SWITCH & GLITCH:
Tutorial
ADDITIONAL TASKS

Robot Play

a) Pair up with a classmate!

b) Decide which one of you is the robot and which one the programmer.

c) The programmer gives specific instructions to the robot and the robot fulfills them. For example: “Walk forward one step. Duck. Grab object (hat) in front of you.” Remember: You can’t just tell the robot to get the hat.

Note: If you wish, you can let students play the robot as a warmup exercise. The idea is to learn to give explicit orders and notice things that can go wrong. Such as: the command "turn left" - robot would interpret this as her left and not the programmer’s.

Play Instruction: The students pair up. The first one from the pair is a programmer and the second one is the robot. The programmer gives short orders so the robot can move around and pick up an item. The student playing as the robot should not interpret words but fulfill them to the letter.
**ASK:** What is the device in the picture?
Answer: It’s a computer from the 1950s

**TELL:**
“How computers operate: at the most basic level, computers are based on ‘on and off’ circuits. They don’t *think*. Instead, they execute given orders. It is important to know how to give these orders so that the computers understand them and don’t malfunction. This is why we are playing Switch & Glitch today.”

**Picture:** First mass-produced computer, IBM 650, that was programmed with punched cards. Location: Texas A&M University, College Station 1950s.
The computer is opened to show storage drum and rear of front panel.
Source: [Wikimedia Commons](https://commons.wikimedia.org/wiki).
**TELL:** “Today, we are playing Switch & Glitch. We’ll play the tutorial levels and practice giving commands to robots.”

**Note:** Students enter the levels by tapping on the room in front of them (see slide).
The first phase playing the game is to get familiar with the game by playing the space station tutorial:

1. You can access the first tutorial level by pressing the door in front of you in the main screen. After you're in the room (first picture), press again to enter the level browser (second picture) and finally, click the large number one on the side of the space station.
2. The game begins with an animation (third picture). Press the screen to keep the animation moving forward.
3. These first tutorial levels teach the basics of controlling your robot. The game highlights the options you need to choose (but only in this tutorial).

Playing the game consists of filling the command input (A) of the robot with movement commands (B) and then playing them out by pressing the blue “play” button (C).
Complete the **space station** (single player levels).

When you’re done, try **customizing your robot!**

You can let the students play the game until there are about 10 minutes left of the lesson. At that point, move on to the next slide.

**IF STUDENTS HAVE TROUBLE PLAYING, HERE ARE SOME TIPS:**

- In most levels, students need to reach the purple goal tile to complete the level
- There are tiles with Metagel that students can collect by entering the tile
- After each level, students get a star-rating for their efficiency (= the lower the number of moves, the higher the star count)
- Each tutorial level introduces a new command, one at a time. Students unlock full control of the robots as they play through the tutorial.

After the students complete the tutorial levels on the spaceship, they enter a lush jungle planet. After the tutorial is complete, players can choose between the tutorial levels and the jungle planet when they next enter the game.
TELL THE STUDENTS: “You can customize your robot by entering the 3D-printing room. To do this, start from the main screen, turn to the left (either by swiping or by pressing the arrow on the left) and then press the room to enter it. Buying new customization items costs Metagel.”

MORE INFORMATION ON THIS SCREEN:

1. Robot selection
2. These boxes are, from left to right, gear, painting and available Metagel.
3. You can cycle through printable gear by pressing the “head”, “face”, “tail” or “back” buttons. Some of this gear requires Metagel.
4. Once you have customized the robot to your liking, press this camera button to share it on Creatubbles.com so people can see your screenshot.
5. Once you’re done, press the blue button to return to the main screen.
Go through the yields of the lesson with the students. How did the students manage? Pay attention: **which things were most difficult** and does a **specific student need extra help?** It is likely that there will be extensive variation among the students, as some may have played similar commercial games, giving them an edge.

If you task the students with taking screenshots of the game, the Creatubbles service works excellently to build this kind of portfolio.
You can give the students time to consider these questions. They can answer them as pairs, as small groups, or individually, whichever way you prefer. These tasks function as control questions and help students demonstrate their learning which will help your assessment.

**DISCUSS:** What do students remember about computers? They will probably tell you that computers just follow orders and don't think for themselves.