

Knowledge Organisers

Sample Pack

Purple Mash DigiTech
Scheme of Work



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**purple
mash**



BRING THE **WHOLE** **CURRICULUM** TO LIFE

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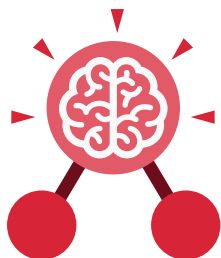
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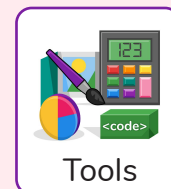
Unit: 1.1

Online Safety and Exploring Purple Mash

Key Learning

- To log in safely.
- To learn how to find saved work in the Online Work area and find teacher comments.
- To learn how to search Purple Mash to find resources.
- To become familiar with the icons and types of resources available in the Topics section.
- To start to add pictures and text to work.
- To explore the Tools and Games section of Purple Mash.
- To learn how to open, save and print.
- To understand the importance of logging out.

Key Resources



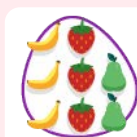
Tools



Paint Projects



2Connect



2Count



2Explore

Key Vocabulary

Log in

Using a username and password to access a system.

Username

A name that is used by a person to access an online site.

Password

A series of letters, numbers and special characters that is entered after the username to access an online site. In Purple Mash, this can also be a series of pictures.

Avatar

A digital picture to represent someone.

My Work

The place on Purple Mash where your work is stored. Only you and your teachers can access this.

Log out

Leaving a computer system.

Topics

The area on Purple Mash that contains ready-made resources.

Save

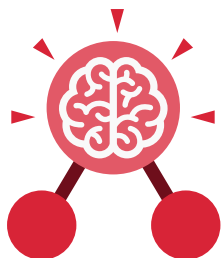
Store your work as you create something so it can be accessed later.

Notification

A system that lets you know if you have something to look at. On Purple Mash this is shown by a bell.

Tools

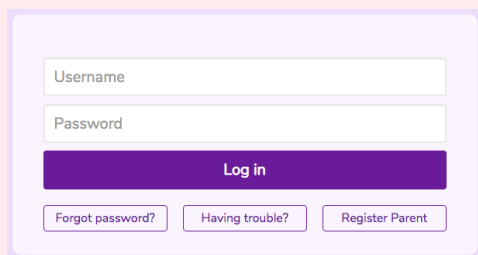
The area on Purple Mash with the different learning apps.



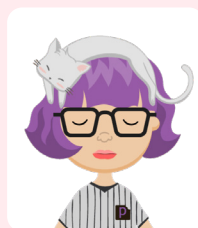
Unit: 1.1

Online Safety and Exploring Purple Mash

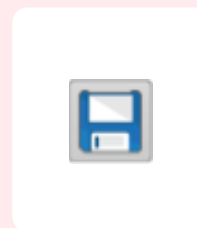
Key Images



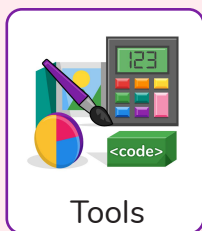
Log in Screen



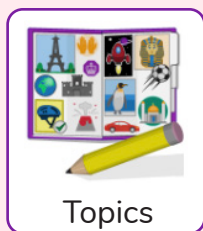
Avatar



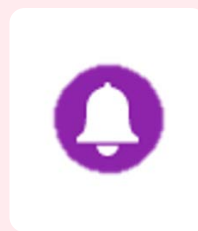
Save your work



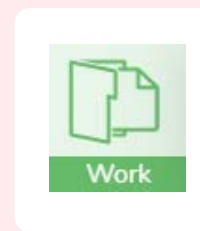
Tools section of Purple Mash



Topic section of Purple Mash



This picture shows you if you have any notifications



The area of Purple Mash where your work is stored

Key Questions

What is a password and why should we keep them safe?

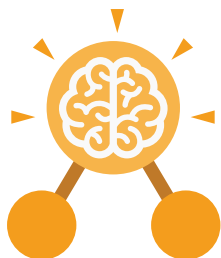
A password is a secret word or phrase that allows a user to access a website. Passwords are like toothbrushes in that they should not be shared with anyone else.

What is a digital avatar?

In Purple Mash, an avatar is a picture you create in the software to represent you. It is safer to use an avatar on the Internet than have a picture of yourself.

