

**Learning objective: we are learning to apply our knowledge of the properties of shapes.**

**Context**

Turtlestitch is a free, easy-to-use platform found at [www.turtlestitch.org](http://www.turtlestitch.org). Using block-based code similar to Scratch and Snap!, it is designed for writing programs to control embroidery machines, but you don't need an embroidery machine in school to get a lot of fun learning from it. It is particularly useful for cross-curricular learning in computing and maths. Using WMG's [free maths resources](#), year 5 and 6 children can apply their understanding in topics such as measure, geometry, division, and position and direction to create patterns onscreen.

**Preparation**

This lesson is designed to be taught after the missing angles lesson. In the plans for that lesson, you will find some introductory videos for teachers.

Familiarise yourself with the maths sheets: [questions](#) and [answers](#). The children can access these online. For a printable version, [click here](#) and set your printer to print landscape on both sides and flip on short edge. Select pages 5 and 6 for printing.

Timing	Teaching & learning	Resources
10-15 minutes	<p><b>Maths re-cap</b> Introduce or re-cap knowledge of properties of shapes, vocabulary and symbols.</p> <p>For example, regular, symmetrical, parallel, isosceles and equilateral.</p>	Whiteboard
15-20 minutes	<p><b>Making shapes with Turtlestitch</b> Using the question sheet, children work through the <a href="#">questions</a> to create different shapes on Turtlestitch. Tell them to leave the code for each shape on the screen, to use later.</p>	<p><a href="#">Questions</a></p> <p><a href="#">Answers</a></p>
15 minutes	<p><b>Changing the size of your shape</b> Re-cap how to make a block (as learnt in the missing angles lesson).</p> <p>Play this <a href="#">video</a> on changing the size of the shape, or watch it beforehand and teach the method yourself.</p> <p>The children apply this to their shape blocks and experiment with creating patterns.</p>	<p><a href="#">Making your own block video</a></p> <p><a href="#">Changing the size of your shape video</a></p>
5 minutes	<p><b>Showcase</b> The children show each other their patterns.</p>	