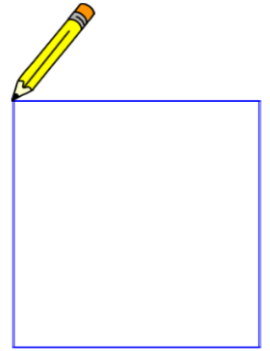


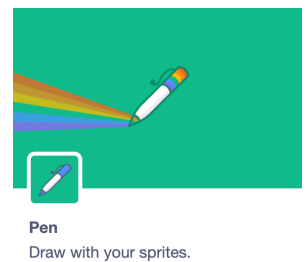
SCRATCH Shapes

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 new sprite that looks like a **pencil**.
- 4) On the **costumes** tab, select the whole pencil with the select arrow. Move the pencil so the tip is at the centre of the sprite (marked by a cross).




First draw a square.

- 5) On the **code** tab, add the code (right) that starts drawing by putting the **pen down**. A square has 4 sides so the code **repeats** 4 **moves**. Each move is followed by a 90° (degree) **turn** at the corners.
- 6) You can clear the drawing with the **erase all** block **when the space key is pressed**.



Now draw a triangle.

- 7) Make a Variable for the number of **sides** (called sides) and **set sides to 3**.
- 8) Change **repeat 4** to **repeat sides** so it works for any number of sides.
- 9) Change the **turn** to 



These shapes are called **polygons**.

Their **external** angles add up to 360° (degrees).

The **turn** is 360 **divided** by the number of sides.

What about shapes with more sides? (change **sides**)

The more sides there are, the more it looks like a **circle**!

Adjust the number of steps to keep the pencil on-screen.

- 10) Change the number of **move steps** to 

The 200 is the width (diameter) of the polygon and this calculates the total number of steps (circumference) which can be divided by the number of sides.

A **digon** has only 2 sides – what does it look like?

Try changing the colour of the line.

Try changing the line thickness.

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

File > Save now

