purple mash

2simple

Unit: 6.1 – Coding

Key Learning

To use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program.

To code, test and debug from these designs.

To use functions and tabs in 2Code to improve the quality of the code.

To code user interactivity using input functions.

Key Resources

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2Dos

2Chart

Free code gorilla

Tools

Key Vocabulary

Action - Types of commands, which are run on an object. They could be used to move an object or change a property.

Alert - This is a type of output. It shows a pop-up of text on the screen.

Algorithm - a precise step by step set of instructions used to solve a problem or achieve an objective. Flowchart

Bug - A problem in a computer program that stops it working the way it was designed.

Code Design – Design what a program will look like and what it will do.

Command - A single instruction in a computer program.

Control - These commands determine whether parts of the program will run, how often and sometimes, when.

Debug/Debugging - Looking for any problems in the code, fixing and testing them.

Event – Something that causes a block of code to be run.

Function – A type of procedure or routine.

Get Input - This puts the text that a user types into the computer's temporary memory to be used to control the program flow.

If - A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.
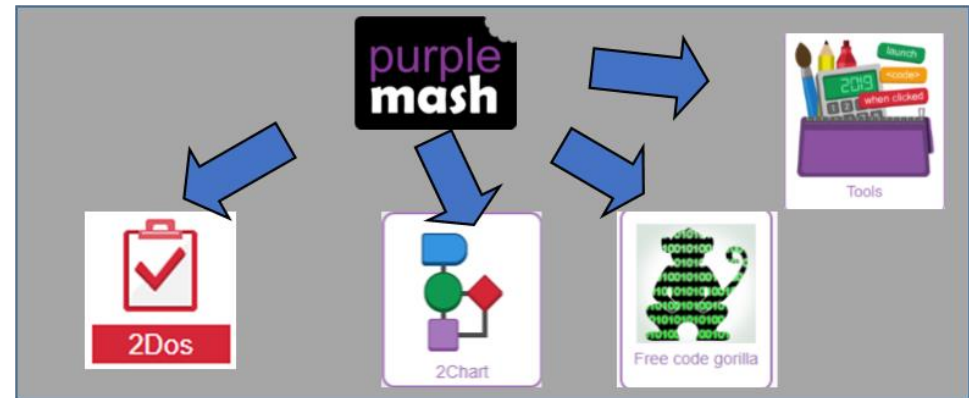
If/Else - A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

Input - Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

Output - Information that comes out of the computer e.g. sound.

Object - An element in a computer program that can be changed using actions or properties. In 2Code, buttons, characters and vehicles are types of objects.

Repeat - This command can be used to make a block of commands run a set number of times or forever.

Sequence - This is when a computer program runs commands in order. In 2Code this can also include "repeat" or a timer.

Selection - This is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition.

Simulation - A model that represents a real or imaginary situation.

Tabs – Allows you to move between blocks of code on different pages

Timer - Use this command to run a block of commands after a timed delay or at regular intervals.

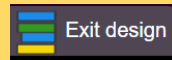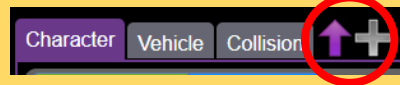**Variable** – A named area in computer memory. A variable has a name
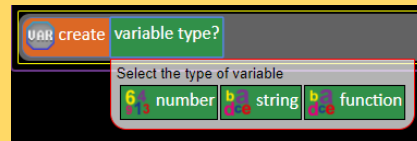
Key Images

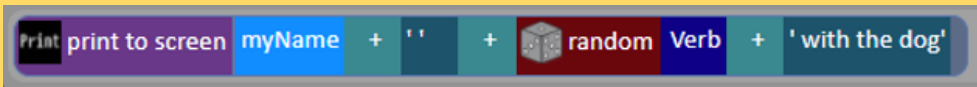Open design mode in 2Code

Switch to code mode in 2Code

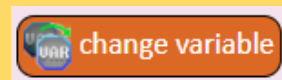Add a new Tab to your code or move code blocks between tabs

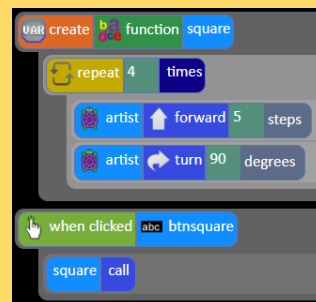Creating a variable or function in 2Code Gorilla

Example of combining variables and strings to print to the screen

A change variable block. Also used to call a function

A function called 'square' that is called by clicking on a button called btnSquare.

Key Questions

How can you use Tabs in 2Code Gorilla?

Tabs are used to organise you code and make it more readable. This also makes it easier to debug. Give the Tabs useful names to help with this.

What is a function in coding? Give an example that you have used in 2Code Gorilla.

A **function** is a block of code that you can access when you need it, so you don't have to rewrite the same block repeatedly. You **call** the function each time you want it. In a turtle program you could have a button that will make the turtle draw a square each time you click it. In the text adventure, there were functions for each room that were called when the user navigated to the room.

In 2Code Gorilla, how can a program receive user input?

When the user clicks on an object, when the user presses keys or swipes the screen with the mouse, the 'Get Input' and 'Prompt for input' commands.
On a touchscreen: when the screen is touched or swiped.