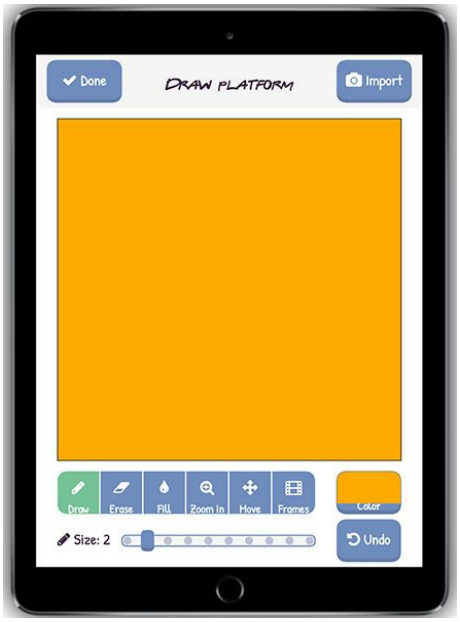
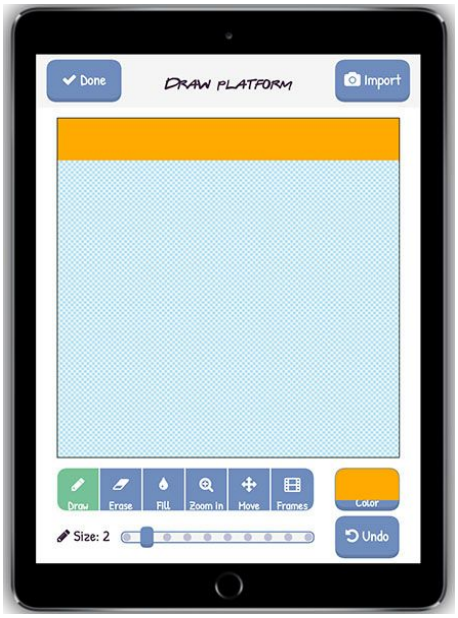
Sketch Nation Create Lesson Ideas:
Teaching the Fundamentals of Coding

Sketch Nation offers a great on-ramp to teach the fundamentals of coding -- the instructions that control how computer hardware and software behaves. Creating games with the Sketch Nation platform allows students to experiment with direct computer commands and logic, providing virtually real-time feedback into how well their ideas translate into application performance.

Lesson Idea - Simple

For students who are new to this topic, engage in a discussion about how changing the drawing in simple mode games is like coding.

For example, a thin platform on “Up jumping” is harder to play than a tall square platform. This is because the distance between the thin platforms is longer than the distance between the tall platforms:

	
	
Tall platform - easier game	Short platform - harder game

Conversely it's harder to pass a wide enemy in "Traffic" than a thin one, since the wide enemy takes more space on the road. For example, it would be easier to drive between motorcycles than cars because motorcycles are narrower:

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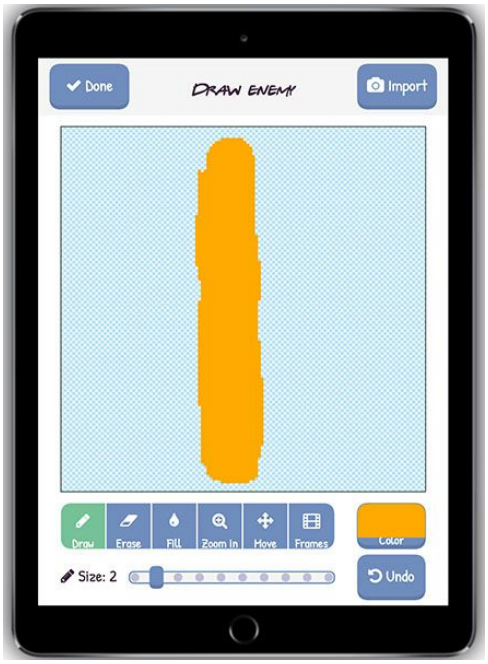
<td> 
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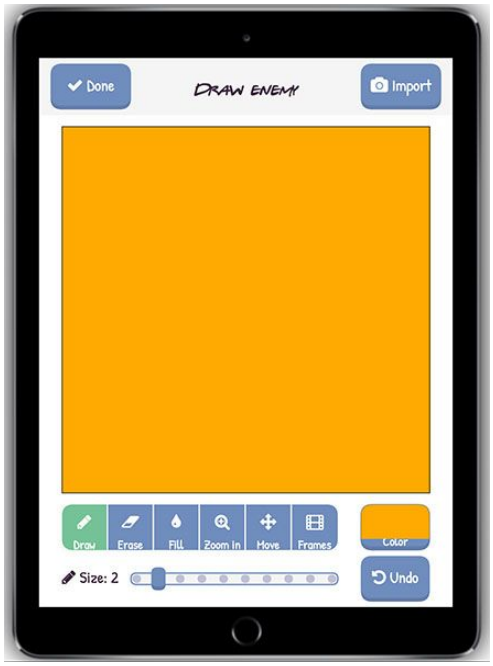
<td> 
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<td>Thin enemy - easier game</td>
<td>Wide enemy - harder game</td>
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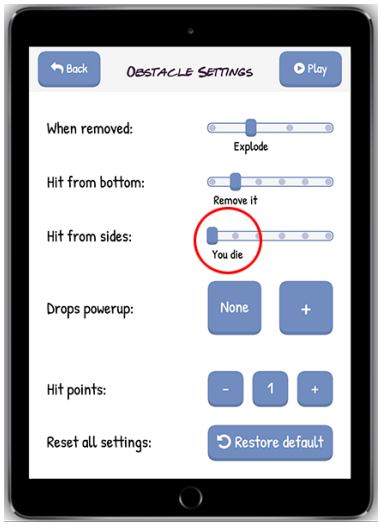
Have students create and play different versions of the same game to see and experience the impact of these different approaches directly.

