

## Lesson 5.5: Popping Balloons - Part 2

### Objectives

In this lesson, students will:

- ❖ Experience building a program by experimenting and iterating
- ❖ Gain more familiarity with costumes, influencing the speed of sprite movement and duplicating sprites in Scratch.

### Agenda

- |                            |         |
|----------------------------|---------|
| 1. Review the Game         | 10 mins |
| 2. Popping the Balloons    | 20 mins |
| 3. Adding More Balloons    | 15 mins |
| 4. Wrap up and Reflections | 5 mins  |

### Preparation

- Continuation of the same balloon game project

### Resources & Links

- Link to solution project:  
<https://scratch.mit.edu/projects/277804939/>

## 1. Review the Game



In the last lesson students coded the balloon sprite to make the balloons fly up and the pencil sprite to have a starting position and to make it move right and left.

**Prompt** students: What is missing to complete the basic game ?

If necessary, demonstrate the game again or simply review what students did last lesson and explain what is missing.

## 1. Popping the Balloons

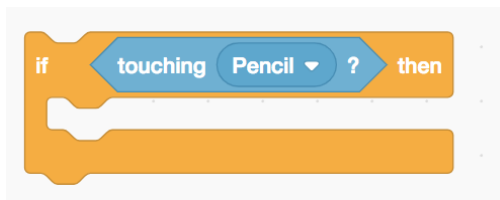


**Demonstrate and explain** code sections of the game as an interactive class activity:

When the pencil touches the balloon, the balloon should disappear. The way we are going to code that is by moving the balloon immediately to its starting position just like we do when the balloon reaches the top of the stage. It would be nice to make a popping sound whenever we pop a balloon.

The first instruction is to test if the balloon touched the pencil.

**Prompt** students for the instruction needed to do that with hints if necessary.



Next, we want to add the popping sound, to do that we need to go into the **Sound** category. And finally, if the balloon touches the pencil, the balloon immediately goes back to its starting position.



Prompt students for the placement of this code in the program.

Answer: In the balloon script, following the **if statement** to test for the position of the balloon.

The solution code for the balloon sprite:



```

when green flag clicked
  forever loop
    change y by 5
    if y position > 180 then
      go to x: pick random -200 to 200 y: -180
    if touching Pencil ? then
      start sound pop
      go to x: pick random -200 to 200 y: -180
  
```

Review the full script for the balloon sprite with students and then demonstrate the game with the balloon popping code in place.

### Students Turn:



Students code the instructions to pop the balloon. You may choose to display the code or not, depending on how students are demonstrating understanding of the pencil movement.

## 2. Adding More Balloons



**Prompt** students to call out some things we could add to the game to make it more interesting or fun.

In this next activity, students will add another balloon with a different color and experiment with changing the speed at which the balloon flies and the speed of the pencil movement.

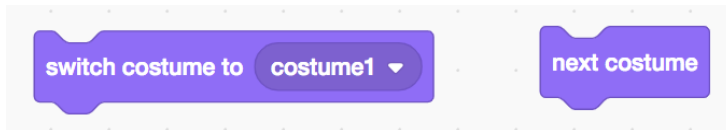
In the next lesson we are going to add the score to keep track of how many balloons the player pops.

**Prompt** students as to what determines the speed of the balloon flying up. The instruction **change y by 5** is what determines the speed of the balloon. The higher the number the faster the balloon will move.

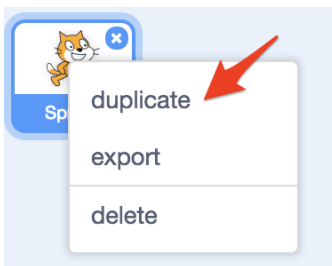
**Show** students the different costumes a balloon has. There are instructions to set and change the costume of a sprite.

**Prompt** students for where these might be.

Show the **switch** and **next costume** commands in the **Looks** category.



Show students how to duplicate an existing sprite in preparation for the next student activity;



Right click on a sprite, then click on duplicate.


### Student Activity:



Tell students to code a second balloon sprite of a different color that moves at a different speed than the first one.

## 4. Wrap Up and Reflections

During the next lesson, we will add our final touches to the game.

 <b>Reflection Points:</b>	
<ul style="list-style-type: none"> <li>• How do we set the initial costume of a sprite?</li> <li>• How do we change the speed of the balloon so it goes slower?</li> <li>• What was most fun about coding the balloon game?</li> </ul>	