

What should I already know?

- Introducing block coding, Objects and actions, Events (Click event, sound output), Executing a program, Design view: Planning.
- Algorithms, Logical decision making, Sequencing instructions, Following instructions.
- Coding a 'turtle', Creating programs using sequencing and repeat, Visual use of the Logo programming language, Program logic and structure.
- Algorithms, Collision, detection, Timers, Object types, Buttons, Debugging, Logical decision processing, Forward planning to achieve a solution.
- Use of 2Dos, Saving, opening and editing work, Sharing work, Copying and pasting, Mouse, keyboard and device skill.

What will I know by the end of the unit?

What is a flowchart is and how flowcharts are used in computer programming?

- You can use a flowchart to create a computer program. You can create a computer program that uses click events and timers.

What are the different types of timers and which timer do I need?

- You can create a program that uses a timer-after command. You can create a program that uses a timer-every command and understand there can be different ways to solve a problem.

How do I use the repeat command?

- Find out how the turtle object moves. You can use the repeat command with an object and you can create a computer program that includes use of the repeat command.

What is the importance of nesting?

- You can create computer programs using prior knowledge. You can run, test and debug their programs and can consider nesting when debugging their programs.

How can I design and create an interactive scene?

- You can use the attributes (properties) table to set the attributes of objects. You can plan their scene and code before they create their program and to confidently make several different things happen in a program.

Key Vocabulary

- **Action** The way that objects change when programmed to do so. For example, move or change a property.
- **Algorithm** A precise step by step set of instructions used to solve a problem or achieve an objective.
- **Tools** 2Dos 2Chart Free code chimp
- **Alert** This is a type of output. It shows a pop-up of text on the screen.
- **Background** In 2Code the background is an image in the design that does not change.
- **Click Event** An event that is triggered when the user clicks on an object.
- **Bug** A problem in a computer program that stops it working the way it was designed.
- **Button** A type of object that responds to being clicked on.
- **Collision Detection Event** The event of two objects colliding.
- **Code** Writing the code for a computer program. **Command** A single instruction in a computer program.
- **Debug/Debugging** Fixing code that has errors so that the code will run the way it was designed to.
- **Event** An occurrence that causes a block of code to be run. The event could be the result of user action such as the user pressing a key (when Key) or clicking or swiping the screen (when Clicked, when Swiped). In 2Code, the event commands are used to create blocks of code that are run when events happen.
- **Flowchart** A diagram which represents an algorithm.
- **Implement** When a design is turned into a program using coding.
- **Input** Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.
- **Interval** In a timer, this is the length of time between the timer code running and the next time it runs e.g. every 1 second.
- **Nesting** When coding commands are put inside other commands. These commands only run when the outer command runs.
- **Properties** These determine the look and size of an object. Each object has properties such as the image, scale and position of the object.
- **Sequence** When a computer program runs commands in order.
- **Turtle Object** A type of object in 2Code that moves by coding angles of rotation and distance to move.
- **Object** Items in a program that can be given instructions to move or change in some way (action). In 2Code Gibbon, these include character, turtle, button, vehicle, animal, food, shape, number, input and label.
- **Repeat** This command can be used to make a block of commands run a set number of times or forever.
- **Test** To run the code and observe what happens to identify where there might be bugs in the program.
- **Predict** Use your understanding of a situation to say what will happen in the future or will be a consequence of something.
- **Run** Clicking the Play button to make the computer respond to the code.
- **Code**, this is the combination of the background and objects in a program.
- **Timer** Use this command to run a block of commands after a timed delay or at regular intervals.

Key Questions

- Why is it useful to use a flowchart to design a computer program?

Using a flowchart to design a computer program is helpful as you can see it in its simplest form as inputs and outputs. You can see where the program is going which will prevent mistakes when creating the code.

- What does repeat mean in computer programming?

Using the repeat command will make a block of commands run for a set number of timers or forever. These saves rewriting the code many times.

- What is the difference between 'timer after' and 'timer every'?

A 'timer after' means after a certain amount of seconds, the action will occur. 'Timer every' means that the action will re-occur every certain amount of seconds on a loop.

Purple Mash Resources

- Purple Mash – Tools, 2Dos, 2Chart and Free Code Chimp

