

Human Computer

Snap, clap, snap, snap, stomp! Jump into the world of computers and play a game where you can only communicate using lines of code.

TEKS:

TA 4.2 B: The student is expected to use a design process to create programs that include sequences, loops, and conditionals to express ideas or address a problem.

TA 4.2 C: The student is expected to analyze a code and how the code may be reused to develop new or improved programs.

Materials:

- Painter's tape
- Paper
- Path template – attached

How To:

1. Create a set of rules that tells your human computer what to do. This can be done by using *conditional statements*, or "If-then" statements. For example, "If I clap my hands, then you jump." Practice a few of these by coming up with a few different statements.
2. Add an "Else" statement to your conditional statement. This gives an extra set of instructions when the first condition is not met. So now it becomes "If I clap my hands, then you jump. Or else, sit down quietly."
3. Once you both feel comfortable communicating through code, it's time to get the human computer ready for its mission: get to the finish line! Create a 5x5 grid with painter's tape on the floor. Using the template attached, the human will create a path for the human computer to follow. Mark the starting point and finish line and add obstacles to the path where the human computer cannot go. Do not let the human computer see the path!

31 Days of STEM FUN!

www.destember.org | [#deSTEMber](https://twitter.com/deSTEMber) | © 2022 by Girlstart www.girlstart.org

DeSTEMber is a trademark of Girlstart

4. Now it's time to reset the human computer and teach it only the set of codes it needs to complete the path. Come up with new conditional statements for controls like: move forward, backward, left, right, etc.

Example: "If I snap, then move forward." "If I clap, then turn right."

5. On paper, the human should now plan and write a *program*, or a sequence of code, for their human computer to follow to make it to the finish line without running into any obstacles. Do not show this to the human computer! Instead, you will be performing these actions to communicate to the human computer!

Example: "Snap, Clap, Snap, Snap, Stomp..."

6. After reviewing your program, run the program by performing each action for your human computer to follow. Revisit your program and make edits if your human computer ends up stuck or runs into an obstacle.
7. Challenge yourselves to see if there are other paths the human computer could take to get to the finish line. Can you find the shortest path? Can you create a loop? Switch roles, create new paths, add more obstacles, and be creative as you play more rounds of Human Computer!

STEM Explanation:

Computers are all around us and can be used to do so many different things! They work with the help of **computer programs**, which use lines of code to tell a computer what to do. By providing a set of rules for the computer, a program takes input from its user to find the desired output. The instructions laid out by computer programs typically make larger problems shorter and easier to solve.

Career Connection:

Video game designers use computer coding knowledge to program the components of a game. They may use their own digital art or employ digital designers to create the setting and agents of a game. They often work in teams and work through a design process that involves storyboards, drafting, problem solving, and redesigning to improve their work.

Resources:

<https://www.technokids.com/blog/programming/scratch/teaching-if-then-statements/>

<https://scratchgarden.com/blog/if-you-want-to-teach-conditions-in-coding-to-kids-then-read-this/>

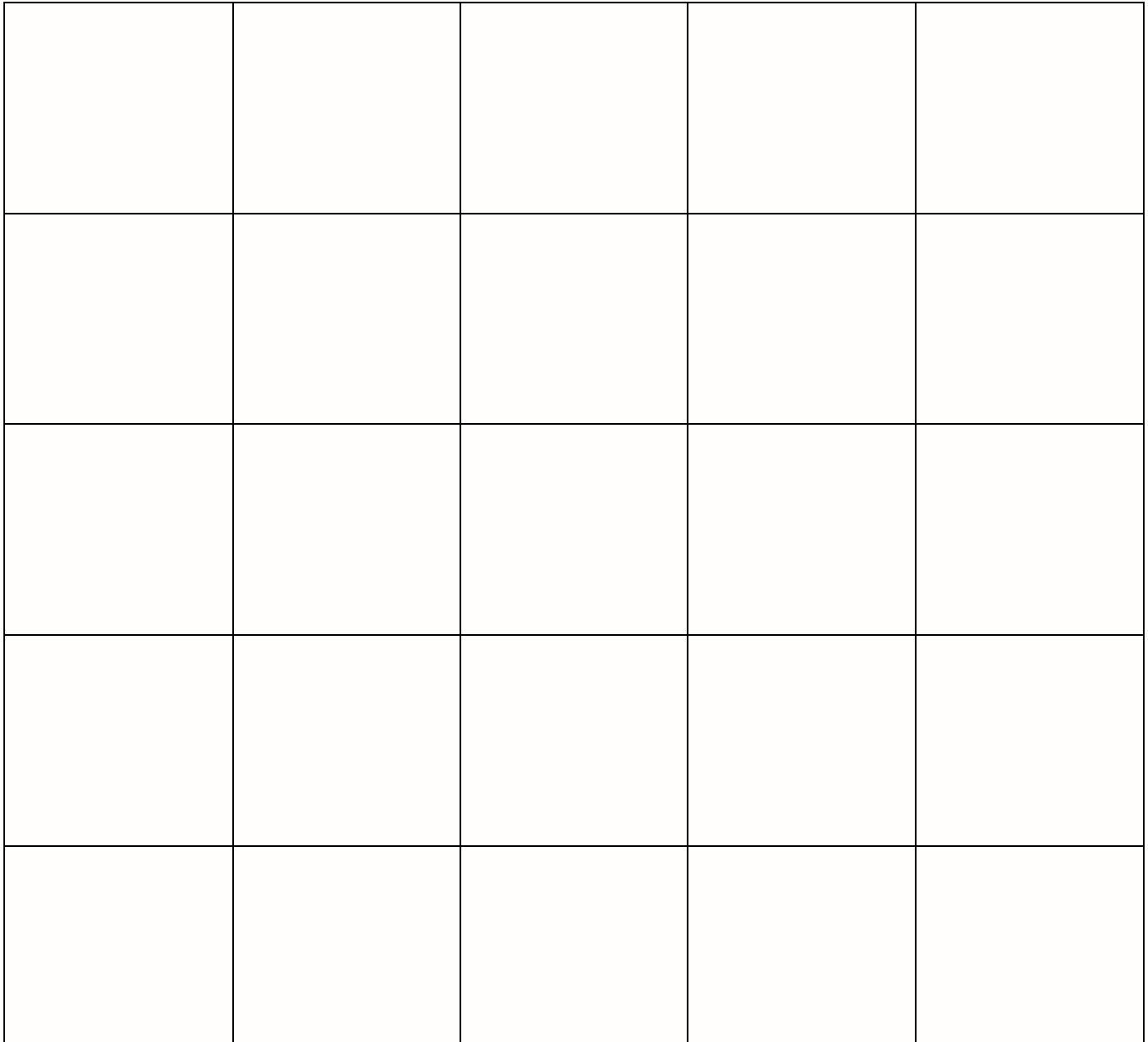
31 Days of STEM FUN!

www.destember.org | #deSTEMber | © 2022 by Girlstart www.girlstart.org

DeSTEMber is a trademark of Girlstart

Path Template

Use this template create the path for your human computer. Mark the starting point, the finish line, and add obstacles for the human computer to avoid.



31 Days of STEM FUN!

www.destember.org | [#deSTEMber](https://twitter.com/deSTEMber) | © 2022 by Girlstart www.girlstart.org

DeSTEMber is a trademark of Girlstart