



Let's Learn Scratch!

Control Blocks

Lesson Plan: Class 03 / P/ 21



(Rough sketch – design phase)

Overall goal of the lesson: Children will start to use the scratch visual environment to write simple programs. **Prior knowledge required:** Familiarity with concepts like programs, algorithms, sequences, loops and conditionals that were taught in previous CSpashshala lessons. Ability to use a basic computer, any web browser, keyboard and mouse.

MODULE 1:

Module time: 35 minutes - 1 hour (depending on how much worksheet practice is done in class)

Goal: Build on the Control block concept introduced in the previous lesson and learn how to introduce Conditionals into the program. By the end of this class, challenge the children to find new kinds of blocks by themselves.

Description: Scratch is a simple to use visual tool that helps children to create short and fun animations. In this process, they develop computational thinking and learn basic computer software concepts like developing an algorithm, writing a program to code the algorithm and debugging and running their program. In this lesson, they will learn how to add a conditional inside a loop to make the Sprite do something different when the condition is met. They will play around with different kinds of conditions and actions and also learn more of the Scratch environment and new action types in the process.

Material required:

Physical:

1. A computer that can run the desktop based Scratch 2.0 or browser-based Scratch programming environment at <http://scratch.mit.edu>.

Electronic:

PPT Presentation for Scratch Control Blocks

For the browser version, it is recommended that teachers create a login and password for the class to save their work and share projects. For a desktop PC based environment, it is not required but recommended. (This lesson in particular builds on the program from the last lesson, so if there is no saved project, the teachers may need to do some setup to save the class from having to re-create the program again for this lesson.)

WS for Scratch Control Blocks lesson (two parts).

Procedure Summary:

1. Start with a revision of the Scratch concepts from the last class, and the concept of Conditionals from previous lessons.
2. Starting with the project from last class, work on the problem of making Billi stop when she gets to the edge of the screen.
3. Continue to develop the students understanding of conditional by experimenting with different conditions and actions, such as making Billi stop when she touches the edge or when a key is pressed. Note: As the lesson progresses, the powerpoint will give less and less detailed instructions on actually making the program - this is intentional as it is assumed that the students have understood the basic mechanics of using Scratch and putting blocks together. If you see students struggling with this, then, spend as much time as needed for them to get comfortable with these basics of editing a Scratch program.
4. Do the worksheet to further reinforce the concepts learned so far.

Procedure Details:

1. Do a brief revision of what the students have learned so far - Sprite, Motion blocks, etc.

2. Remind them of the program they wrote the last time with Billi, the sprite cat. At the end of the last lesson, the students were introduced to a Control block - repeat N. We had written a program using this but Billi has gone off the edge of the screen. In this lesson, we will learn how to use CONDITIONAL blocks to catch when Billi walks off the screen and instead make her stop when she reaches the edge.
3. Before going into Scratch, do a quick revision of the concept of a Conditional. if (condition) then action from past lessons. Help the students remember what are the parts of a CONDITIONAL statement, namely the condition and the action. Do some exercises using some simple if..then..else conditionals as shown in the powerpoint slides. It is important that the students understand what goes into the condition, and what goes into the action, so do not proceed until this is completely clear.
4. Once the students are comfortable with the CONDITIONAL concept, now, go to Scratch and re-open the program from the last class. To do this, click on the MyStuff icon and when the tab appears with different saved projects, press 'See inside' for the Billi Walks project. (See ppt for a visual for how to do this.)
5. Revise the program on the screen and make sure the students know what it does. (See last class ppt or LP for this.)
6. Note: As the lesson progresses, the powerpoint will give less and less detailed instructions on actually making the program - this is intentional as it is assumed that the students have understood the basic mechanics of using Scratch and putting blocks together. If you see students struggling with this, then, spend as much time as needed for them to get comfortable with these basics of editing a Scratch program.
7. Once ready, introduce the if-then block into the program. Show them the action 'stop this script' in the Control palette and how to insert it into the if-then block. Show them the spot where the condition goes in the if-then block. Show them the different blocks in Scratch that ask 'YES/NO' questions and can be used as the condition.
8. In the class, do an example where the condition is 'touching edge' from the Sensing palette.
9. Once the basic use of the conditional and its effect has been understood, now have a fun class discussion and talk about different conditions and actions the students could come up with for Billi to do.
10. The most important concept for the students to understand is that a condition asks a YES/NO question, and the action does something based on that answer. As you work through the remainder of the lesson, continue to check if the students are getting this concept.
11. In the ppt, there are several examples of programs with different actions and conditions, as possible answers for the discussion questions. The first few are where the action is different - Billi will say "I'm here", change her size and color, before stopping. The second one checks a different condition rather than touching the edge, if a space-key is pressed. Work with the students to make and run these programs. Feel free to experiment with other actions and conditions to make it fun for the students.
12. At the end of the lesson, give them a brief review of various kinds of LOOPS - the repeat N loop, forever loop and the repeat until loop. This will be helpful as they do the exercises in the worksheet.
13. Give the class 10-15 minutes to do the worksheet.

Assessment :

Write the programs in the Worksheet.

Information Broadcast : In Computer Science, the children continued to learn the Scratch programming tool and wrote more programs.