

# 1st Grade 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:**

- Paper airplane picture steps
- “Today I participated...” paper to glue the steps on
- Blank paper for making paper airplanes

## **Materials Needed:**

- Glue
- Scissors
- Pencil
- Coloring materials

## **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 → 1st Grade.
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”. Some may remember hearing it but not remember what it means. Explain to them that an Algorithm is a list of steps that

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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 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 fold a paper airplane.
2. Distribute the paper that has the boxes with the steps to folding a paper airplane. Have students get a pencil. Show the paper up on a projection board. You can also download it from the PortaPortal from the 1st Grade Hour of Code folder to then show it through your computer
3. Go through the boxes and have students X through those that are not part of folding a paper airplane. Then go through them again and have students put a number in each box for what step it is in the process of folding a paper airplane.
4. Then have students cut the boxes and glue them in the correct order on the paper provided that says "Today, I participated..."
5. **BEFORE PROCEEDING, check the time. I would like ALL students to have the opportunity to get on a computer and code at some point during the Hour that we are doing this activity. This might mean that you skip making the actual paper airplane.**
6. If there is time, provide a blank piece of paper to all the students and have them make a paper airplane following the directions they just cut out and glued.
7. When they are done, students should get their chromebooks and they can go to the various sites I have provided for them. Students can access grade appropriate coding sites on the PortaPortal. Click on STEM → Coding and then their appropriate grade. If they go to Kodable, they need to ENTER CLASS CODE which is 25stem107. If they go to code.org, they need to enter their picture and they should know this by now.
8. When the hour is up, congratulate the students on having participated in the Hour of Code. Make sure they bring home their worksheet and airplane so they can share their accomplishment with their parents.