



## Unit: 3.1 Coding

### Key Learning

- To design algorithms using flowcharts.
- To design an algorithm that represents a physical system and code this representation.
- To use selection in coding with the 'if' command.
- To understand and use variables in 2Code.
- To deepen understanding of the different between timers and repeat commands.

### Key Resources



### 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.

#### Algorithm

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

#### 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.

#### Bug

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

#### Command

A single instruction in a computer program.

#### Design Mode

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



## Unit: 3.1 Coding

### Key Vocabulary

#### Event

Something that causes a block of code to be run.

#### If

A conditional command. This tests a statement. If the condition is true, then

#### 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.

#### 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.

#### Computer Simulation

A program that models a real-life situation.

#### Selection

This is a conditional/decision command. When selection is used, a program will choose a different

#### 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.



What I already know:

- To understand what an algorithm is.
- To design algorithms and then code them.
- To compare different object types.
- To use the repeat command.
- To use the timer command.
- To know what debugging is and debug programs.



## Unit: 3.2 Online Safety

### Key Learning

- To know what makes a safe password.
- Methods for keeping passwords safe.
- To understand how the Internet can be used in effective communication.
- To understand how a blog can be used to communicate with a wider audience.
- To consider the truth of the content of websites.
- To learn about the meaning of age restrictions symbols on digital media and devices.

### Key Resources

purple  
mash



2Dos



2Connect



2Publish Plus



2Blog



2Write

### 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.

**Is everything I read on the Internet true?**

Just because something is on the Internet doesn't mean that it is true. Some people create spoof websites that pretend to be something else such as a bank website or to provide misleading information.

**How do I know if I am old enough to play a computer game?**

Computer games, like films, are often not suitable for children. PEGI ratings will show how old a person must be to play a game.



## Unit: 3.2 Online Safety

### Key Vocabulary

#### Password

A secret word, phrase or combination of letters, numbers and symbols that must be used to gain admission to a site or application such as a website.

#### Blog

A regularly updated website or web page, typically one run by an individual or small group, that is written in an informal or conversational style.

#### Website

A set of related web pages located under a single name.

#### Webpage

A page online that makes up one screen of a website.

#### Spoof website

A website that uses dishonest designs to trick users into thinking that it represents the truth.

#### Concept map

A diagram that shows how different objects or ideas are related and connected.

#### Username

An identification used by a person with access to a computer, network, or online service.

#### PEGI rating

A rating that shows what age a game is suitable for.



## What I already know:

- To know how to refine searches using the Search tool.
- To use digital technology to share work on Purple Mash to communicate and connect with others locally.
- To have some knowledge and understanding about sharing more globally on the Internet.
- To introduce Email as a communication tool using 2Respond simulations.
- To understand how we should talk to others in an online situation.
- To open and send simple online communications in the form of email.
- To understand that information put online leaves a digital footprint or trail.
- To identify the steps that can be taken to keep personal data and hardware secure.



## Unit: 3.3 Spreadsheets

### Key Learning

- To use the symbols more than, less than and equal to, to compare values.
- To use 2Calculate to collect data and produce a variety of graphs.
- To use the advanced mode of 2Calculate to learn about cell references.



2Calculate

### Key Resources

### Key Questions

Explain how you would collect data to find out children's favourite school subjects. What sort of graph would you create?

Label one column 'Subject' and list the subjects in this column. In the cells to the right put in the number of children who like this subject. Use the chart button to automatically create a chart. A pie chart would be a suitable choice.

How can you make a 3 times table machine using the spin tool? Could you use the equals tool to check your answer

Put the spin tool in the left most cell of a row. Type 0 x 3 in the next three cells. Put an equals tool in the next cell in the row. When you spin the spin tool, the question will change. Enter the answer and the equals tool will tell you if it is correct.

Explain how you would locate a cell in the advanced mode?

Cells in advanced mode have rows labelled with numbers, and columns labelled with letters. So, each cell has a number and letter. For example, A1 or D7.



