

# SCRATCH with Ready-Steady-Code

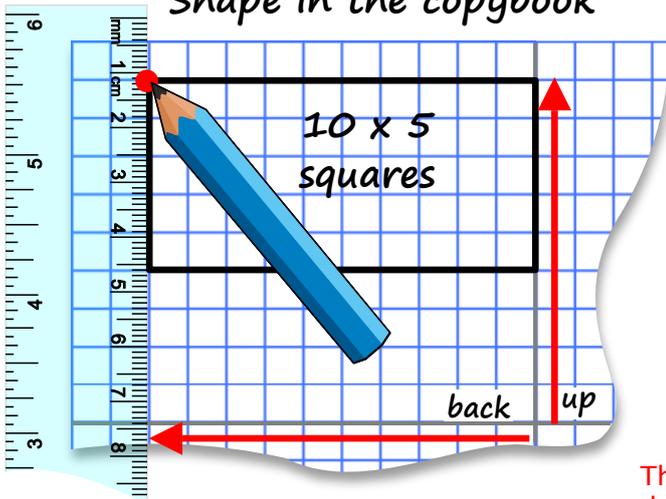
Transition from known to unknown: from pen to code, from copybook to Scratch

View the RTE video at <https://readysteadycode.ie>

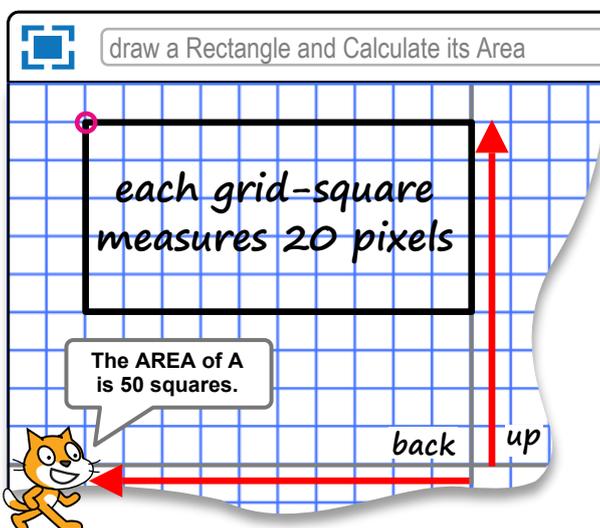


Drawing a real shape to see its actual area and perimeter enables the child to think computationally and transfer concepts to the virtual world. Moving from concrete to abstract, the child can code many rectangles in Scratch using a variable in slider mode.

Shape in the copybook



Same Shape in Same location on the Scratch stage



Probably the three tools that children use most when working in school are a pen, a copybook and their brain. e.g. The children are learning Area and Perimeter of a Rectangle. They have an assignment to **draw a 10 x 5 rectangle**. They can draw it in their copybooks. They can also draw it with Scratch code.

The pictured pupil is *mapping the Scratch stage* onto her copybook. She draws a large landscape rectangle 24 squares horizontally by 18 vertically. She draws a vertical y-axis down the centre and a horizontal x-axis. Each copybook grid-square is equivalent to 20 x 20 pixels in Scratch. The central axes cross at **x:0 y:0** both on paper and in Scratch.

She can draw shapes in a precise position on the page. She can anchor the top left corner of the rectangle as the starting point in her copybook and set the same relative start position on the Scratch stage. She will draw a rectangle 10 squares in **width** by 5 squares in **height**. She can replicate a similar rectangle in Scratch with easy code.

For online examples, check out these links

**Rectangle:**

<https://scratch.mit.edu/projects/42156328>

**Circle:**

<https://scratch.mit.edu/projects/42156398>

**the Protractor:**

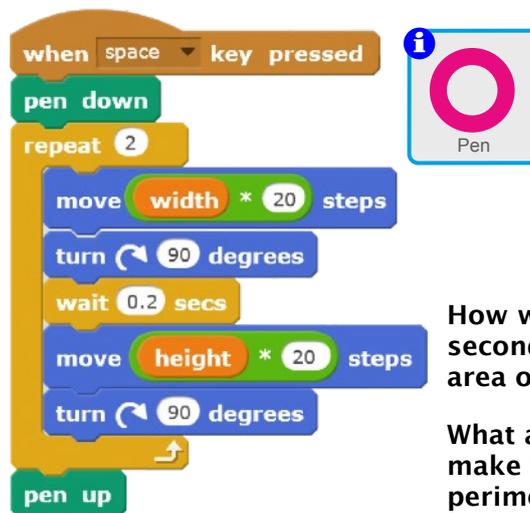
<https://scratch.mit.edu/projects/62825976>

For secondary Maths examples check out the links to the free resources at:

<https://readysteadycode.ie>

e.g. Pie Graphs, Pythagoras, Simultaneous Equations, Quadratic Equations, Trigonometry etc.

This script is an algorithm in code that makes the sprite draw a 10 x 5 rectangle when the SPACE key is pressed.



You need two variables in slider mode.



How would you code a second sprite to tell the area of the rectangle?

What algorithm will make the cat report the perimeter?

Two other algorithms (short scripts of code) are required: (script 1) to initiate and position the pen's starting location (script 2) to programme the second sprite (the cat) to calculate and report the area and perimeter of the rectangle.