## Introduction

This Programming Turtle Logo and Scratch unit will teach your class to create and debug algorithms. Following on from the earlier Year 2 unit on Preparing for Turtle Logo, the children use the basic commands in Logo to move and draw using the turtle on screen, and then further develop algorithms using the "repeat" command. These skills are then developed by teaching children to create algorithms in Scratch using a selection of blocks.

Health & Safety

Children should be encouraged to have good posture and sit up to the computer.
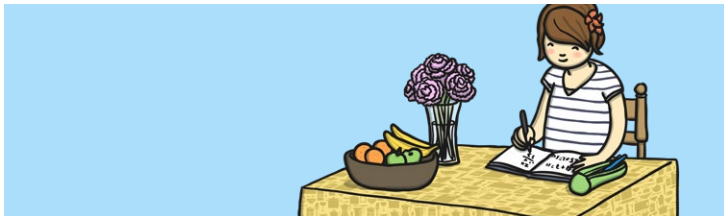
Home Learning

Task 1 Turtle Logo: Polygons and Patterns: Children use Turtle logo to create different algorithms for different regular polygons and then use them to create a pattern.

Task 2 Scratch: Polygons and Patterns: Children use Scratch to create different algorithms for different regular polygons and then use them to create a pattern.

Assessment Statements

By the end of this unit...

...all children should be able to:
- Create and debug algorithms to draw regular polygons using the repeat command/ block (Turtle Logo and Scratch)

...most children will be able to:
- Draw shapes with spaces between using penup and pendown (Turtle Logo)
- Change and alter the pen settings (Scratch)

...some children will be able to:
- Draw regular polygons using Logo to calculate the angle (Turtle Logo)
- Create and debug algorithms to draw patterns by repeating regular polygons (Scratch)

Lesson Breakdown

	Resources
1. Backwards Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Using Turtle Logo. • I can create and debug an algorithm using the move, rotate and repeat commands.	• Desktop Computer or Laptop • Turtle Logo application (installed or online) • Whiteboards and pens or books, pens and pencils for recording
2. Pen Up and Pen Down See above. Using Turtle Logo. • I can create and debug algorithms using penup and pendown.	• Desktop Computer or Laptop • Turtle Logo application (installed or online) • Whiteboards and pens or books, pens and pencils for recording
3. Regular Polygons See above. Using Turtle Logo. • I can create and debug algorithms that draw regular polygons.	• Desktop Computer or Laptop • Turtle Logo application (installed or online) • Whiteboards and pens or books, pens and pencils for recording
4. Drawing See above. Using Scratch. • To create and debug algorithms that draw shapes.	• Desktop Computer or Laptop Scratch application (installed or online) • Whiteboards and pens or books, pens and pencils for recording
5. Regular Polygons in Scratch See above. Using Scratch. • To create and debug algorithms that draw regular polygons.	• Desktop Computer or Laptop Scratch application (installed or online)
6. Pens See above. Using Scratch • To create and debug algorithms to draw patterns.	• Desktop Computer or Laptop Scratch application (installed or online) • Whiteboards and pens or books, pens and pencils for recording