



Unit: 5.2 Online Safety

Key Learning

- To gain a greater understanding of the impact that sharing digital content can have.
- To review sources of support when using technology and children's responsibility to one another in their online behaviour.
- To know how to maintain secure passwords.
- To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this.
- To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.
- To learn about how to reference sources in their work.
- To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information.
- To ensure reliability through using different methods of communication.

Key Resources

purple
mash



Display Boards



Paint a Picture



Connect



Publish Plus

Key Questions

Who do I tell if I see anything online that makes me upset or scared?

When you are at school, you should tell the teacher or another adult. At home, you should tell your parent or guardian or another adult that you trust.

Why are passwords so important?

Passwords protect your information and stop other people accessing it. Passwords are like a toothbrush; they should not be shared with anyone else.

Why is it important to reference sources in my work?

If you use a book or article written by someone else, then you must reference it, so people know where you got the information from. If you don't do this then it is known as plagiarism.



Unit: 5.2 Online Safety

Key Vocabulary

Online safety

Refers to staying safe when having a presence online.

Smart rules

A set of rules based around the word SMART designed to help you stay safe when online.

Password

A string of characters that allows access to a computer system or service.

Reputable

Having a good reputation.

Encryption

The process of converting information or data into a code, especially to prevent unauthorized access.

Identity theft

The practice of using another person's name and personal information in order to obtain credit, loans, etc.

Shared image

A picture that is shared online for other people to see.

Plagiarism

The practice of taking someone else's work or ideas and passing them off as one's own.

Citations

A quotation from or reference to a book, paper, or author, especially in an academic work.

Reference

A mention of a source of information in a book or article including online.

Bibliography

A list of all the books and articles used in a piece of work.



Unit: 5.4 Databases

Key Learning

- To learn how to search for information in a database.
- To contribute to a class database.
- To create a database around a chosen topic.

Key Resources

purple
mash



2Investigate



Avatar builder

Key Questions

What is a database?

A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

Why is the collaborative feature important?

Making a database collaborative allows lots of people to enter information into the database at the same time. This is a lot quicker than one person entering the data by themselves.

In what ways can I sort information in a database?

A database can hold lots of information so it is essential that information can be effectively investigated. In 2Investigate, data can be searched and sorted in a variety of ways. It can also be presented pictorially.



Unit: 5.4 Databases

Key Vocabulary

Avatar

An icon or figure representing a person in a video game, Internet forum, etc.

Binary tree (branching database)

A way to sort information by dividing the information into groups based upon questions with yes or no answers.

Charts

Representing information in a pictorial form.

Collaborative

Produced by, or involving, two or more parties working together.

Data

Facts and statistics collected together for information.

Database

A set of data that can be held in a computer in a format that can be searched and sorted for information.

Find

Search for information in a database.

Record

A collection of data about one item entered into a database.

Sort, Group and Arrange

Different ways to sort information in a database so it is easy to read, understand and interpret.

Statistics and reports

To produce information about data in a database.

Table

Sorting information into rows and columns.

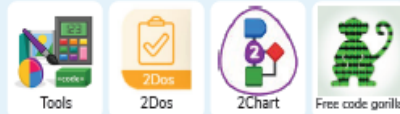


Unit: 5.1 Coding

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



Unit: 5.1 Coding

Key Vocabulary

If

A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.

Nesting

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

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 happen in the real world using robotics, sensors or motors e.g. traffic lights.

Properties

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

Run

To cause the instruction in a program to be carried out.

Repeat

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

Score

A record of points won or lost in a game.

Sequence

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

Simplify/Simplified

To make something easier.

Simulation

A model that represents a real or imaginary situation.

Tab

In 2Code, this is a way to organise a program into separate pages (tabs) of code.

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.

Key Vocabulary

Action

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

Abstraction

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

Algorithm

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

Button

An object that can trigger an event in response to being clicked.

Called

A line of code that triggers a function to be executed.

Co-ordinates

Numbers which determine the position of a point, shape or object in a particular space.

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.

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.

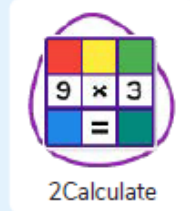


Unit: 5.3 Spreadsheets

Key Learning

- To use formulae within a spreadsheet to convert measurements of length and distance.
- To use the count tool to answer hypotheses about common letters in use.
- To use a spreadsheet to model a real-life problem.
- To use formulae to calculate area and perimeter of shapes.
- To create formulae that use text variables.
- To use a spreadsheet to help plan a school cake sale.

Key Resources



Key Questions

How would you add a formula so that the cell shows the product of two other cells?

Click on the cell where you want the product to be displayed then click the formula wizard button. Click on the cell that contains the first number. Choose the x operation then click on the second number. Click OK.

What would you use in 2Calculate to have a cell that automatically calculates the number of days since a certain date?

You could use formulae and the totalling tools. To make the spreadsheet easier to understand, you could use named variables.

Explain what a spreadsheet model of a real-life situation is and what it can be used for?

It represents the data of a situation for example: Budgeting for a party; working out how big a field needs to be for a certain number of animals; working out how to spend your pocket money over time. Using the existing data to predict what time your shadow will be a certain length etc.



