

# SCRATCH Shapes

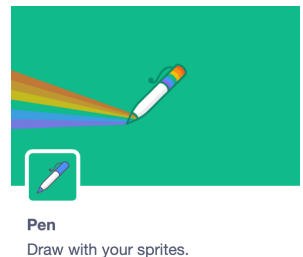
Register/login at <https://scratch.mit.edu>  
Remember to write down your password.

*The **Pen extension** lets a sprite leave a trail when it moves.*

- 1) Click on the **Add Extension** button at the bottom left of the screen.
- 2) Select the **Pen** extension. New **Pen** code blocks appear below the other code blocks.
- 3) Choose a sprite that looks good when rotated. LadyBug1 is a good example.
- 4) Add a **when green flag clicked** code block, to run the program.
- 5) From the new pen code blocks add **pen down** to start drawing. Add **move 100 steps** to draw a line.

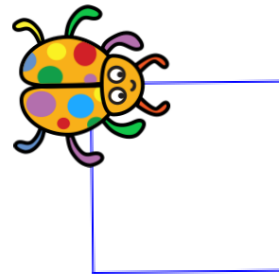
*To draw a shape like a square, turn the sprite at the corners.*

- 6) Add **turn 90 degrees**, then **move 100 steps** again.



7) Copy (right click the block, then **duplicate**) the turns and moves to draw a square.

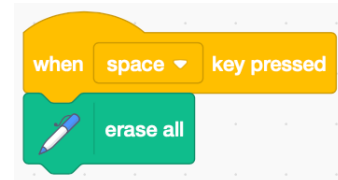
8) You can erase the drawing with the **erase all** block. You can trigger this **when the space key is pressed**.



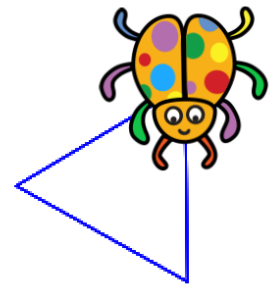
*There's a lot of duplication in the square drawing code. Replace this with a loop that repeats four times.*

9) Add a **repeat** block and change the loop count to 4 for each of the four sides. Place **move** and **turn** inside the loop.

*Can you draw a triangle? It has three sides so you must change the loop count.*



*The turn angle is 360 divided by the number of sides. Work out  $360 / 3$  (the '/' is division).*



10) Change the loop count and the turn angle to draw a triangle. What about shapes with *more* than 4 sides?

*The external angles of any polygon add up to 360 degrees.*

Remember to **Save** your code with a good name.

**File > Save now**