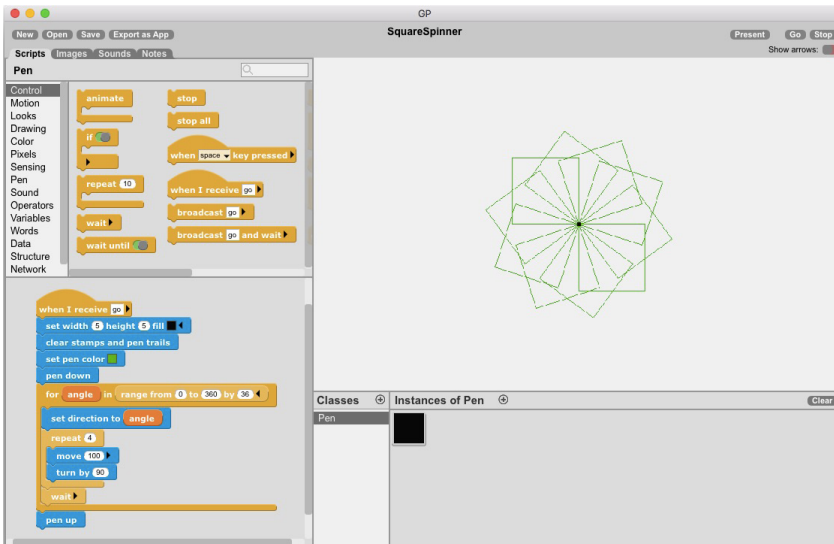


Make a Square Spinner

WHAT TO DO

In this project, you will use the pen to draw multiple squares to create a pattern. By instructing the pen to draw different shapes at different angles, you will have the power to create different patterns and designs on the stage. Happy spinning!



HOW TO DO IT

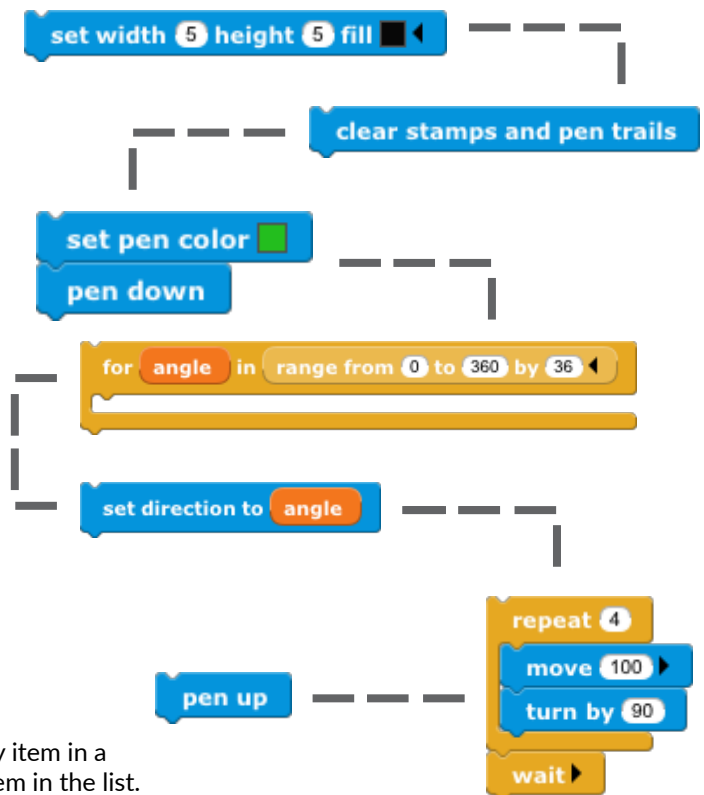
In order to know where the pen is drawing, let's make it appear as a small dot on the stage. Use the **set width and height** block. Since we want the pen to draw a new pattern each time we click go, add **clear stamps and pen trails**. Next, set the pen color to anything you'd like. Add the **pen down** block to get the pen ready to draw.

Add a **for loop** from the control category and click the **i** block to rename it **angle**. Next, add the range block so it reads with the numbers: 0, 360, and 36. Still inside the **for loop**, add the **set direction** block and fill with the newly named **angle** block.

To make the square, place together blocks that make the pen move by 100 pixels, turn by 90 degrees, and repeat 4 times. Add a **wait** block so that you can see the squares as they are drawn. Lastly, add the **pen up** block to complete the script.

HINT

This project uses a **for loop**. A for loop runs its commands for every item in a list. On each cycle, the variable of the for loop is set to the next item in the list. The **range** block makes a list of numbers starting with the first number, ending with the second number, and increasing by the given amount each step. In this project, the range block generates angles every 36 degrees between 0 and 360: 0, 36, 72, 108, etc. A square is drawn for each of those angles.

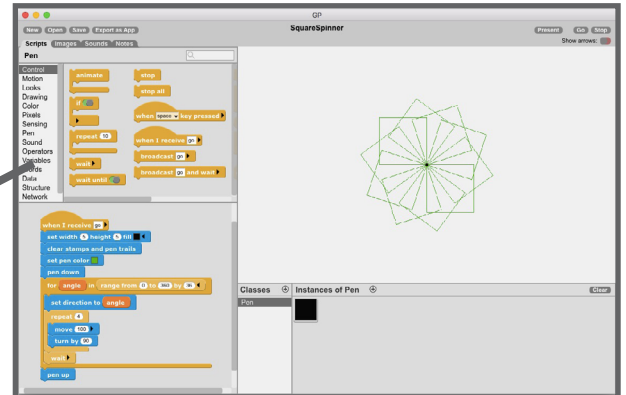


continued →

GP

```

when I receive go
  set width 5 height 5 fill
  clear stamps and pen trails
  set pen color
  pen down
  for angle in range from 0 to 360 by 36
    set direction to angle
    repeat 4
      move 100
      turn by 90
    wait
  pen up
  
```

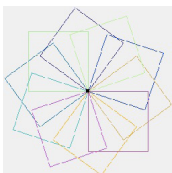


HINT

Remove the *wait* block to see your patterns print faster.

Remix 1

How might you make each square a different color?

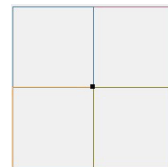


```

set pen color random color
  
```

Remix 2

How might you make a pattern with exactly 4 squares? 12 squares?



```

range from 0 to 360 by 90
  
```

What's Next?

Customize Your Spinner

- From the **My Blocks** category, make a new shared block and name it **squares**. Click the triangle to expand and rename the orange block **how many**.

```

define squares how many
  
```

- Take the script from **pen down** to **pen up** and move it to under the new block. From the operators category, choose the **divide** block so that your script reads: range from 0 to 360 by 360 divided by **how many**.

```

range from 0 to 360 by 360 / how many
  
```

- The completed script will include the **pen down**, **for loop**, and the **pen up** blocks.

```

define squares how many
  pen down
  for angle in range from 0 to 360 by 360 / how many
    set pen color random color
    set direction to angle
    repeat 4
      move 100
      turn by 90
    wait
  pen up
  
```

- Drag the newly created **squares** block from the **My Block** category and place it at the end of the original script. Play with the number to experiment with different patterns!

```

squares random 5 to 20
  
```