

Evil Clutches: Stages 4, 5, and 6

This tutorial is a continuation of the Evil Clutches game build. By now you should have tested STAGES 1, 2, 3. In Stages 4, 5, and 6 you will learn more about creating properties for objects. You learn what an **instance** is and how to create that instance at a location that is **relative** to the location of another object. Counting numbers for a score can also be **relative** based on an established starting point. Find the definitions for the *new vocabulary* in the Glossary. Write them on your Tutorial Guide.

NOW YOU SHOULD CONTINUE BY COMPLETING STAGES 4, 5, AND 6.

BE SURE TO PAUSE TO COMPLETE HYPOTHESIS AND EVALUATIONS WHEN PROMPTED.



DO NOT USE THE TEST BUTTON IN THIS ACTIVITY UNTIL YOU ARE PROMPTED.

START HERE: Make sure you are in advanced mode and that you open your file *initials_clutches*.

STAGE 4:

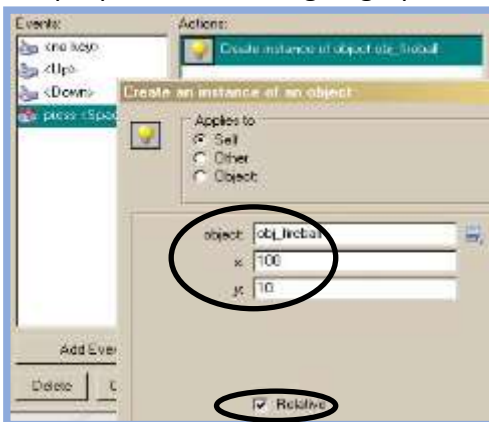
Creating a Fireball instance

- 1- Create **obj_fireball** and assign it **spr_fireball** with all of the default settings.
- 2- The first property is a **Create Event** where the action is to **Start moving in a direction**.
- 3- Select the **right arrow** and set the speed to a fast **32** as shown.
- 4- Create an **Other: Outside room Event** and set it's only Action to **Destroy the instance** of itself.
- 5- Click **OK**.

An **instance** is the appearance of an object at a specific location based on an event that occurs in a game. EXAMPLE: Press a spacebar and an object shows in the room.



- 6- Open up **obj_dragon**. Add a **Key Press<Space> Event**. In the **Main 1** tab, select the **Create an instance of an object**. Make changes to the **obj_fireball** by setting its **x** coordinate to **100** and its **y** coordinate to **10**. Click the box to select **Relative**. NOTE: Review the definition of the term **relative** as applies to Gamemaker properties. The dragon graphic below may also help. You will write about this in **HYPOTHESIS** for **STAGE 4**.



"Relatively" easy to understand

You will see this term used in several ways in Gamemaker. It is important to create properties so that actions occur in specific locations. You wouldn't want the fireball shooting out unmentionable parts of the dragon, would you? By setting **relative** (meaning as related to), you are telling the property to create the instance at a precise location relative to another object. As the dragon moves, the program creates the instance of the fireball at the location of the mouth based on the x and y coordinates, **relative** to the origin of the asset (upper left corner). *Coordinate systems* are used throughout Gamemaker for rooms, assets, and instances. More information on this is available in future tutorials and can be researched in Concepts Explained.



SAVE NOW!

