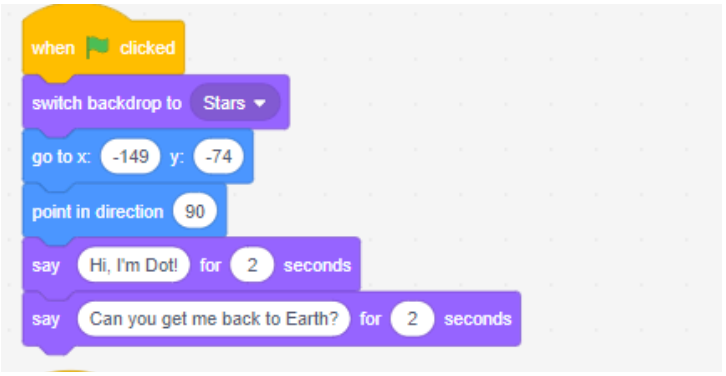
Scratch Abstraction Activity
Teacher

About Scratch

Scratch is a free online platform where youth can create stories, animations, games, and much more. Scratch is a **block-based coding language**, where blocks are used to represent instructions and students "learn to think creatively, reason systematically, and work collaboratively — essential skills for everyone in today's society" (Scratch, 2019).

To learn how to create a Scratch Teacher Account, see Scratch Teacher Account FAQ.

Abstraction Activity: Dot Returns to Earth Code Overview	
	This is the starting code for the Scratch Abstraction Activity. Each block is explained in the "Code Explained" section below, along with suggestions for how students could code Dot to get back to Earth. Students do not necessarily need to change this sequence of start-up code, but rather, add blocks to get Dot to move back to Earth. View the starting Scratch Program here: https://scratch.mit.edu/projects/334508472
Sprites	
Dot 	**Earth** 
Code Explained	

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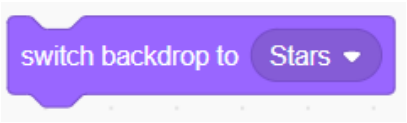
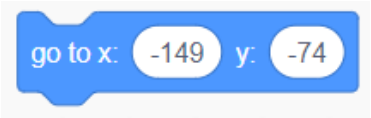
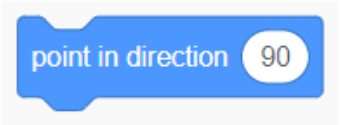
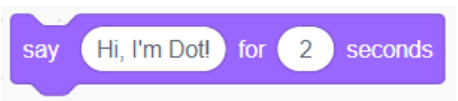
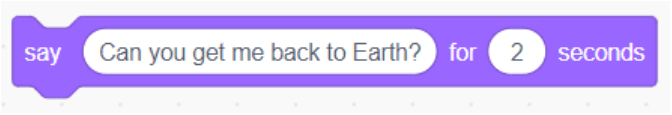
When the Green Flag is clicked - DOT	
	*This is an example of an Event block.* When the **Green Flag** is clicked, the program will begin and the following will happen:
	The backdrop of the stage is set to Stars.
	The **Dot Sprite** goes to the bottom left corner, with (x,y) coordinates (-149, -74).
	The **Dot Sprite** points in direction 90° (points right).
	A speech bubble appears for 2 seconds above the **Dot Sprite**. The text reads "Hi, I'm Dot!"
	A speech bubble appears for 2 seconds above the **Dot Sprite**. The text reads "Can you get me back to Earth?"
When the Green Flag is clicked - EARTH	
	*This is an example of an Event block.* When the **Green Flag** is clicked, the program will begin and the following will happen:
	The **Earth Sprite** goes to the top right corner, with (x,y) coordinates (173, 97).