Where is my work stored on Purple Mash?

In Purple Mash, most of the work you save will be saved in the My Work section of Purple Mash. The only person that can see this work is the teacher and you.



Unit: 2.8

Presenting Ideas

Key Learning

- To explore how a story can be presented in different ways.
- To make a quiz about a story or class topic.
- To make a fact file on a non-fiction topic.
- To make a presentation to the class.

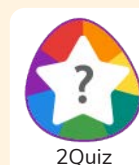
Key Resources



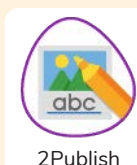
2Create a story



2Connect



2Quiz



2Publish

Key Vocabulary

Concept Map (Mind Map)

A tool for organising and representing knowledge. They form a web of ideas which are all interconnected.

Quiz

A test of knowledge, especially as a competition between individuals or teams as a form of entertainment.

Narrative

A speech or talk in which a new product, idea, or piece of work is shown and explained to an audience.

Node

A way to represent a concept or idea using text and/or images.

Non-Fiction

Informative or factual writing.

Audience

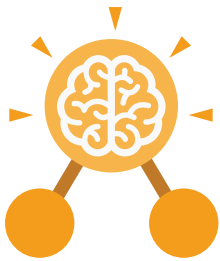
The people giving attention to something.

Animated

A process by which we see still pictures appear to move.

Presentation

A speech or talk in which a new product, idea, or piece of work is shown and explained to an audience.



Unit: 2.8

Presenting Ideas

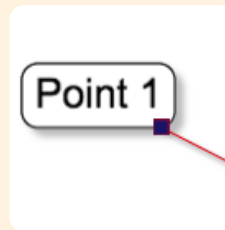
Key Images



Open, close and share a file



Create a new 2Connect document



Node



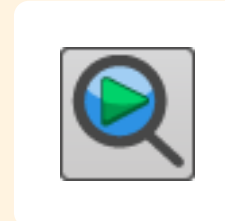
Collaboration (working together) on or off



Choose a quiz question on 2Quiz



Play the quiz



Preview the quiz question



Change the quiz settings

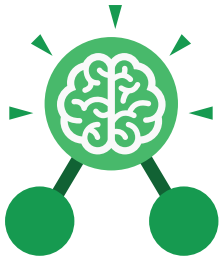
Key Questions

What do we need to think about when planning a presentation?

The important thing to consider is the audience. Think about how old they are and what they would find interesting. For younger children, a presentation with pictures may be more appropriate.

Why should I plan out my presentation?

Planning out your presentation allows you to make sure you have included all the information you need to. It is easier to do this in the planning phase rather than when you have started the presentation.



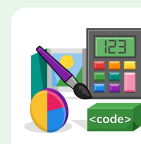
Unit: 3.1

Coding

Key Learning

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

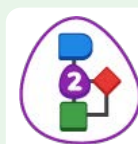
Key Resources



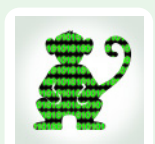
Tools



2Dos



2Chart



Free code chimp

Key Vocabulary

Action

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

Code block

A group of commands that are joined together and are run when a specific condition is met or when an event occurs.

Control

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

Alert

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

Code Design

Design what your program will look like and what it will do.

Debug/Debugging

Looking for any problems in the code, fixing and testing them.

Algorithm

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

Command

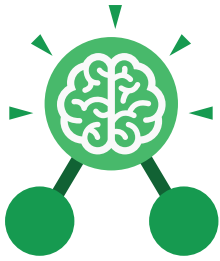
A single instruction in a computer program.

Design Mode

Used to create the look of a 2Code computer program when it is run.

Bug

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



Unit: 3.1

Coding

Key Vocabulary

Event

Something that causes a block of code to be run.

Flowchart

A diagram which represents an algorithm.

Input

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

Nesting

When you write a command inside something else e.g. a block of commands could be nested inside a timer.

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.

Properties

All objects have properties that can be changed in design or by writing code e.g. image, colour and scale properties.

Repeat

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

Sequence

when a computer program runs commands in order.

Computer Simulation

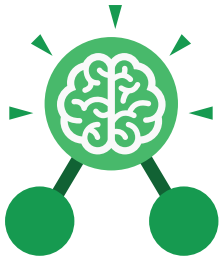
A program that models a real-life situation.

