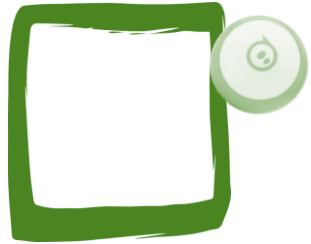


Spheros & Shapes Group Activities



We won't complete all of the following problems.

Your group will only complete one or two.

Start with Alligator. After you are done, we will discuss which one you should do next.

Problem
1



A - Alligator



B - Bat

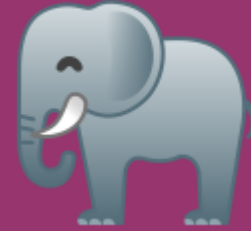


C - Cat

Problem
2



D - Dog



E - Elephant



F - Fish

Problem
3



G - Giraffe



H - Horse



I - Iguana

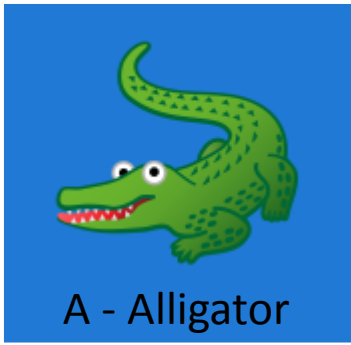
TIPS



J - Jaguar

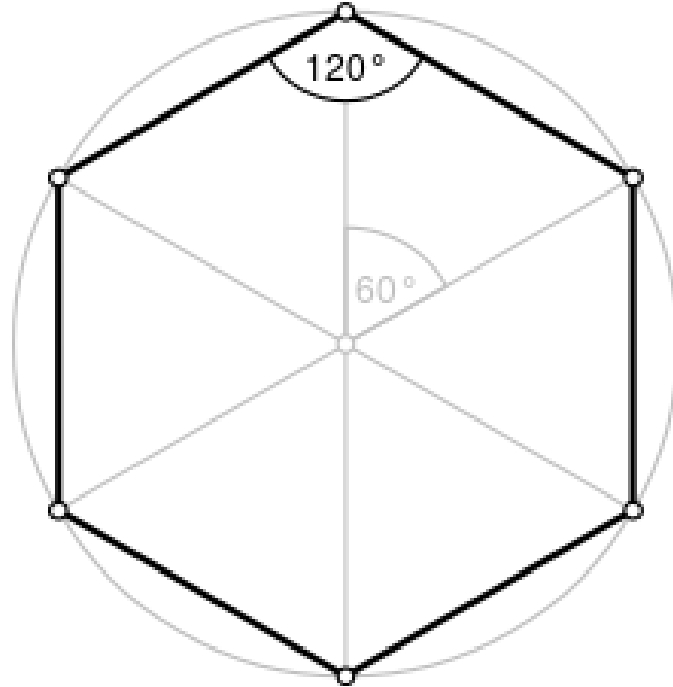
Practice

More
Practice

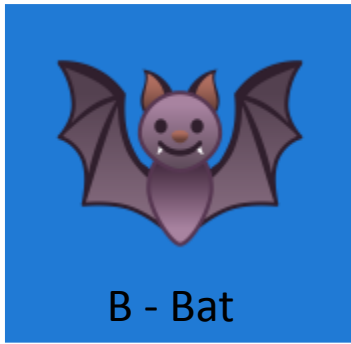


Adapt this code to make a hexagon instead.

Test it on your Sphero.



```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
    main LED [pink]
    delay for 1s
    main LED [light green]
```

