Fill

The fill command enables enclosed shapes to be filled. The colour of the fill is set by the setcolor or setfloodcolour (setfc) command.

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

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

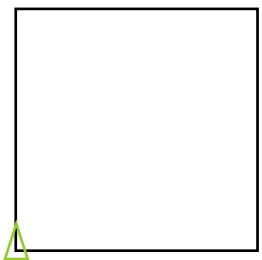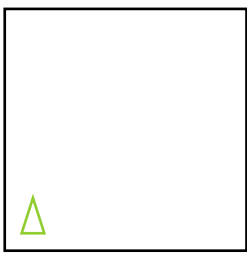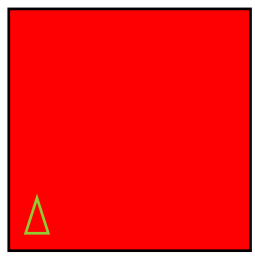| Logo Interpreter uses:	
setpencolor or setpc	Sets the colour of the pen.
setcolor	Changes the colour for the pen, fill and background.

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).

The fill command will fill the enclosed shape within which the turtle resides.

Usually, the penup (pu) and pendown (pd) commands are used either side of moving the turtle into the shape.

For example:

Draw a square	Move the turtle into the square	Set the colour Fill the square
repeat 4[fd 100 rt 90]	pu rt 45 fd 20 lt 45	setcolor 4 (or setfc 4) fill

Programming Turtle Logo: Fill

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.	I can write commands in the correct order.	**Lesson Pack**
	I can correct any mistakes.	Desktop computer / laptop
	I can fill an area with colour.	Turtle Logo application: installed / online
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.		Whiteboards and pens or books and pens for recording.
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	**Key/New Words:**	**Preparation:**
In the context of using Turtle Logo to create and debug an algorithm to fill areas with colour.	Algorithm, instructions, commands, forward (fd), left (lt), right (rt), move, turn, clear screen (cs), variable, calculation, procedure, setpc, random, fill, setcolor, setfloodcolour.	**Fill Activity Sheet** - as required
I can create and debug an algorithm to fill areas with colour.		

Prior Learning:	Children will have created and debugged an algorithm to make a procedure, used coordinates to draw shapes and used colour in lessons 1 to 3.

Learning Sequence

	Can You Fill a Square? Give the children a few minutes to draw a square and see if they can find out how to fill it with a colour. *(The aim here is for children to find the answer by looking in the help files.)*	
	Fill: Demonstrate how to fill shapes with colour using the fill command and how to change the fill colour. *(The example commands work in MSWLogo. Commands may vary in other applications.)* Children draw a filled square, then try other colours and shapes.	
	Fill Procedures: Children copy the procedure for a blue-filled square, then try to vary the procedures. They go on to try procedures for other colours using the differentiated **Fill Activity Sheets.**	
	★ Children use support when completing the activities. ★★ Children use the guide to complete the activities. ★★★ Children complete the activities and write a procedure for any filled regular polygon.	
	Other Procedures: Demonstrate how to alter the original procedure to solve some of the tasks the children have tried.	
	In Pairs: Children test and debug their procedures and patterns. They choose one idea from their partner to try out themselves. Ask a few children to share what they have learnt from their partner.	
	Try It Yourself: Children try out the idea from their partner and then create a pattern similar to that on **Lesson Presentation.**	
	Troubleshooting: Children debug the procedure. What needs to be added to make it work?	

Taskit	
Fillit:	Children explore making filled patterns and drawings.
Challengeit:	Use the **Challenge Cards** for extension activities.