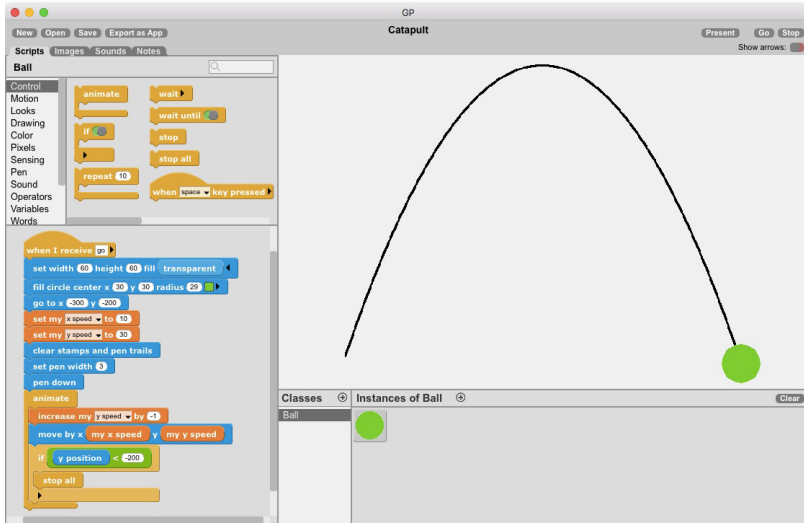


GP

Build a Catapult



WHAT TO DO

In this project, you will create a catapult that will launch a ball from one side of the stage to another. A curved line will follow the path of the ball. This project uses two variables - the speed of x and y - to control the speed of the ball. Check out the remixes to see how you could turn this project into a game!

HOW TO DO IT

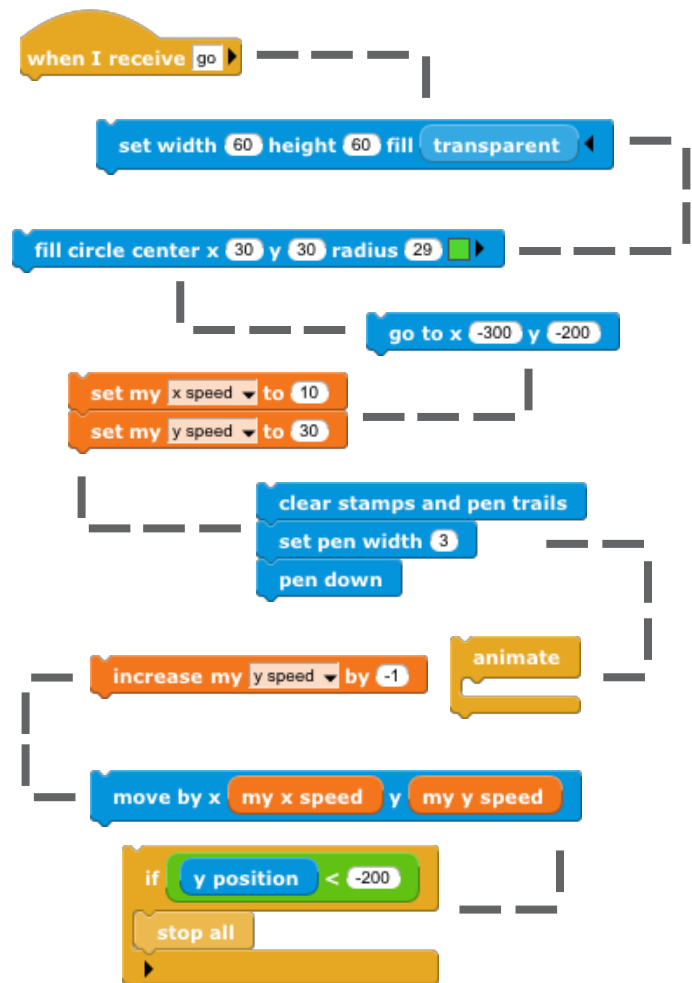
To get started, create the ball using the **set width and height** as well as the **fill circle center** blocks. Add a **go to x y** block so that the ball starts at the same place every time you click go.

Next, go to the variables category and create two instance variables - **x speed** and **y speed**. Drag each of these into the scripts area and set the speeds to 10 and 30 respectively.

The next step is to get the pen set up to follow the ball and leave a line on the path the ball travels. Use the **clear stamps and pen trails** block to have a fresh line created every time you click go. Set the **pen width** to the thickness you'd like and add **pen down**.

Now, let's make the ball move. Use the animate block to create a forever loop. Add the **increase my y speed** block and set to -1. Next, add the **move by x and y block** and input the **my x speed** and **my y speed** blocks from the variables category.

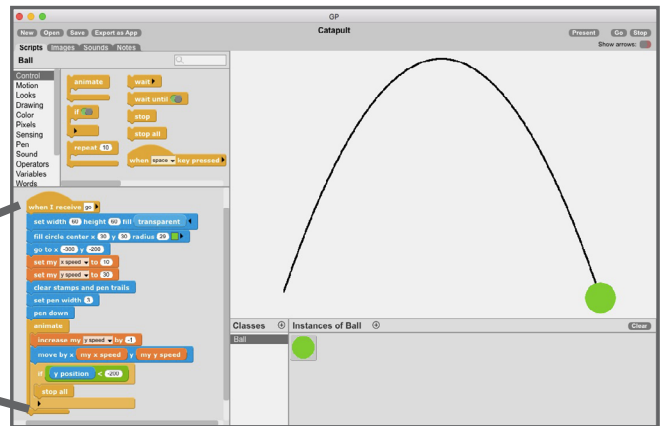
Lastly, add an **if** block and instruct it so that if the **y position** is less than 200, **stop all** scripts.



continued →



```
when I receive go
  set width 60 height 60 fill transparent
  fill circle center x 30 y 30 radius 29
  go to x -300 y -200
  set my x speed to 10
  set my y speed to 30
  clear stamps and pen trails
  set pen width 3
  pen down
  animate
  increase my y speed by -1
  move by x my x speed y my y speed
  if y position < -200
    stop all
```



HINT
Turn off **Show arrows:** ☐ to follow the ball without the arrows following its path.

Remix 1

How might you make the ball move at different speeds?

```
increase my y speed by ?
```

Remix 2

How might you change the arch of the ball to make it taller or shorter?

```
set my x speed to ??
set my y speed to ??
```

What's Next?

How might you make this project into a game?

