

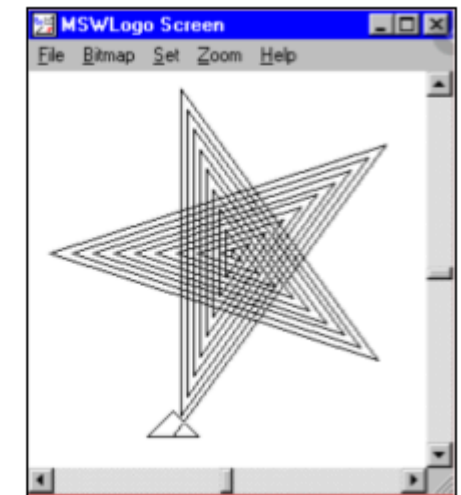
Lesson Se



Unit Introduction:

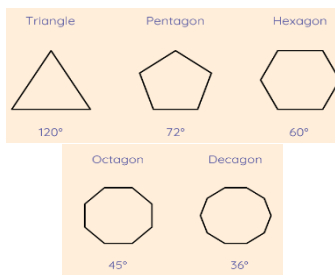
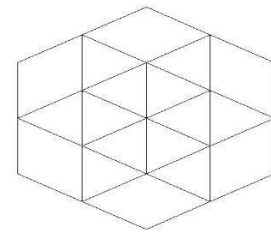
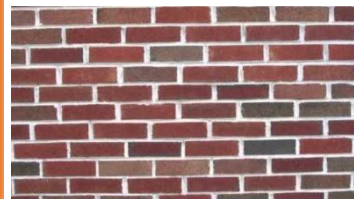
Repetition in Shapes

- Programming is when we make a set of instructions for computers to follow.
- Logo is a text-based program that we can use in order to create shapes and patterns.
- We use algorithms (a set of instructions to perform a task) which we can plan, model and test, in order to create accurate and imaginative shapes and patterns.



Lesson Sequence:

- Patterns: Patterns are things that repeat in a logical way. In everyday life, patterns are everywhere!
- Patterns in Logo: Instead of typing in the code to create each individual shape, we can save time by repeating a sequence of instructions. We use the 'repeat' function.
- Repeat: Type the command 'repeat' — this repeats commands a set number of times. The number following repeat is the number of times to repeat the code, and the code to be repeated is in square brackets, e.g. repeat 4 [FD 100 LT 90]
- The above code will repeat FD 100 LT 90 four times.
- Creating Shapes and Loops: To make shapes, we need to know the angles of corners of different shapes (see right). Using the repeat function with shapes can help us to make spirals.



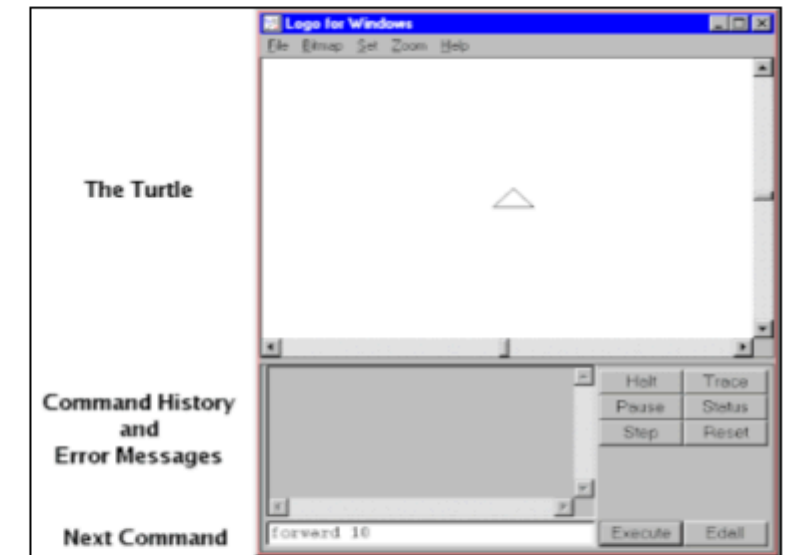
FMS Logo:

What is FMS Logo? Logo is a text-based programming language, where we can type commands which are then drawn on the screen.

- Logo helps us to learn how to use programming language, whilst also being creative and using problem-solving skills.

Basic Commands:

- FD: Forwards. Always followed by a space and the number of steps, e.g. FD 50
- BK: Backwards. As above, e.g. BK 50
- LT: Left turn. Always followed by a space and then the degrees to turn, e.g. LT 90
- RT: Right turn. As above, e.g. RT 90
- CS: Clears any pen marks on your screen and gets the turtle back to the centre.
- PU: Stops turtle from leaving a pen trail.
- PD: Makes turtle leave a pen trail again.



Sequencing and algorithms:

- A sequence is a pattern or process in which one thing follows another.
- We design algorithms (sets of instructions for performing a task) to help us program the sequence that we require to achieve our desired outcomes.
- Programming is the process of keying in the code recognized by the computer (using your algorithm).

Debugging:

- Sequence errors: An instruction in the sequence is wrong or in the wrong place.
- Keying errors: Typing in the wrong code.
- Logical errors: Mistakes in plan/thinking.

Key Vocabulary

commands code snippet pattern repetition repeat value trace
decompose procedure