Computing KS2 Knowledge Organiser - Year 3/4-Unit 3.1-Coding

What I should already know

- I know what an algorithm is.
- I know how to create a computer program using an algorithm.
- I know how to create a program using a given design.
- I know that algorithms follow a sequence.
- I know how to design an algorithm that follows a timed sequence.
- I understand that different objects have different properties.
- I understand what different events do in code.
- I understand the function of buttons in a program.

What I will learn (Sticky knowledge)

- I can understand what a flowchart is and how flowcharts are used in computer programming.
- I can understand that there are different types of timers and select the right type for purpose.
- I can understand how to use the repeat command.
- I can understand the importance of nesting.
- I can design and create an interactive scene.

What I will learn next

In Y4:

- I will begin to understand how IF/Else statements work.
- I will know what a variable in programming is.
- I will create a playable game.

In Y5:

- I will program a simulation.
- I will begin to understand what functions are in coding.

Key Vocabulary

Action	The way that objects change when programmed to do so. For example, move or change a property.	Implement	When a design is turned into a program using coding.
Alert	This is a type of output. It shows a pop-up of text on the screen.	Input	Information going into the computer
Algorithm	Step by step set of instructions used to solve a problem or achieve an objective.	Interval	In a timer, this is the length of time between the timer code running and the next time it runs.
Background	In 2Code the background is an image in the design that does not change.	Nesting	When coding commands are put inside other commands
Bug	A problem in a computer program that stops it working the way it was designed.	Object	Items in a program that can be given instructions to move or change in some way
Button	A type of object that responds to being clicked on.	Predict	Say what will happen in the future or will be a consequence of something.
Click Event	Triggered when the user clicks on an object.	Properties	The look and size of an object.
Code	Writing the code for a computer program.	Repeat	This command can be used to make a block of commands run a set number of times or forever.
Collision detection event	The event of two objects colliding.	Run	Clicking the Play button to make the computer respond to the code
Command	A single instruction in a computer program.	Scene	The combination of the background and objects in a program
Debug/ Debugging	Fixing code that has errors so that the code will run the way it was designed to.	Sequence	When a computer program runs commands in order.
Event	An occurrence that causes a block of code to be run.	Test	To run the code and observe what happens to identify where there might be bugs in the program.
Flowchart	A diagram which represents an algorithm.	Timer	A command to run a block of commands after a timed delay or at regular intervals.

Key Resources

purple mash

Tools

2Dos

2Chart

Free code chimp

Key Images

Open, close or share a file.

Save your work.

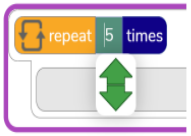
Design

Open design mode in 2Code.

Exit Design

Switch to code mode in 2Code.

A timer code block.



Repeat block.

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.