CATAPULT High Value Manufacturing

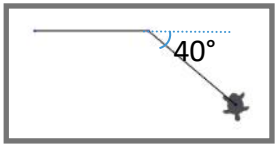
WMG THE UNIVERSITY OF WARWICK

Turtlestitch Maths

Using the highest common factor

Now we're going to learn how to work out the number of repetitions needed to complete some shapes.

In this example, the turtle turns 40° to start making a shape.

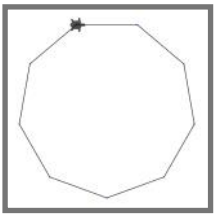


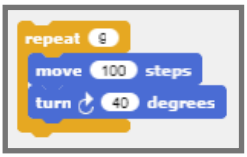
How many repetitions will close the shape?

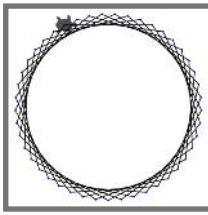
1. Work out the highest common factor of the turning angle and 360. *The highest common factor of 40 and 360 is 40.*

2. Divide 360 by the highest common factor. *360 ÷ 40 = 9*

3. That answer is the number of repetitions needed to complete the shape. *Repeat 9 times.*







HCF of 56 and 360 is 8. 360 ÷ 8 = 45

The HCF of 144 and 360 is 72.
360 ÷ 72 = 5
So I need to loop it 5 times.

Use the method shown overleaf to complete these shapes.

What is the highest common factor of 44 and 360?
Divide 360 by that number.
Put the answer in the repeat loop.