

**Learning objective: we are learning to find the highest common factor of two numbers.**

**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 and properties of shapes lessons. There is also an optional year 6 lesson using the highest common factor of two numbers. In the plans for the missing angles 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 11 and 12 for printing.

Timing	Teaching & learning	Resources
5-10 minutes	<p><b>Maths re-cap</b> Re-cap finding the highest common factor of two numbers.</p> <p>Using the method on the first side of the <a href="#">question</a> sheet, demonstrate how highest common factors can be used to create a shape.</p>	<p>Whiteboard</p> <p><a href="#">Questions</a></p>
20-30 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>
10-20 minutes	<p><b>Exploration</b> Can the children find other numbers this works well with? What makes some numbers difficult to use?</p>	
5 minutes	<p><b>Showcase</b> The children show each other their patterns.</p>	