



## Lesson 2: Motion

### Summary

Students will review the concepts of instructions and sequences. They will learn how to create sequences of the same motion block (e.g. left, left, left). They will also learn to create sequences using a variety of different motion blocks (e.g. right, down, jump, go home).

<b>Objectives</b> <i>Students will learn that the ...</i>	<b>Objectives</b> <i>Students will be able to...</i>
<ul style="list-style-type: none"><li>• Number of motion blocks in a programmed sequence corresponds to the number of actions performed by a character</li><li>• Order of commands in a programmed sequence directly corresponds to the order of actions performed by a character</li></ul>	<ul style="list-style-type: none"><li>• Combine different motion blocks into programmed sequences</li></ul>

### New Programming Blocks

- Jump
- Go Home
- Reset Size
- Turn clockwise
- Turn counterclockwise



### Schedule

#### Review (5 minutes):

- During our last lesson, we played Simon Says. What did you learn from that activity?
- When you programmed your teacher, you had him/her go to a certain spot in the classroom. How did you get your teacher from one spot in the classroom to another? What did you find hard about this activity?
- What is a program?
- We also worked with ScratchJr on the iPad. What was something you liked? What was something hard?

#### Kindergarten

**Programmer Says (5 minutes):** The directions for this game are the same as those for Simon Says, except sequences of three instructions are given (e.g. step forward, step back, jump). The teacher should emphasize the importance of following directions and the order of instructions.

#### 1st and 2nd grade

**Guess the Program (5 minutes):** The teacher should act out several short programs. Students should then be given the opportunity to guess what the program acted out is (e.g. step forward, step back, jump).



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### All grades

**Program the Teacher (15 minutes):** Students will be responsible for directing their teacher to a specific location in the classroom. However, during this lesson, students will only be able to use a specific set of possible instructions instead of simply using plain English. Examples of these specific instructions are:

- Step forward
- Step backward
- Turn right
- Turn left
- Turn until you see something

This activity will work the same way as it did in the prior lesson. However, this time students are encouraged to use this exact instruction set.

**Introduction to New ScratchJr Blocks (10 minutes):** The teacher should demonstrate to children how to use the following blocks:

- Hop
- Go Home
- Reset Size
- Turn clockwise
- Turn counterclockwise

*Materials: iPad for teacher only.*

**Sequencing in ScratchJr (10 minutes):** The teacher should begin a new project in ScratchJr. S/he should place the Scratch cat and the treasure chest characters on the same line on the screen (on a horizontal or vertical line). S/he should then ask students which blocks need to be placed next to each other in order for the cat to successfully move toward the treasure chest. Three different scenarios should be set up (e.g. cat in the upper left corner and treasure chest in lower left corner; cat in the lower left corner and the treasure chest in the bottom right corner) for the students to solve together as a class.

*Materials: iPad for teacher only.*

**ScratchJr Exploration (10 minutes):** The teacher should then **hand out the iPads** and allow students to explore the ScratchJr iPad application. Encourage them to experiment with recently learned blocks, as well as with blocks that have not yet been taught. Have them practice putting different programming blocks next to each other to make the cat move in different directions.

**Wrap Up (5 minutes):** Make sure that students save their projects. Provide a preview of what will be taught in the next lesson. Collect iPads.