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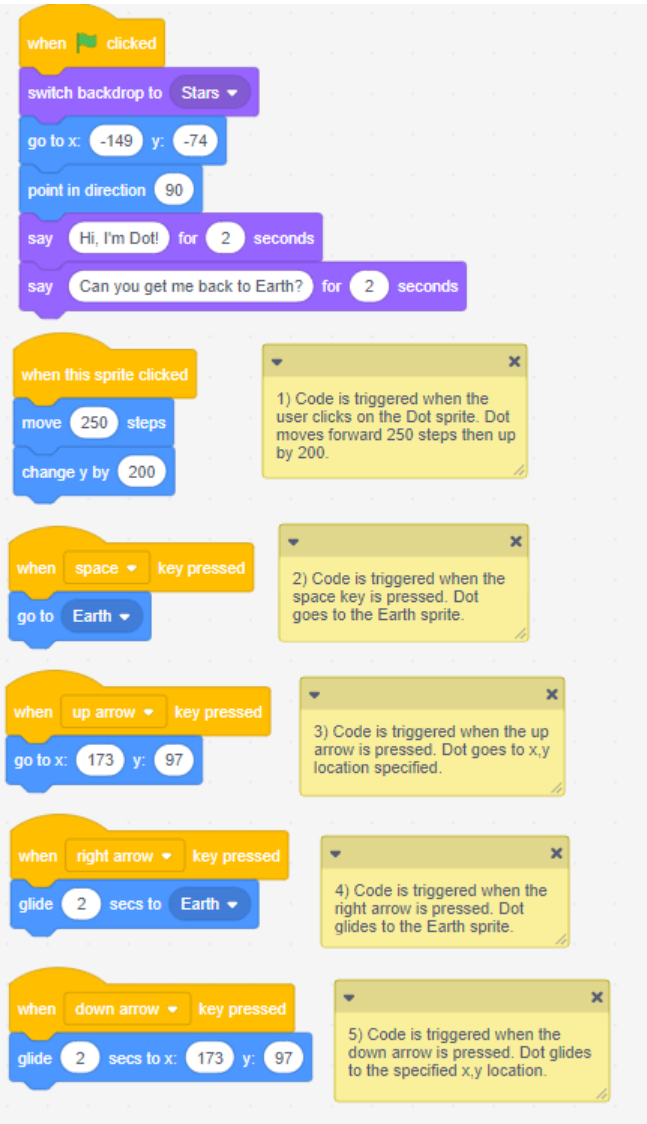
Potential Solutions



These are 5 potential solutions to code the Dot sprite to return to Earth. They are suggestions only. There are many other ways that students could code Dot successfully!

View the Scratch Program with potential solutions here: https://scratch.mit.edu/projects/334785578

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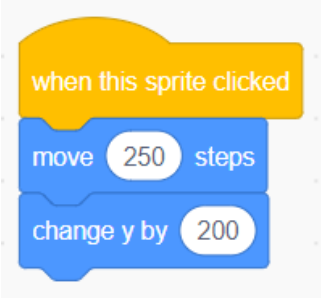
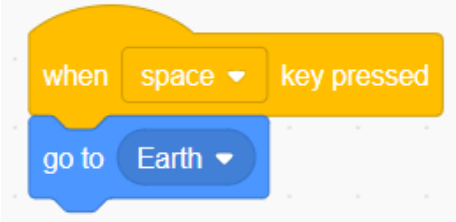
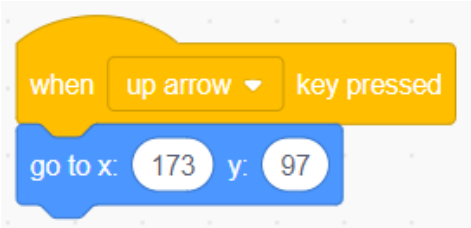
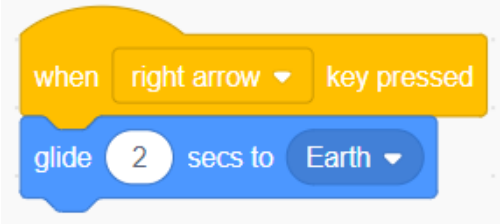
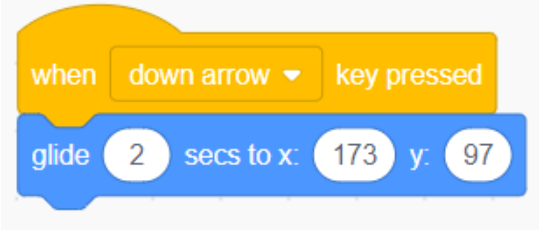
	When the **Dot Sprite** is clicked, the following will happen: Dot moves forward 250 steps. Dot's y-coordinate increases by 200.
	When the **space key** is pressed, the following will happen: Dot goes to the location of the Earth sprite.
	When the **up arrow key** is pressed, the following will happen: Dot goes to the (x,y) location of (173,97).
	When the **right arrow key** is pressed, the following will happen: Dot glides to the location of the Earth sprite over 2 seconds.

	When the **down arrow key** is pressed, the following will happen: Dot glides to the (x,y) location of (173,97) over 2 seconds.