Over Hall Community School	Year: 2	Strand: Computing – Coding

What should I already know?

- Coding –Introducing block coding objects and actions Events (Click event, sound output) Executing a program Design view: Planning
- Lego Builders—Algorithms · Logical decision making · Sequencing instructions · Following instructions
- Maze Explorers—Maze Explorers · Coding a 'turtle' · Creating programs using sequencing and repeat · Visual use of the Logo programming language · Program logic and structure
- Questioning—Logical decision processing · Forward planning to achieve a solution
- Developing ideas about the concept of technology that we are surrounded by and its purpose

What will I know by the end of the unit?

How can I create a computer program using an algorithm?

- You can explain that an algorithm is a set of instructions. You can describe the algorithms they created. You can explain that for the computer to make something happen, it needs to follow clear instructions

How can I create a program using a given design?

- You can plan an algorithm that includes collision detection. You can create a program using collision detection. You read blocks of code and predict what will happen when it is run.

How do I design an algorithm that follows a timed sequence.?

- You can create a program that uses a timer-after command. You can explain what the timer-after command does in their program. You can predict what will happen in a program that includes a timer-after command.

How do I understand what different events do in code.?

- You can create a computer program that includes different object types. You can modify the attributes (properties) of an object. You can use different events in their program to make objects move

What are the function of buttons in a program.?

- You can create a computer program that includes a button object. You can explain what a button does in their program. You can modify the attributes (properties) of a button to fit their program design

How can I debug simple programs.?

- You can explain what debug (debugging) means. You can use a design document to start debugging a program. You can debug simple programs.

Key Vocabulary

- **Action** Types of commands, which are run on an object. They could be used to move an object or change a property.
- **Background** In 2Code the background is an image in the design that does not change.
- **Algorithm** A precise step by step set of instructions used to solve a problem or achieve an objective.
- **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.
- **Click events** An event that is triggered when the user clicks on an object.
- **Collision detection** In 2Code, this measures whether 2 objects have touched each other.
- **Command** A single instruction in 2Code.
- **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 or clicking the screen.
- **Execute** This is the proper word for when you run the code. We say, 'the program (or code) executes.
- **Implement** When a design is turned into a program using coding.
- **Instructions** Detailed information about how something should be done or operated.
- **Interaction** When objects perform actions in response to each other e.g. a frog turning into a monkey when it collides with a tree.
- **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.
- **Object** Items in a program that can be given instructions to move or change in some way (action).
- **Output** Information that comes out of the computer e.g. sound.
- **Properties** These determine the look and size of an object. Each object has properties such as the image, scale and position of the object.
- **Run** Clicking the Play button to make the computer respond to the code.

Key Questions

- **What is an algorithm? Why is it useful in coding?**

An algorithm is a step-by-step set of instructions used to solve a problem or achieve an objective. A clear algorithm can help you to create code that does what it is supposed to do.

- **Why is it important to know there are different object types?**

Different object types can do different actions. For example, in 2Code, an animal object can do actions such as up, down and stop. A turtle goes forward, backward, pen down and pen up.

- **If you are good at coding, you don't need to debug. Is this true?**

All coders need to debug to make sure that their program works correctly, and the code does what they intended. As you get better at coding, your programs will get more complex and debugging gets even more important.

Purple Mash Resources

- 2Dos, Free Code Chimp, Tools

Switch to code mode in 2Code. | A timer code block. | An object property. | Open, close or share a file. | Save your work. | Watch the instruction video. | Open design mode in 2Code.