

YEAR 7 FLOWOL CONTROL ALGORITHMS (SPRING 2)

Vocabulary

- **Algorithm** a set of rules for solving a problem
- **Flowchart** sequences of instructions set within symbols that lead to a real-life simulation
- **Simulation** A model that produces an output, either visual or physical, as it runs
- **Sequencing** creating a set of instructions to complete a task
- **Loop** repeat an action until a certain condition is met
- **Subroutine** a set of instructions designed to perform a frequently used operation within a program
- **Variable** a memory location to store data for use in decision making
- **Sensor** an object whose purpose is to detect events or changes in its environment, and then provide a corresponding output
- **Programming** the process of writing computer software

IMPORTANT FACTS

Flowol is a control system meaning it takes over the job of a human, this could be because it is too dangerous, too boring or too time consuming. There are some basic control systems and some more complex.

It also uses algorithms to create instructions for the control system to follow it has four shapes which mean different things.

Flowol also uses sub-routines to add 'side jobs' i.e flash yellow lights in a traffic light also repeats actions as many times as you like so you don't have to write out a set of instructions many times.

Sequence of learning.






Draw and interpret a flowchart with the correct symbols.

Create and edit a flowchart to control a simulated device

Create a flowchart to program one set of traffic lights.

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems;

Create a flowchart program containing a subroutine.

Symbol	Name	Function
	Start/end	An oval represents a start or end point.
	Arrows	A line is a connector that shows relationships between the representative shapes.
	Input/Output	A parallelogram represents input or output.
	Process	A rectangle represents a process.
	Decision	A diamond indicates a decision.

Final outcome:

During this term the students will start use flowol to:

Create a program to control a simple sequence. Modify symbols in a flowchart for effect. Create flowcharts for multiple inputs and outputs. Use decisions and subroutines. Program inputs and outputs.

By the end of the unit they should be able to Solve a given problem independently with a flowchart solution, organized into multiple subroutines.

Key Skills

Understand how to draw a flowchart using the correct symbols
Know how to insert symbols in sequence to create a working flowchart.

Know how to control multiple outputs at the same time.

Know how to program different outputs based on the status of an input.

Understand how to use multiple subroutines within a program.