Timer

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

When clicked/swiped

An event command. It makes code run when you click or swipe on something (or press/swipe your finger on a touchscreen).



Unit: 3.1

Coding

Key Images



Open, close or share a file.



Save your work.

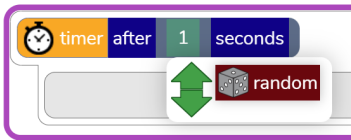


Design



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?

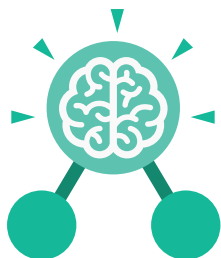
Using a flowchart to design a computer program is helpful as you can see it in its simplest form as inputs and outputs. You can see where the program is going which will prevent mistakes when creating the code.

What does repeat mean in computer programming?

Using the repeat command will make a block of commands run for a set number of times or forever. This 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.



Unit: 4.2

Online Safety

Key Learning

- To understand how children can protect themselves from online identity theft.
- To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.
- To identify the risks and benefits of installing software including apps.
- To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.
- To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.
- To identify the positive and negative influences of technology on health and the environment.
- To understand the importance of balancing game and screen time with other parts of their lives.

Key Resources



2Connect



2Investigate



SPAM

Key Questions

What is meant by a digital footprint?

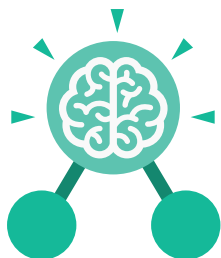
A digital footprint is the information that exists about a person based upon sites that they have visited, searches that they have done, information that they have shared and other online behaviours.

What is SPAM?

SPAM messages are emails or online messages sent from a computer to many other users. The users are sent the email without requesting it. The purpose of SPAM is for advertising, phishing or malware.

What is meant by plagiarism?

Plagiarism refers to using someone else's work and claiming it to be your own.



Unit: 4.2

Online Safety

Key Vocabulary

Computer virus

A piece of code which can copy itself and typically has a damaging effect on the device, such as corrupting the system or destroying data.

Digital footprint

The information about a person that exists on the Internet as a result of their online activity.

Phishing

Practice of sending email pretending to be from reputable companies in order to persuade individuals to reveal personal information, such as passwords and credit cards numbers.

Cookies

A small amount of data generated by a website and saved by a web browser. Its purpose is to remember information about the user.

Email

Messages sent by electronic means from one device to one or more people.

Plagiarism

When you use someone else's words or ideas and pass them off as your own.

Copyright

When the rights to something belong to a specific person.

Identity theft

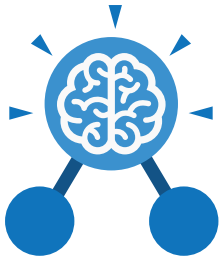
When a person pretends to be someone else.

Malware

Software that is specifically designed to disrupt, damage, or gain unauthorized access to a computer system.

Spam

Messages sent over the Internet, typically to many users, for the purposes of advertising, phishing or spreading malware.

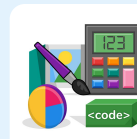


Unit: 5.1 Coding

Key Learning

- To begin to simplify code.
- To create a playable game.
- To understand what a simulation is.
- To program a simulation using 2Code.
- To know what decomposition and abstraction are in computer science.
- To take a real-life situation, decompose it and think about the level of abstraction.
- To understand how to use friction in code
- To begin to understand what a function is and how functions work in code.
- To understand what the different variables types are and how they are used differently.
- To understand how to create a string.
- To understand what concatenation is and how it works.

Key Resources



Tools



2Dos



2Chart



Free code gorilla

Key Vocabulary

Action

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

Bug

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

Decomposition

A method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program.

Abstraction

A way of de-cluttering and removing unnecessary details to get a program functioning.

Command

A single instruction in a computer program.

Concatenation

The action of linking things together in a series.

Control

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

Debug/Debugging

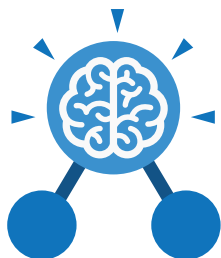
Looking for any problems in the code, fixing and testing them.

Alert

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

Design Mode

Used to create the look of a 2Code computer program when it is run.



