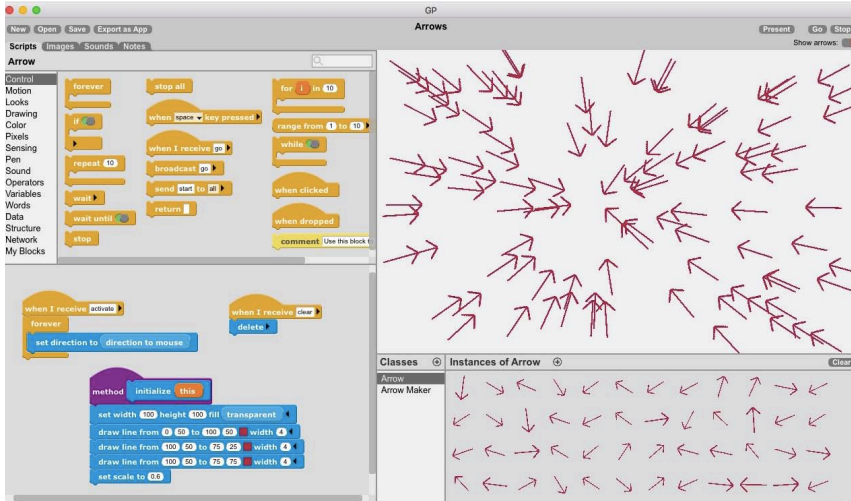# GP

Initialization 1 | Arrows

WHAT TO DO

In this project, you will create 100 arrows that follow the mouse as you move it around the stage. This project features cloning! It also introduces an important concept in object-oriented programming known as *initialization*.

HOW TO DO IT

Click the ⊕ sign in the **Classes** pane to add a class. For this project, you will need two classes - *Arrow* and *Arrow Maker*.

In the *Arrow Maker* class, first hide the instance on the stage then add a *broadcast clear* message. Use the *repeat* and *add an instance* blocks to create 100 instances of the arrow on the stage. Lastly for this class, broadcast *activate*.
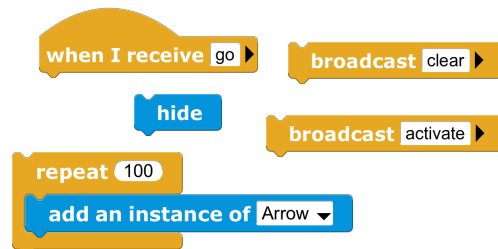
In the *Arrow* class, we need three separate scripts. First, we want to tell the arrows to *delete* when they receive the *clear* message. Next, we want the arrows to follow the mouse when they receive the *activate* message.

Finally, we want to animate the arrows. Use the *set width and height, draw line*, and *set scale* blocks to create the arrows. This code should be placed under an *initialize* block, which can be created in the *My Blocks* category by selecting *make an initialize method*.
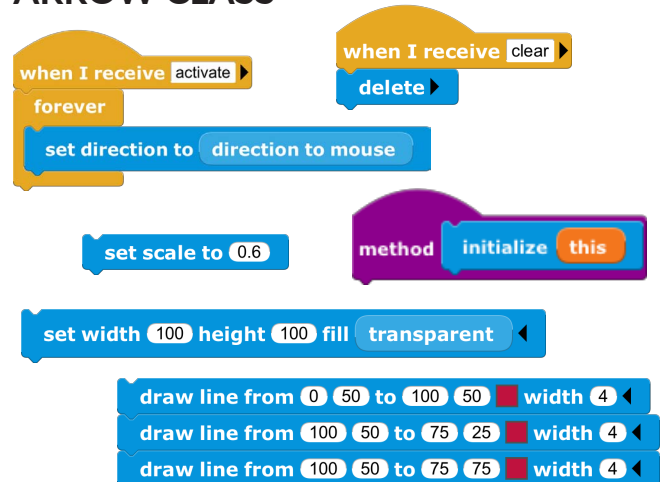
> **HINT**
> Below are all the blocks you need! Read the directions to put them in the correct order.
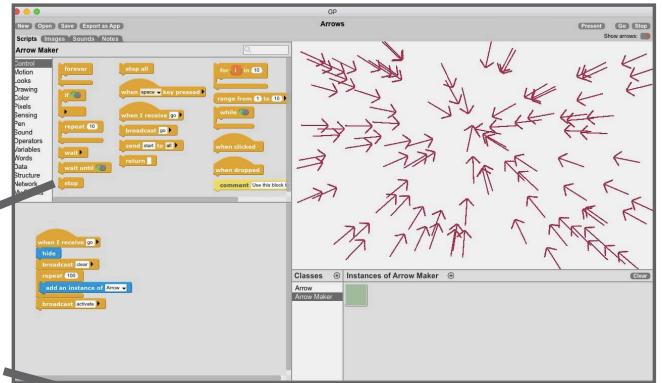
ARROW MAKER CLASS

when I receive go
broadcast clear
hide
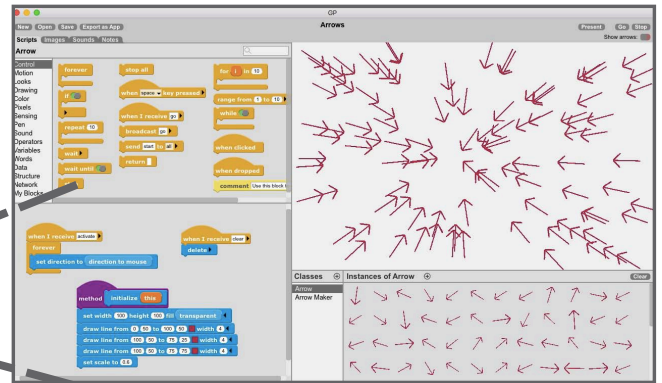broadcast activate
repeat 100
add an instance of Arrow

ARROW CLASS

when I receive activate
forever
set direction to direction to mouse

when I receive clear
delete

set scale to 0.6

method initialize this

set width 100 height 100 fill transparent

draw line from 0 50 to 100 50 width 4
draw line from 100 50 to 75 25 width 4
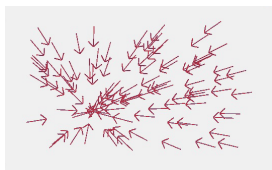draw line from 100 50 to 75 75 width 4

ARROW MAKER CLASS

ARROW CLASS

▶ In this project, we draw the costumes of newly-created instances of the *Arrow Maker* class by adding an initialize method to the *Arrow* class. If a class has an *initialize* method, that method runs when a new instance is created. Since the initialize method is run before the instance is added to the stage, we use a *when I receive* block to start animations.

Remix 1

How might you make the arrows follow the mouse *and* move?

Remix 2

How might you make the arrows move in a circle?

What's Next?
Check out **Initialization 2: Bubble Trail**!