

Lesson 6 - Creating Objects - Teacher's Guide

<http://www.stencyl.com/teach/act6/>

Overview

Introduce students to the idea of creating new actors (objects). Talk about the differences between Actor Types and Actor Instances (Class vs. Object).

Outcome

Through the activity, students will create new actors (objects) on the fly, thereby further developing their understanding of behaviors and code reuse.

Lesson Plan (1 - 2 hours)

Discussion
10 minutes

Cover the topics under Discussion Notes (Page 2)

Present the topics. Pose questions at appropriate points and encourage students to participate in the discussion.

Activity
50 minutes

Extend an existing game

Students will apply what they've just learned to add functionality to an existing game.

Activity
60 minutes

Work on extra activities

Students will work on a more challenging set of activities in order to demonstrate mastery of the concepts they've learned.

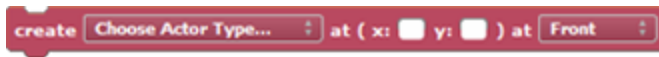
Note: Extra activities are optional but recommended.

Discussion Notes

Topic 1: Creating Actors

Up until this point, students have been working with actors already placed inside a scene. Now, they'll learn how to create new actors on the fly and how to manipulate them.

Use the following block under **Scene > Actors** to create a new Actor.



The **Actor Type** is the kind of Actor you want to create. You can either choose a specific Actor Type, or in some cases, you can plug in an Actor Type attribute, thereby letting you change the kind of Actor Type that is created on a case-by-case basis.

X and Y represent the position, in absolute coordinates, at which to create the actor.

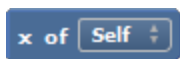
The final dropdown represents the **drawing layer** to place the actor on. Leave this at Front.

Topic 2: Referring to Actors you just created

You'll quickly discover that *you'll want to refer to the actor you just created*. For example, if you want to set its speed (to make it move).

How do you do this?

You may have noticed by now that many blocks that work with Actors have a dropdown field that says **Self**.



Blocks that work with Actors **need to know which actor they are referring to**. Self refers to the Actor to which the behavior is attached. For our Hero with a Walking behavior, Self refers to the Hero.

Click on the dropdown, and you'll discover more options.



Last Created Actor lets us refer to the Actor we just created.

Putting this all together, here's an example where a bullet actor is created and given an initial speed to move at.



Aside: The game may crash or act unpredictably if you attempt to use Last Created Actor before any Actors have been created by you. Similarly, if you kill an actor that you just created and use Last Created Actor, the game may crash.

Further Discussion: For more advanced classes, you may want to go over using Attributes to store Actors for referencing in the future.