Unit: 5.1

Coding

Key Vocabulary

Event

Something that causes a block of code to be run.

Function

A block or sequence of code that you can access when you need it, so you don't have to rewrite the code repeatedly. Instead, you simply 'call' the function each time you want it.

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.

Physical System

A system or process which happens in the real world using robotics, sensors or motors e.g. traffic lights.

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.

String

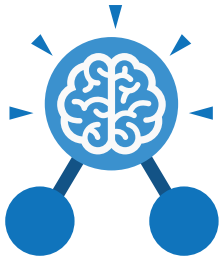
A sequence of characters, which could form words, phrases or even whole sentences.

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 and a value. The program can change this variable value.



Unit: 5.1

Coding

Key Images



Design

Open design mode
in 2Code.

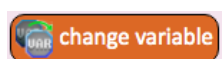


Exit Design

Switch to code mode
in 2Code.

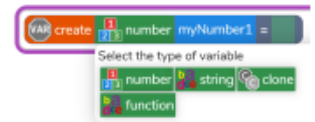


Add a new Tab to
your code



A change variable block.

Example of combining variables and strings to print to
the screen



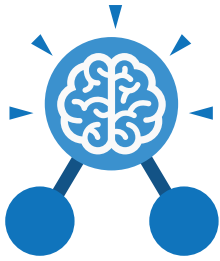
Creating a variable in
2Code



Creating a function in 2Code



Calling a function in 2Code



Unit: 5.1

Coding

Key Questions

What does simulating a physical system mean?

Creating a program where the objects behave as they would in the real world. For example, a football program that uses angles, speed and friction to simulate kicking a football. When simulating a physical system, you first must break the system down into parts that can be coded (decomposition). The different parts will come together to make the full simulation.

Describe how you would use variables to make a timer countdown and a scorepad for a game.

Timer countdown:
Create a timer variable and set it to the starting number of seconds. Add a Timer command that repeats and subtracts 1 every second. Add a text object in design view to display this number.

Score:
Create a variable to store the score, each time the user gains a point, change and display the value of the variable.

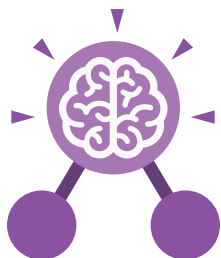
Give examples of how you could use the Launch command in 2Code.

Clicking on a button or other object in the program to opens another 2Code program or a webpage.

What do the terms decomposition and abstraction mean? Use examples to explain them.

Decomposition is breaking a task into its component parts so that each part can be coded separately. If you were coding a game of chess, you could decompose into the moves of the different pieces and the setup of the playing space.

Abstraction is removing unnecessary details to get the program functioning. In the example, the colour and size of the squares is not important to game play.



Unit: 6.6 Networks

Key Learning

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

Key Resources

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mash**



Tim Berners- Lee
Profile



Communication
Questionnaire

Key Vocabulary

Internet

A global computer network providing a variety of information and communication facilities consisting of interconnected networks using standardized communication protocols.

Network

Several interconnected computers, machines, or operations.

Router

A device which forwards data packets to the appropriate parts of a computer network.

Local area network (LAN)

A computer network that links devices within a building or group of adjacent buildings, especially one with a radius of less than 1 km.

Network cables

Used to connect and transfer data and information between computers and routers.

World Wide Web

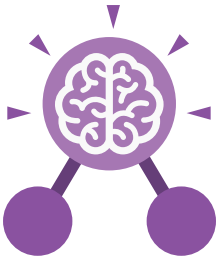
An information system on the Internet which allows documents to be connected to other documents by hypertext links, enabling the user to search for information by moving from one document to another.

Wide area network (WAN)

A computer network in which the computers connected may be far apart, generally having a radius of more than 1 km.

Wireless

The ability to transmit data from one device to another without using wires.



Unit: 6.6

Networks

Key Questions

What is the difference between the Internet and the World Wide Web?

The Internet is a global network of networks while the Web, also referred formally as the World Wide Web (www) is collection of information which is accessed via the Internet.

What is the difference between a LAN and a WAN?

Both are networks that connect computers together. A LAN (Local Area Network) is normally for computers connected less than 1KM distance whilst a WAN

Who is Tim Berners-Lee?

Tim Berners-Lee is the inventor of the World Wide Web. The WWW is the system that delivers webpages over the internet.