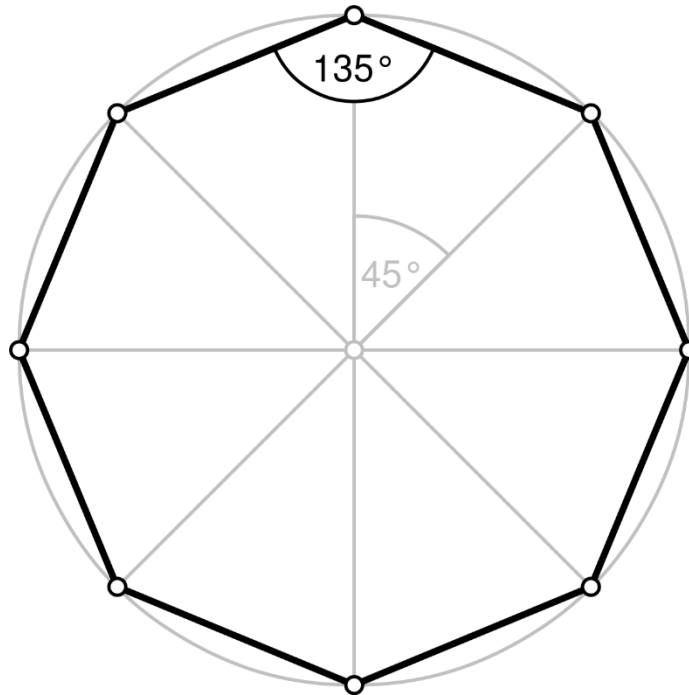


B - Bat

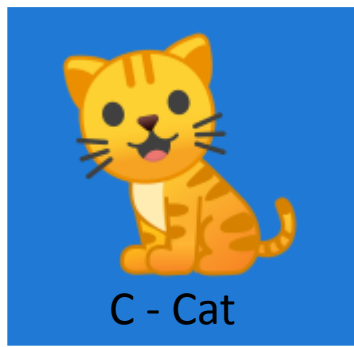


Adapt this code to make an octagon instead.

Test it on your Sphero.

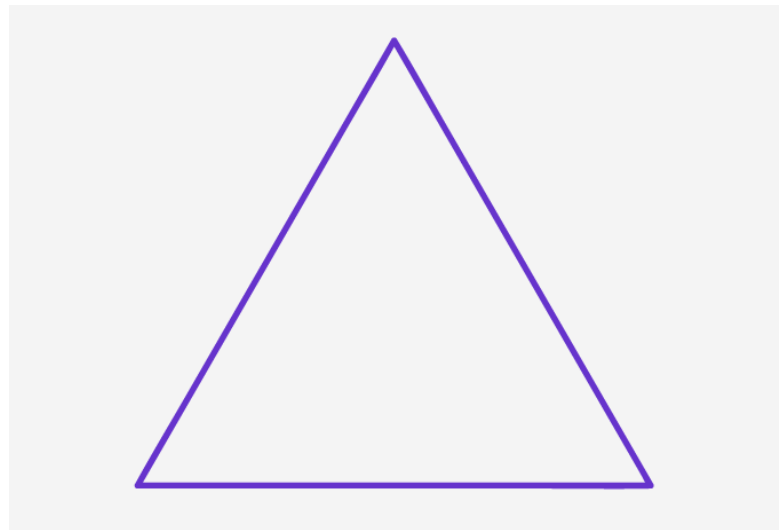


```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
    main LED [pink]
    delay for 1s
    main LED [light green]
```

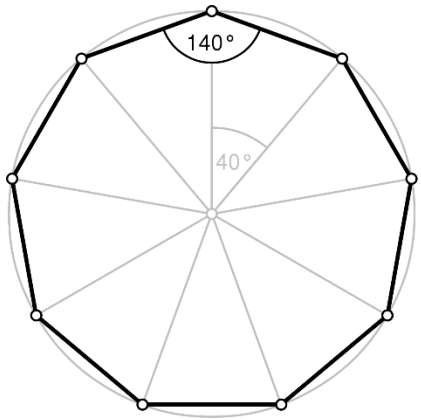
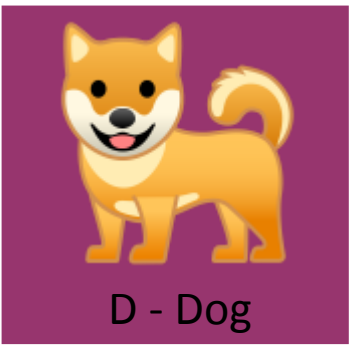


Adapt this code to make an equilateral triangle instead.

Test it on your Sphero.



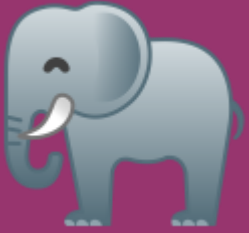
```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
    main LED on
    delay for 1s
    main LED off
```



This program uses variables to make a nonogon (9 sided). If done correctly, once you have finished it, you will only need to change line 1 to be able to make any shape you would like.

Test it on your Sphero.

```
on start program
  set sides to 9
  set angle to 0
  set angleChange to [ ] / [ ]
  loop [ ] times
    roll angle at 30 speed for 1s
    set angle to angle + [ ]
    play button digital sound and wait
  main LED [ ]
  delay for 1s
  main LED [ ]
  ↑
```



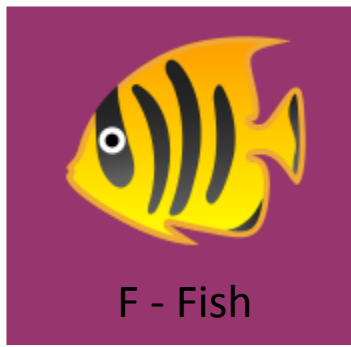
E - Elephant



Adapt this code to draw 3 squares.

