



Lesson 10: Sensing things III

By the end of the lesson, students will be able to

- ✓ Use if_then_else_ blocks to check if something has happened or not
- ✓ Create and use variables to count information, like scores in games
- ✓ Create clones (optional)

Things to do before the class

- ✓ Make sure all the computers that the students will use have decent internet connection.
- ✓ Make a list of usernames and passwords for each group's Scratch account. Some students might not remember their usernames or passwords.
- ✓ Read the student guide and engage with the given activities.
- ✓ Have a whiteboard and marker to write things down.
- ✓ Read the lesson plan and watch the videos linked inside. These videos are meant for teachers to help them learn Scratch as they run these lessons for their students.



0. Access the student guide (5 mins)

- ✓ Ask students to type this URL in the address bar: cd8.notion.site

Note: Because students have typed the address in the last class, the browser will usually auto complete the address when they type the first few characters.

1. Debugging exercise (10 mins)

Ask students to read till the **Let's start with debugging!** section(page 1).

Let them debug any one of the two projects. Both projects are about if...then... blocks.

- ✓ Provide hints if needed but avoid giving direct solutions.
- ✓ It's okay if students aren't able to debug their projects successfully. What matters is that they engage with the bugs and try to understand the code.
- ✓ Some students will debug their projects sooner than their peers. Ask them to try debugging the other project too.

2. Getting ready for the lesson (5 mins)

Ask students to read the **Getting ready for the lesson** section(page 2). They should

- ✓ **Sign in to student accounts**
Students often struggle with the CAPTCHA
- ✓ **Change color mode to high contrast**
High contrast blocks are much easier to read
- ✓ **Explore the backpack**
Students use backpack to get sprites from other projects



3. Exploring starter projects (15 mins)

Ask students to go through the **Let's explore some examples** section (page 3). Ask students to explore any one of the two starter projects. Both projects are games with slightly advanced features.

- ✓ Students might face difficulty in understanding the instructions written on the project page. Explain briefly if necessary.
- ✓ Ask students to “see inside” the project, play with the code, change it and create something slightly different.
- ✓ Students tend to spend time playing these games instead of studying them. Challenge them to modify the game and introduce something new to it.
- ✓ Nudge to pay attention to the use of variables in these projects. Both projects make use of variables in different ways.
- ✓ Some students might finish working on their starter project before the given time. Ask them to work on the other project.

This lesson introduces student to **variables**. One can think of variables as objects (in computer's memory) that can store numbers, words, letters etc. These videos will help you understand more about variables:

- ✓ [What Are Variables and Lists in Scratch? \(Part 1\) | Tutorial](#)
- ✓ [05. Scratch - Variables](#)



4. Games with score (45 mins)

Ask students to go through the **Let's create a game with score** section (page 3).

- ✓ Three prompts are provided to help students with ideas for their projects. Allow students to work on a different idea if they want to. Like in the previous lesson, make sure their ideas are not too ambitious.
- ✓ Ask these questions to help students think about their game design.
 - ✎ How will the score increase in your game?
 - ✎ Does your game have multiple levels? If yes, what do they look like?
 - ✎ How is your game different from the one you created in the previous lesson?
- ✓ Ask students to explore the blocks provided as suggestions. They can also revisit one of the starter projects to see how the given blocks are used there..

Some students might finish their project sooner than their peers. Ask them to work on the **More things to explore** section.

Watch this video to see the use of variables in a game: [Scratch Tutorial | Underwater Pong | Easy Beginner](#)



5. More things to explore (Optional)

This section helps you differentiate learning in your class. Ask students, who completed their project to go through the **More things to explore** section (page 5 & 6).

This section guides students on creating clones. Games often requires multiple copies of a sprite; for example, bullets, hearts, villains etc. It's a tedious process to duplicate such sprites and code each copy separately. Cloning allows us to create copies of sprites and control them using the same code. These videos will help you understand cloning better:

- ✓ [Unlock The Scratch Block: Clone Block](#)
- ✓ [06. Scratch - Clones](#)

This section is useful for students who have understood the concepts of conditionals, variables, and want to create more advanced games.

6. Reflection (10 mins)

Ask students to go through the **Let's Reflect** section (page 6). Ask students to think on the questions and discuss with their group member. If you can, provide them with pen and paper to note their reflections.

- ✓ Before students leave, ask them to exchange their reflections with two students other than their group member.

Note: Reflecting on their learning experience helps students notice things they might have otherwise missed. Listening to the reflections of their peers helps students see things differently and relate to their peers better.