Lesson Idea - Advanced

For students who already have some coding exposure, experiment in “Advanced” game mode by showing how modifying settings can completely change the gameplay experience.

For example, in Side running, have your students create different collision response settings for obstacles to see how these changes impact their games.

		
		
Brick obstacle - set to “Bounce” for side collision	Brick obstacle - set to “Remove it” for side collision	Brick obstacle - set to “You die” for side collision

Lesson Idea - Expert

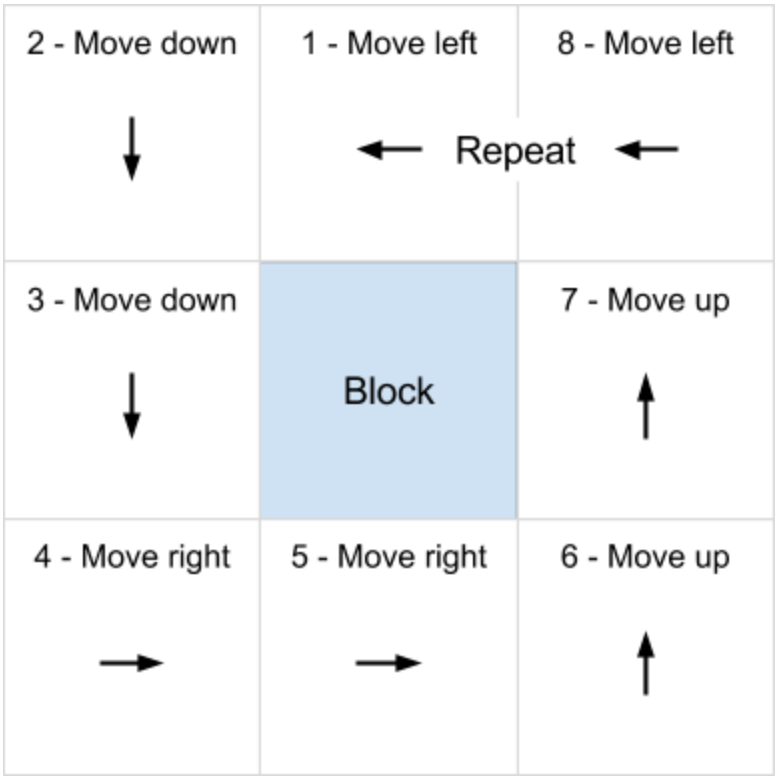
One type of coding skill involves using a combination of a few simple commands to create something complex. For “Expert” student coders, Sketch Nation offers exciting features such as custom movement for enemies -- this allows the user to specify each step an enemy takes. With custom movement, students can use the commands “Move left, Move right, Move up, Move down and Wait” to add complex movements into their games, just like real coders might do.

This gif shows custom movement added to the star enemy:

The custom movement steps are set to:

1. Move left
2. Move down
3. Move down
4. Move right
5. Move right
6. Move up
7. Move up
8. Repeat

When placed on top of a single block, the star follows the steps above and travels around the block.



Note that the star object is set to be a floating object, so gravity does not affect it.

Custom movement is a simple and easy way for users to make their games more unique and interesting, learn a basic aspect of coding without needing to use a specific coding language, and make their games more fun in the process!

For a lesson, have your students create a Platforming Expert game, then have them add enemies with custom movement to make the game more interesting. They can start with simply making objects move left and right, then move into more advanced ideas like making the enemies follow a predetermined path. Because your students will be playing with their custom-coded enemies, it makes the entire process more fun.