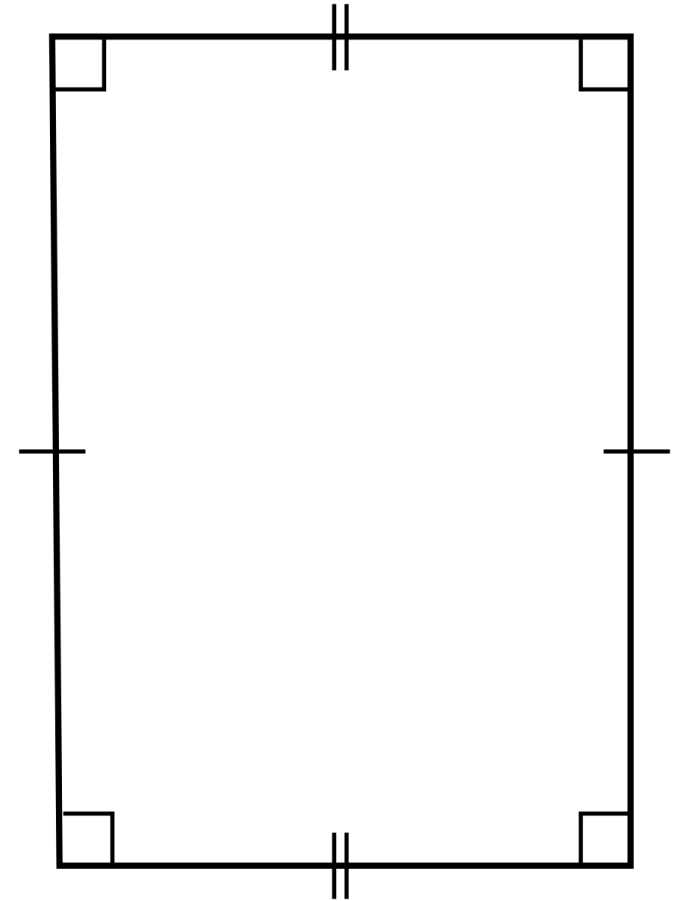
Test it on your Sphero.

```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
    main LED [red]
    delay for 1s
    main LED [green]
```



Write code that uses a loop to make a rectangle. There should be two different side lengths.

Test it on your Sphero.





G - Giraffe



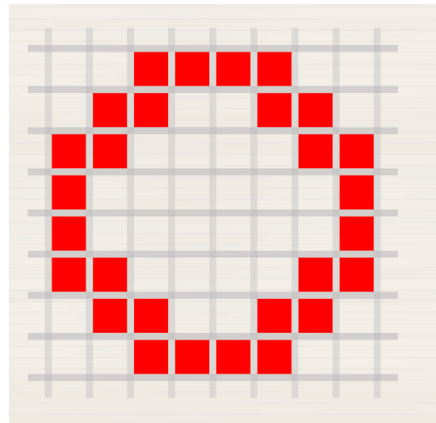
Write code that adds a variable to increase or decrease the size of the square.

Test it on your Sphero.

```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
  main LED
  delay for 1s
  main LED
```




Adapt this code to draw something that looks like a circle (humans are easily fooled). Take out the sounds and lights.

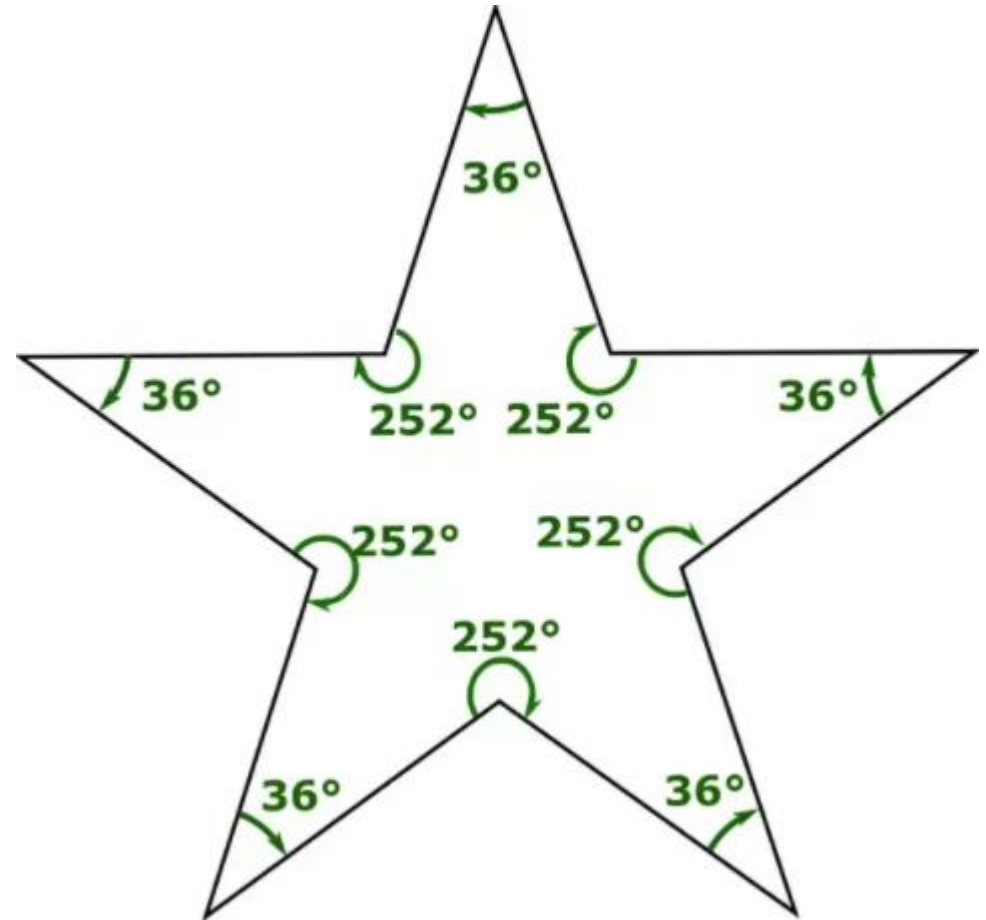


```
on start program
  set angle to 0
  loop 4 times
    roll angle at 30 speed for 1s
    set angle to angle + 90
    play button digital sound and wait
  main LED
  delay for 1s
  main LED
```



