# Colour

Colours are usually given the following numbered code, although some versions may use colour names.

| | | | |
|---|---|---|---|
| 0: black | 1: blue | 2: green | 3: cyan |
| 4: red | 5:magenta | 6: yellow | 7: white |
| 8: brown | 9: tan | 10: green | 11: aqua |
| 12: salmon | 13: purple | 14: orange | 15: gray |

Versions of Turtle Logo use different commands:

| Turtle Academy uses: | |
|---|---|
| setpc | Sets the colour of the pen. |
| setcolor | Changes the colour for the pen, fill and background. |

| Logo Interpreter uses: | |
|---|---|
| setpencolor or setpc | Sets the colour of the pen. |
| setcolor | Changes the colour for the pen, fill and background. |

| MSWLogo uses: | |
|---|---|
| setpencolour or setpc | Sets the colour of the pen (for draw and label). |
| setfloodcolour or setfc | Sets the fill colour (for lesson 4). |
| setscreencolour | Sets the background colour (not specifically taught). |

Each command is used with the corresponding number:

| | |
|---|---|
| setcolor 4 | Sets the colour to red. |
| setpc 2 | Sets the pen / label colour to green. |

If you use a different version of Logo, you will need to find out which commands to use (and possibly edit the **Lesson Presentation** accordingly).

Note the pen size can be changed with the setpensize command, although the variable is written differently.

setpensize 3 or setpensize [3 3]

Turtle Academy / Logo Interpreter or MSW Logo.

# **Programming Turtle Logo:** Colour

**Note:** There are 2 slightly different versions of the activity sheets in this unit, depending whether procedures are written in one line, such as online versions such as Turtle Logo/Logo Interpreter, or multiple lines like MSWLogo.

| **Aim:** | **Success Criteria:** | **Resources:** |
|---|---|---|
| Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.<br><br>Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.<br><br>Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.<br><br>In the context of using Turtle Logo to create and debug an algorithm with different colours.<br><br>I can create and debug an algorithm with different colours. | I can write commands in the correct order.<br><br>I can write a procedure.<br><br>I can correct any mistakes.<br><br>I can set the pen colour and pen size. | **Lesson Pack**<br><br>Desktop computer/laptop<br><br>Turtle Logo application: installed/online<br><br>Whiteboards and pens or books and pens for recording. |
| | **Key/New Words:**<br>Algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable, calculation, procedure, setpc, setpensize, random. | **Preparation:**<br>**Colour Activity Sheet** - as required |

**Prior Learning:** Children will have created and debugged an algorithm to make a procedure and used coordinates to draw shapes in lessons 1 and 2.

## Learning Sequence

| | | |
|---|---|---|
|  | **Colours:** Show children that you can set the pencolour using setpc and a variable (setpc 3). Ask the children to find the different colours. |  |
|  | **The Colours Are...** Show the standard variables for the different colours. Also show how to set the pen width using setpensize with a variable. (Usually setpensize 3 or setpensize [3 3].) |  |
|  | **Patterns/A Pattern Using Squares:** Demonstrate different patterns using procedures and colour. |  |
|  | **Make Your Own Patterns:** Ask the children to make different patterns using procedures and colours. Use the **Lesson Presentation** for suggestions. Children should screenshot their work and save in a word processing document. Children use the differentiated **Colour Activity Sheets.**<br><br>  Children use support to make the patterns.<br><br>  Children use the guide to make the patterns, encouraging them to use the repeat command.<br><br>  Children make the patterns and are introduced to the random command. |  |
|  | **Share:** Children share the algorithms for their pattern with a partner. Partners test and debug the algorithms if necessary. |  |
|  | **Random Colour:** Demonstrate how to set the pen colour randomly and use this in a pattern. Children then use the random pen colour to create a pattern. |  |

**Task***it*

***Random*it:** Children explore making random coloured different shapes.

***Challenge*it:** Use the **Challenge Cards** for extension activities.