## Unit: 3.3 Spreadsheets

### Key Vocabulary

#### < > =

Symbols used to represent comparing two values.  $a < b$  means 'a is less than b'.  $a > b$  means 'a is greater than b'.  $a = b$  means 'a is equal to b'. These can be combined, for example  $a \leq b$  means 'a is equal to or less than b'.

#### 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.

#### Delete key

Use this key to remove the contents of a cell.

#### 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.

#### Move cell tool

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

#### Rows

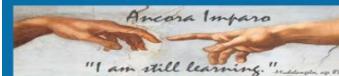
Vertical reference points for the cells in a spreadsheet.

#### Spin Tool

Clicking on this in a cell will increase or decrease the value in the cell to the right by 1.

#### 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.



## What I already know:

- To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine.
- To learn how to copy and paste in 2Calculate.
- To use the totalling tools.
- To use a spreadsheet for money calculations.
- To use the 2Calculate equals tool to check calculations.
- To use 2Calculate to collect data and produce a graph.





## Unit: 3.4 Touch Typing

### Key Learning

- To introduce typing terminology.
- To understand the correct way to sit at the keyboard.
- To learn how to use the home, top and bottom row keys.
- To practise typing with the left and right hand.

### Key Vocabulary

#### Posture

The correct way to sit at the computer.

#### Top row keys

The keys on the top row of the keyboard.

#### Home row keys

The keys on the middle row of the keyboard.

#### Bottom row keys

The keys on the bottom row of the keyboard.

#### Space bar

The bar at the bottom of the keyboard.

### Key Resources



### Key Questions

#### Why should I have a good posture at the computer?

A good posture is important to help you avoid any injuries that come from repeatedly using the computer incorrectly.

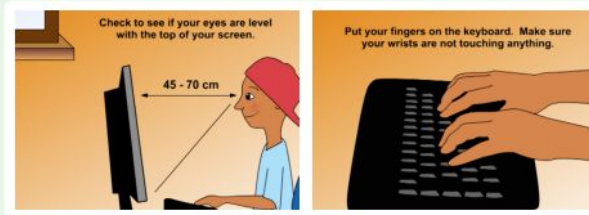
#### Why should I type certain keys with certain fingers?

Using specific fingers for specific keys allows you to type more quickly.

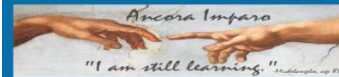


## Unit: 3.4 Touch Typing

### Key Images



Posture





## Unit: 3.5 Email

### Key Learning

- To think about different methods of communication.
- To open and respond to an email using an address book.
- To learn how to use email safely.
- To add an attachment to an email.
- To explore a simulated email scenario.

### Key Resources

purple  
mash



### Key Questions

#### What is email?

Email is a method of sending electronic communication from one device to another.

#### What should I do if I receive an email that makes me upset or scared?

If you are at school, you should tell the teacher immediately. If you receive the message at home, then you should tell a parent or guardian.

#### What information can I send in an email?

As well as sending a message, files such as photographs, videos, music and other resources can be attached to the email and sent to the receiver.



## Unit: 3.5 Email

### Key Vocabulary

#### Communication

The sharing or exchanging of information by speaking, writing, or using some other medium such as email.

#### Report to the teacher

A way in 2Email to tell the teacher if you have received an email that makes you feel upset or scared.

#### Password

A secret word, phrase or combination of letters, numbers and symbols that must be used to gain admission to a site or application such as email.

#### Attachment

A file, which could be a piece of work or a picture, that is sent with the email.

#### CC

A way of sending a copy of your email to other people so they can see the information in it.

#### Email

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

#### Address book

A list of people who you regularly send an email to.

#### Compose

To write or create something.

#### Formatting

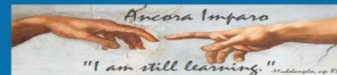
Allows you to change the way the text of an email looks. For example, you can make the text bold or underline it.

#### Send

To make an email be delivered to the email address it is addressed to.