Write a program that would use a loop to draw a star.

Test it on your Sphero.



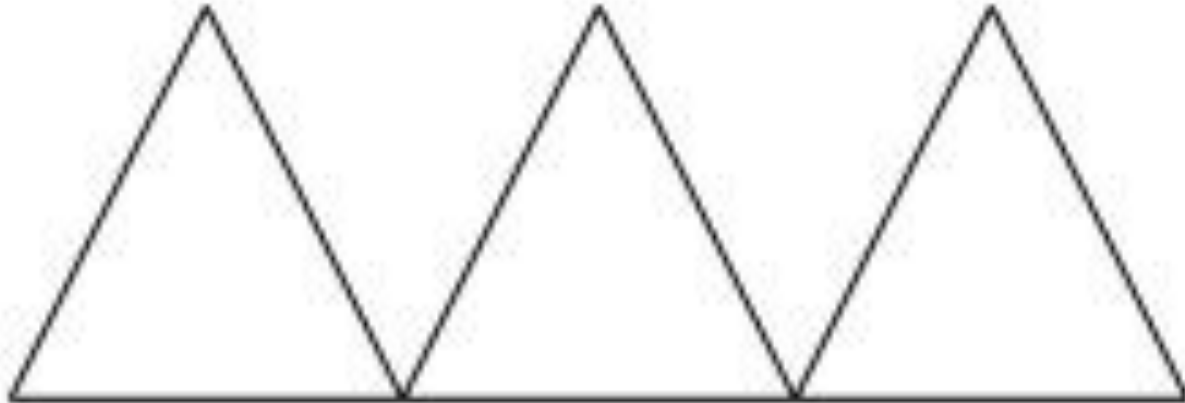


TIPS

J - Jaguar

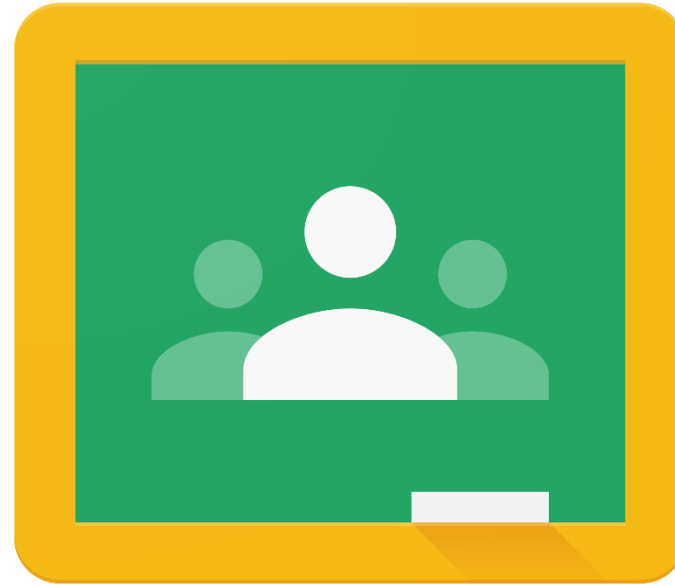


Write a program
that draws three
triangles in a row.



```
on start program
  set angle to 0
  loop 3 times
    roll angle at 30 speed for 1s
    set angle to angle + 60
    play button digital sound and wait
    main LED
    delay for 1s
    main LED
```

When you are done,
there are check-your-
understanding
questions on Google
Classroom.



Google Classroom