Unit: 5.3 Spreadsheets

Key Vocabulary

Average Function

A feature that allows a user to find the average values of selected cells.

Advance mode

A mode of 2Calculate in which the cells have references and can include formulae.

Copy and Paste

A way to copy information from the screen into the computer's memory and paste it elsewhere without re-typing.

Columns

Vertical reference points for the cells in a spreadsheet.

Cells

An individual section of a spreadsheet grid. It contains data or calculations.

Charts

Use this button to create a variety of graph types for the data in the spreadsheet.

Equals tool

Tests whether the entered calculation in the cells to the left of the tool has the correct answer in the cell to the right of the tool.

Formula

Use the formula wizard or type into the formula bar to create a formula in a cell, this will calculate the value for the cells based upon the value of other cells in the spreadsheet.

Formula Wizard

The wizard guides you in creating a variety of formulae for a cell such as calculations, totals, averages, minimum and maximum for the selected cells.

Move cell tool

This tool makes a cell's contents moveable by drag-and-drop methods.

Random tool

Click to give a random value between 0 and 9 to the cell.

Rows

Vertical reference points for the cells in a spreadsheet.

Spin Tool

Adds or subtracts 1 from the value of the cell to its right.

Spreadsheet

A computer program that represents information in a grid of rows and columns. Any cell in the grid may contain either data or a formula that describes the value to be inserted based on the values in other cells.

Timer

When placed in the spreadsheet, click the timer to adds 1 to the value of the cell to its right every second until it is clicked again.



Unit: 5.5 Game Creator

Key Learning

- To plan a game.
- To design and create the game environment.
- To design and create the game quest.
- To finish and share the game.
- To self and peer evaluate.

Key Resources



2DIY3D

Key Vocabulary

Animation

Creating an illusion of movement.

Image

In this case, a picture displayed on the computer screen.

Texture

High frequency detail or colour information on a computer-generated graphic.

Computer game

A game played using a computer, typically a video game.

Instructions

Detailed information about how something should be done or operated.

Perspective

Representing three-dimensional objects on a two-dimensional surface to give the right impression of their height, width, depth, and position in relation to each other.

Customise

Modify (something) to suit an individual or task.

Interactive

Responding to a user's input on a computer or device.

Evaluation

The making of a judgement about the value of something.

Screenshot

An image of the data displayed on the screen of a computer or mobile device.

Playability

A measure of either the ease by which a video game may be played, or of the overall quality of its gameplay.



Unit: 5.6 3D Modelling

Key Learning

- To be introduced to 2Design and Make and the skills of computer aided design.
- To explore the effect of moving points when designing.
- To design a 3D Model to fit certain criteria.
- To refine and print a model.

Key Resources



2D&M

Key Vocabulary

CAD – Computer aided Design

A CAD computer program or app allows you to design a 3D object or environment in 2D and visualise it in 3D on the screen from many angles.

Viewpoint

A person's opinion or point of view.

3D Printing

The action or process of making a physical object from a three-dimensional digital model, typically by laying down many thin layers of a material in succession.

Polygon

An object with at least three straight sides and angles, and typically five or more.

Modelling

The activity of making models.

2D

Something that has only two dimensions; height and width.

Points

An exact position or location on a 2D surface.

3D

Something that has three dimensions; height, width and depth.

Net

A pattern that you can cut and fold to make a model of a solid shape.

Template

Something that serves as a model for others to copy.

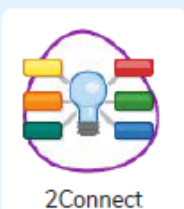


Unit: 5.7 Concept Maps

Key Learning

- To understand the need for visual representation when generating and discussing complex ideas.
- To understand the uses of a 'concept map'.
- To understand and use the correct vocabulary when creating a concept map.
- To create a concept map.
- To understand how a concept map can be used to retell stories and information.
- To create a collaborative concept map and present this to an audience.

Key Resources



Key Vocabulary

Audience

People giving attention to something.

Concept Map

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

Node

A way to represent concepts or ideas.

Collaboratively

Something that is produced by, or involves, two or more parties working together.

Thought

An idea or opinion produced by thinking or occurring suddenly in the mind.

Connection

A relationship or link between two nodes or ideas.

Concept

An idea.

Idea

An opinion or belief.

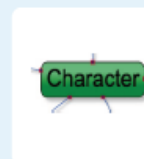
Visual

A picture, piece of film or display used to illustrate or accompany something.



Unit: 5.7 Concept Maps

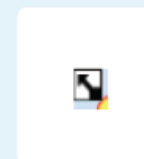
Key Images



Node



Connection



Resize node



Edit node



Show story



Begin Presentation



Collaboration Off



Collaboration On

Key Questions

What is a concept map?

A concept map is a pictorial way of showing relationships between concepts and ideas. A concept map allows you to show information, pictures and links to support an idea or concept.

How is information arranged on a concept map?

On a concept map ideas or concepts are organised into nodes which are linked together with lines to show how the concepts and ideas link together.

How does a concept map help share ideas?

A concept map in 2Connect allows many users to contribute to the map which means that ideas or concepts can be quickly amended or additional information provided.