



Topic	Computing - Coding	Theme	Community	Year Group	6
Key Question	Why is fair trade fair?				

PURPLE MASH COMPUTING SCHEME OF WORK - KNOWLEDGE ORGANISER



Key Learning

Unit: 6.1 – Coding

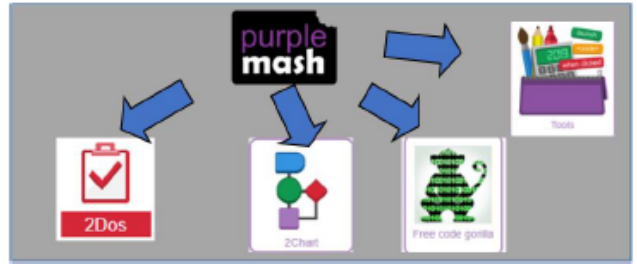
Key Resources

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 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.

Tab - 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

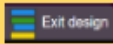
Key Images

Key Questions

Open design mode in 2Code



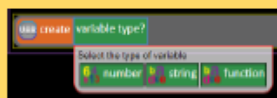
Switch to code mode in 2Code



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



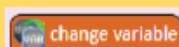
Creating a variable or function in 2Code Gorilla



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.



How can you use Tabs in 2Code Gorilla?

Tabs are used to organise your 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.



Topic	Science - Light	Theme	Community	Year Group	6
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Key Question	Why is fair trade fair?
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What should I already know?

- Certain things produce **light**, usually by burning (e.g. the Sun) or **electricity** (e.g. street lights).
- Shiny materials do not make **light** but do reflect it.
- **Shadows** are caused when certain materials block **light**.
- **Light** travels in straight lines. When **light** is blocked by an **opaque** object, a **dark shadow** is formed.
- The further away the **light source** is, the smaller the **shadow** is. The closer the **source** of the light, the bigger the shadow.

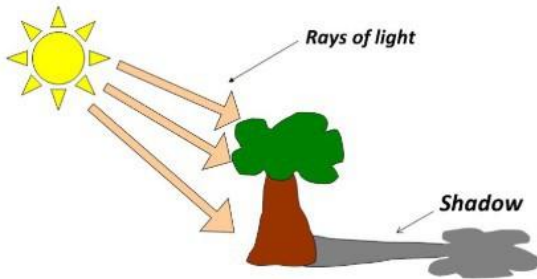
What will I know by the end of the unit?

Vocabulary

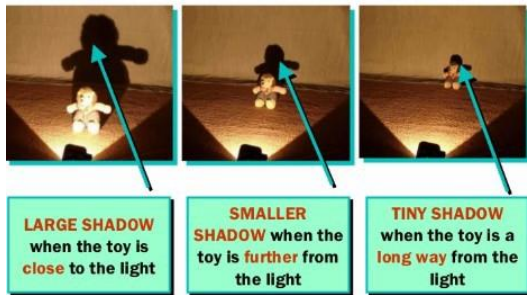
How does light travel?
 Light travels in a straight line.
 When you place a torch on a table in a dark room, the beam travels in a straight line.
 Reflection is when light bounces off a surface - this changes the direction in which the light travels.

angle	the direction from which you look at something
dark	the absence of light
dim	light that is not bright
electricity	a form of energy that can be carried by wires and is used for heating and lighting, and to provide power for machines
emits	to emit a sound or light means to produce it
light	a brightness that lets you see things.
luminous	an object that gives out, or emits, its own light is called a luminous object. Examples of luminous objects include: the Sun, stars, fire.
mirror	a flat piece of glass which reflects light, so that when you look at it you can see yourself reflected in it
opaque	if an object or substance is opaque, you cannot see through it
reflects	sent back from the surface and not pass through it
shadows	a dark shape on a surface that is made when something stands between a light and the surface
source	where something comes from
surface	the flat top part of something or the outside of it
torches	a small electric light which is powered by batteries and which you can carry
translucent	if a material is translucent, some light can pass through it
transparent	If an object or substance is transparent, you can see through it

What is the relationship between light sources and shadows?
 Because light travels in straight lines, when there is an opaque object blocking the light, a shadow is formed.
 These shadows have the same shape as the objects that cast them.



The size of a shadow changes as the light source moves.



How do we see?

Light travels in a straight line and hits the apple.

The ray of light is reflected off the apple and travels in a straight line to the eye allowing it to see the apple.