Name_____

U3-1.1c Challenge up: Choose your shape

Using a definite loop allows you to write a program to get Edison to drive a shape using only a few blocks of code. You can control how many times the program repeats the code commands inside the loop by changing the input of the repeat block.

What do you notice about the number of sides and angles a shape has compared with the input you need in your definite loop? Can you use this pattern to help you write a program to drive any shape?

What to do

Choose a shape which has sides and angles to drive using your Edison robot.

Make a workspace to test your program by either drawing your shape on paper or marking it out on the floor or a desk with coloured tape.

Hint!

You might want to choose a regular shape for this challenge. A regular shape means a shape where all the sides are equal.

Write a program for Edison using EdScratch so that your robot can drive your shape. Your program needs to use a definite loop control structure, so be sure to include a repeat block. Your program should be as efficient as possible, so try to use as few blocks as you can while still completing the task.

Download your program to your robot and test it out using your workspace.

1. What value would you need to have in the input parameter in the repeat block to get Edison to drive a regular (meaning that all sides are equal) 12-sided shape?

   Sample student answer: 12

2. There is a pattern between the number of sides and angles a shape has and the number of times you need a loop to repeat in order to drive that shape. Describe how you used this pattern to help you determine the input parameter you needed in the repeat block to get Edison to drive your shape.

   Sample student answer: My shape was an octagon, which has eight sides and angles. You always need to have the input parameter be equal to the number of repeating sides and angles that the shape has, so I knew that I would need an 8 as the repeat block's input parameter.