DO THIS ON YOUR TUTORIAL GUIDE

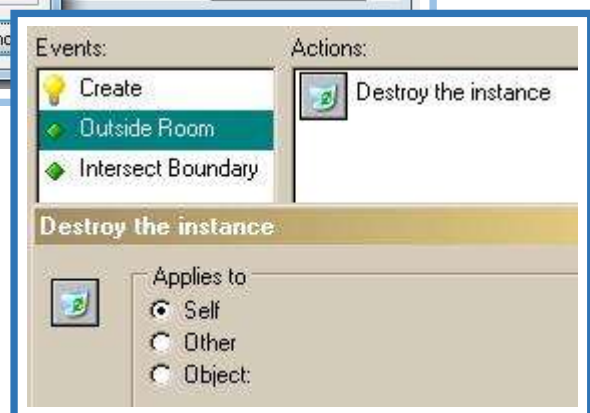
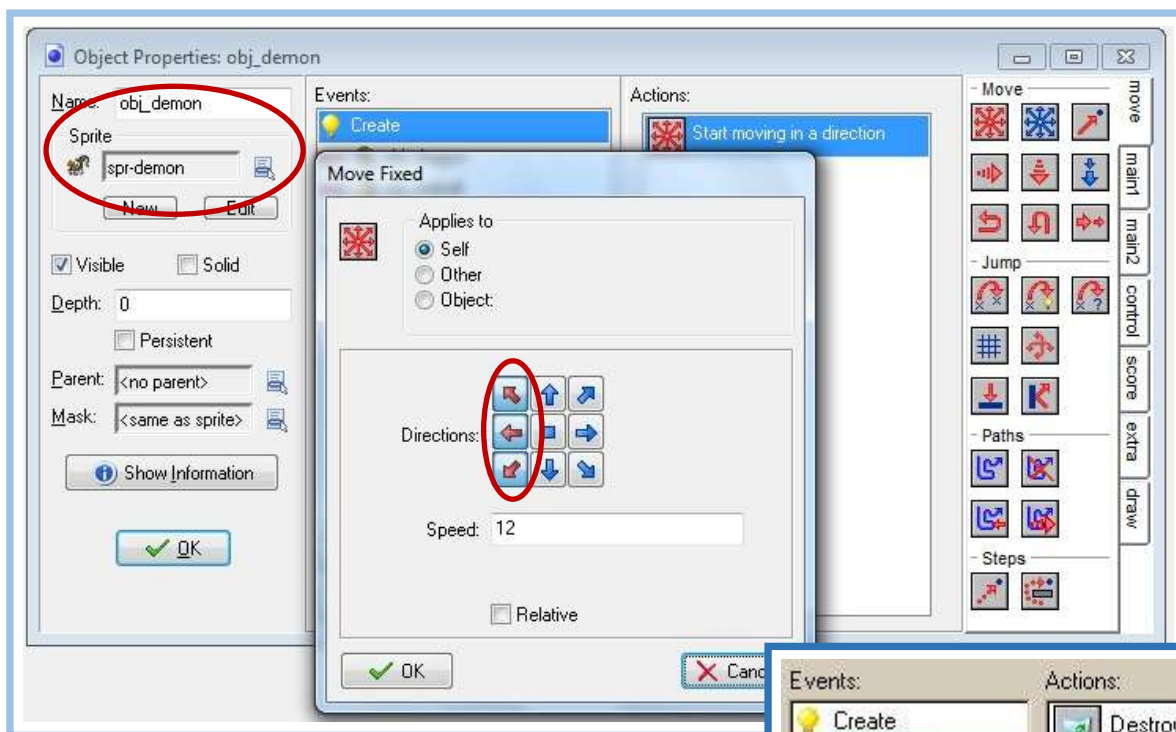
STAGE 4 HYPOTHESIS STATEMENTS: Now it is time to predict the behaviors of the dragon object properties applied to the asset.

- In a couple of sentences, explain the behaviors that you expect to see from the dragon object and the fireball object.
- Explain why the fireball is created at $x = 100$, $y = 10$ and what it means to be *Relative*.

STAGE 5:

Create the Demon Objects

- 1- Create **obj_demon** and assign it **spr_demon** for its Sprite.
- 2- Begin with a **Create Event** and set its action to **Start moving in a direction**. Click on the left-up, left, and left-down arrows and Set speed to **12**.
- 3- Add an **Other Event** with **Outside room** selected from the list and choose the action for **Destroy the instance** to **Self**.
- 4- Add an **Other Event** with **Intersect boundary Event** selected from the list and choose the action for **Reversal vertical direction** to **Self**.



SAVE YOUR AWESOME GAME!

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STAGE 5 HYPOTHESIS STATEMENTS: Now it is time to predict the behaviors of the demon object properties applied to the asset.

- In a couple of sentences, explain the behaviors that you expect to see from the demon object and what the demon will do in reference to other objects and properties you have already assigned.

