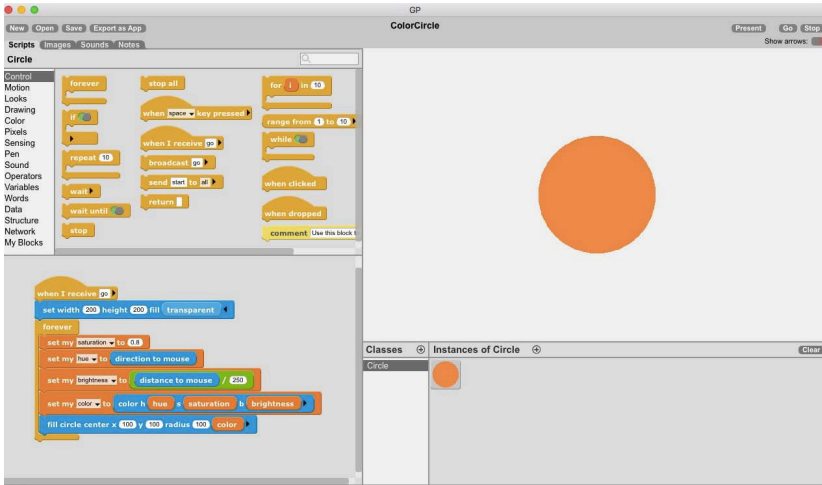# GP

Make a Color Circle

WHAT TO DO

In this project, you will create a customizable color circle. As you move the mouse around, the circle's color will change. In this project, you'll learn about the hue, saturation, and brightness of colors. By adjusting the values of these three elements, you'll see how the colors change in the circle. This interactive color circle can be used to choose a brush color for a paint program.

HOW TO DO IT

To get started, place a **set width and height block** in your script and fill with the **transparent** block.

Next, you will need to create variables for hue, saturation, brightness, and color. Click on the variables category and choose **add an instance variable** to create these four variables.

Drag the variable block - **set my n to 0** - into the scripts area. First, set the hue to the direction of the mouse. Set the saturation to 0.8. Set the brightness to be the distance to mouse divided by 250. Finally, add the color variable and set it to be the values of the three variables you just created.

Use the **fill circle center** block to set the color. Lastly, add a **forever** block around the script.
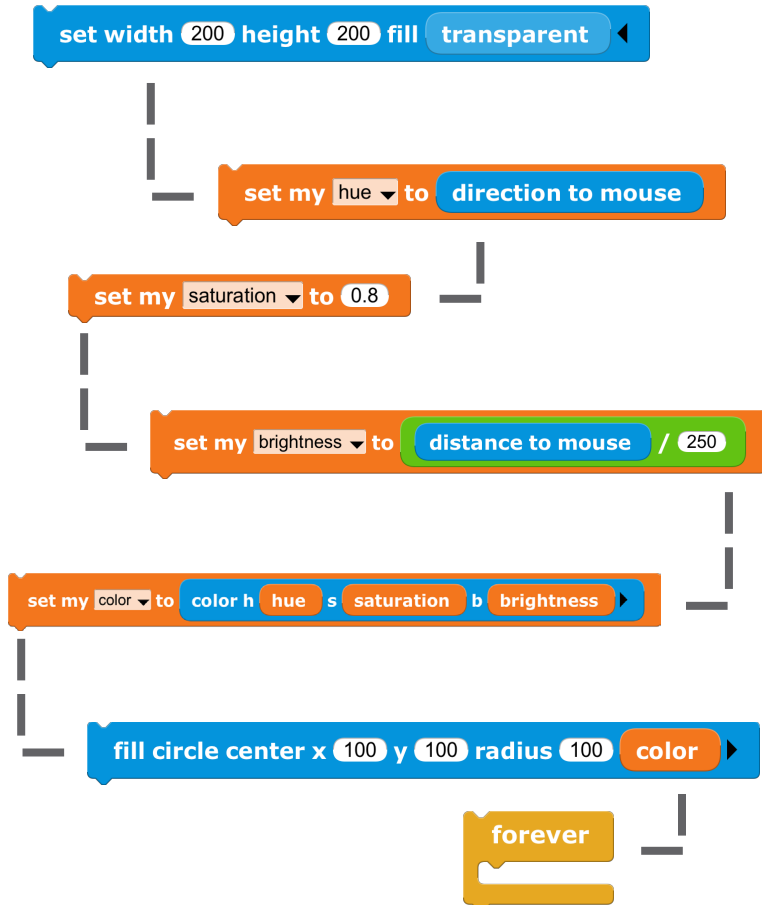
▶ **Hue, Saturation, and Brightness**
One way to describe a color is with hue, saturation and brightness. Hue (0 to 360) refers to the actual color. Brightness (0.0 to 1.0) refers to how light or dark the color is; that is, how much light it emits or reflects. Saturation (0.0 to 1.0) is how "pure" the color is compared to a gray of the same brightness. High saturations yield strong, intense colors while low saturations yield pastels or tinted grays.
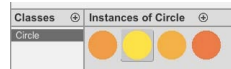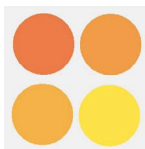
GP
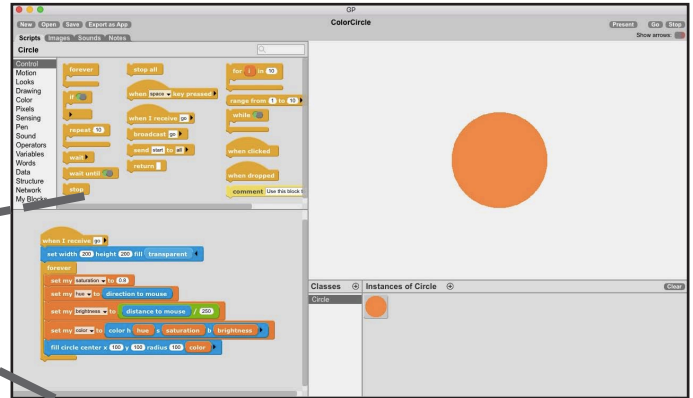
▶ *RGB Values*
Curious about the RGB value of the colors you select? Click on the variables category and move the mouse around the stage to change the color. As you do so, you see the value of the **my color** block change - this is the RGB value!

my color

(color 39 12 62)

Remix 1

How might you make multiple circles?
Why might they have different color values?

Remix 2

How might you make the saturation interactive?

set my saturation to 0.5

when down arrow key pressed
change my saturation by -0.1

when up arrow key pressed
change my saturation by 0.1

Hint: Take the saturation block out of the forever loop.

What's Next?
Combine Simple Paint & Color Circle

Create a new class by clicking the ⊕ sign next to the **Classes** pane. Go to the Paint project starter and right click on the script to *copy all scripts to clipboard.* Navigate back to the Color Circle project starter and *paste all scripts* into your new class.

Create a shared variable and call it *shared color*. When you click the space bar, set the *shared color* to be the value of my color. Then add it to *set pen color* block in the new class you created.

when space key pressed
set shared brush color to my color

set pen color shared brush color