

- Scissors
- Glue
- Maybe coloring materials if there is time
- Chromebooks

Mini-Lesson:

1. Start by showing the movie “Hour of Code Video” that can be found on the PortaPortal under STEM → Coding → Hour of Code → Kindergarten.
2. Tell students that we will be starting with an UNPLUGGED lesson. This means that we will be learning about coding but not using a computer.
3. Ask students if they have heard of the word “Algorithm”. Explain to them that an Algorithm is a list of steps that you follow to complete a task. Think about some tasks that we do (e.g. brushing teeth, making bed, making an ice cream sundae, sharpening a

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pencil, etc.) and the steps that we need to take to complete the task. These steps make up an algorithm. You might want to choose one and work together to list the steps. Do not spend a lot of time here.

Procedures:

1. Your students will be completing a worksheet on the steps to plant a flower.
2. NOTE: I would highly suggest that you take groups to go through the Unplugged activity and while the others work on the computer and then switch. This allows them to work independently so that their individual progress is stored. IF you would rather, everyone does the Unplugged and then they pair program (one controls and completes one puzzle then they change places). The problem is that whoever is logged in will get further through the puzzles. Totally up to you.
3. Distribute the paper that has the boxes with the steps to planting a flower. Have students get a pencil. Show the paper up on a projection board. You can also download it from the PortaPortal from the Kindergarten Hour of Code folder to then show it through your computer.
4. Go through the boxes and have students X through those that are not part of planting a seed. Then go through them again and have students put a number in each box for what step it is in the process of planting a seed.
5. Then have students cut the boxes and glue them in the correct order on the paper provided that says "Today, I participated..."
6. At this point, they will be getting on the computers. This is the time to switch students from computers to working on the paper if you are doing this. Otherwise, if they are Pair Programming, tell students that one is the driver and the other the navigator. The driver is the ONLY one using the mouse. The navigator helps but does not touch.
7. Students can go to the PortaPortal and click on the 1st Grade and Kindergarten Sites. Then they click on K and 1st Grade Sites. Then they should click on the Green Monster that is on the right side of the symbaloo page. They have gone to this during our last time together, so they should know what to do. However, so you know, once they click on the Green Monster, they will click on Enter Class Code (green box). Then they enter ko107, km107, kk107, kc107 or kw107. They then find their name and click on it. They should be good from there. They can also go to Candy Quest but we have not spent as much time there but they may understand what to do.
8. While one student is coding (the driver), the other (the navigator) could be coloring in their Plant the Seed pictures on the worksheet. Make sure to switch so everyone gets a chance!
9. When the hour is up, congratulate the students on having participated in the Hour of Code. Make sure they bring home their worksheets so they can share their accomplishment with their parents.