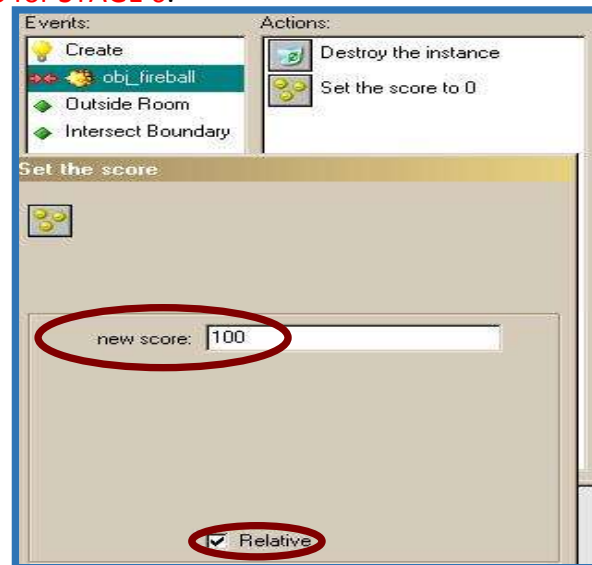
STAGE 6:

Collision Properties

- 1- Keep the **obj_demon** open (or reopen if it was closed). Add a **Collision Event** and select **obj_fireball** from the choices. NOTE: What behavior will this cause in the objects? Be sure to write about this in **STAGE 6 HYPOTHESIS**.
- 2- For this Collision Event, the first Action is to **Destroy instance** and for **Applies to** select **Self**.
- 3- Add an Action for this collision event that will create a score. From the Score tab on the right, drag and drop a **Set Score** action. For “new score” enter **100** as illustrated. NOTE: What does relative mean in this property? Be sure to write about this in **HYPOTHESIS for STAGE 6**.
- 4- Click **OK**.

Dragons and Demons have relatives!

Relative is a concept that you will see in numerous actions. When scoring, points can be added from zero or from an existing score. Which option are you programming in this case? **Relative** has already been used establish locations of objects and instances. Look for this term again in future tutorials. A deeper explanation can be found in Concepts Explained



Add a **Collision Event** and select **obj_dragon**.

- 5- Add an Action from the **Score** tab called **Show the high score**. Leave all options as they are and click **OK**. NOTE: What do you think will cause an abrupt end to your game? You should write about this in your **HYPOTHESIS for STAGE 6**.
- 6- From the **Main 2** tab drag and drop **Restart the game**.

Gamers love to know how well they do compared to other gamers!



HAVE YOU SAVED LATELY? TRY IT THIS TIME BY HOLDING ctrl AND PRESSING THE “c” KEY.

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STAGE 6 HYPOTHESIS STATEMENTS: Now it is time to predict the behaviors of the demon object properties applied to the asset.

- In a couple of sentences, explain the behaviors that you expect to see from the demon object and the resulting events and actions as it interacts with the other objects.
- How does the scoring work and how are points earned?

Now it's time to test your game, so go ahead and click on the green triangle (►) on the menu bar to run the game normally. Don't forget f4!

DOES THE ACTION THAT YOU SEE AND THE CONTROL OF THE OBJECTS MEET YOUR HYPOTHESIS STATEMENTS?

Pressing the space bar should shoot balls of fire from the dragon's mouth because of the relative coordinates programmed into the object properties. If they come out of a silly or nonsensical body part, your coordinates are incorrect. Only one should be fired each time you press the space bar. If you have fireballs shooting correctly, that's great. If NOT, then go through the properties for each sprite and object to find where you went wrong. Later, they will be used to fend off demons and score points for the player controlling the dragon.

DO THIS ON YOUR TUTORIAL GUIDE

STAGE 4, 5, 6 TEST & EVALUATION: A game program must be tested regularly to see if your hypothesis is valid or invalid.

Answer the following in a couple of sentences.

- In the last three stages you created three new hypothesis statements. Which ones are valid and which ones are not?
- Explain why they were valid or invalid based on the behaviors of the objects?
- For the invalid, what needed to be fixed and how did you fix it?

SAVE YOUR GAME FILE AGAIN BEFORE CLOSING