#### Save to draft

Allows you to save an email that you are working on and send it later.



## What I already know:

- To use digital technology to share work on Purple Mash to communicate and connect with others locally.
- To have some knowledge and understanding about sharing more globally on the Internet.
- To introduce Email as a communication tool using 2Respond simulations.
- To understand how we should talk to others in an online situation.
- To open and send simple online communications in the form of email.
- To understand that information put online leaves a digital footprint or trail.
- To identify the steps that can be taken to keep personal data and hardware secure.



## Unit: 3.6 Branching Databases

### Key Learning

- To sort objects using just 'yes' or 'no' questions.
- To complete a branching database using 2Question.
- To create a branching database of the children's choice.

### Key Resources



### Key Vocabulary

#### Branching database

Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

#### 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.

#### Question

Something that is asked or written to try and gain information.

#### Data

Facts and statistics collected together for information.



## Unit: 3.6 Branching Databases

### Key Questions

#### What is meant by data?

Facts about something; data can be words, numbers or pictures. For example, the class register contains data about the names, addresses and attendance of the children in the class.

#### 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.

#### What is a branching database?

Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

### Key Images



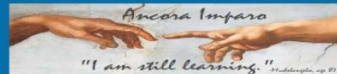
Open, close or share a file



Give the database a name



Add a question to begin to sort the information





## Unit: 3.7 Simulation

### Key Learning

- To consider what simulations are.
- To explore a simulation.
- To analyse and evaluate a simulation.

### Key Vocabulary

#### Simulation

A computer simulation is a program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

### Key Resources



2Simulate

### Key Questions

#### What is a computer simulation?

A program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

#### What kind of simulations are there?

Some simulations represent dangerous situations for training such as flying in space, carrying out medical operations or piloting an aeroplane. Others simulate activities for fun, such as racing simulations.

#### Are there any problems with simulations?

Simulations are often too simple; and unexpected problems can still occur in real life that are difficult to simulate. Simulations can also be very expensive.



## Unit: 3.7 Simulation

### Key Images



2Simulate main screen



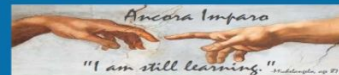
#### Locked Out

A lively dog causes problems for Mariza, her baby brother Sam and her mum.



#### The Dark Side of Elpmis

Trainee astronauts get ready for a mission to the planet Elpmis.







## Unit: 3.8 Graphing

### Key Learning

- To enter data into a graph and answer questions.
- To solve an investigation and present the results in graphic form.

### Key Resources



### Key Vocabulary

#### Graph

A diagram showing the value of objects.

#### Field

A part of a record.

#### Data

Facts and statistics collected together for reference

#### Bar chart

A graph in which the numerical amounts are shown by the height or length of lines or rectangles of equal width.

#### Block graph

A graph where a block represents one item.

#### Line graph

A graph where a line is used to show an amount.

#### Pie chart

A type of graph in which a circle is divided into sections that each represent a part of the whole.

#### Row

A horizontal line of entries in a table or graph.

#### Column

A vertical line of entries in a table or graph.



## Unit: 3.8 Graphing

### Key Images

Chart Title

Insert the name of the graph here.



Add and remove a row from the graph.



Vertical Bar Chart



Horizontal Bar Chart



Block Graph



Line Graph



Pie Chart



Data entry table

### Key Questions

#### What is a graph?

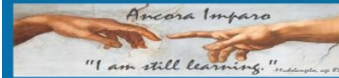
A diagram representing part of a set of data. Graphs can be drawn by hand or on the computer. There are different types of graphs.

#### What are the frame lines on the graph called?

They are the axes. The axis that goes up and down (vertical) is called the 'y' axis and usually shows the amount. The axis that goes across (horizontal) is called the 'x' axis and shows what is being measured.

#### What different kinds of graphs are there?

There are lots of different types of graphs including line graph, bar chart and pie chart.







## Unit: 3.9

### Presenting with Microsoft PowerPoint

#### Key Learning

- To understand the uses of PowerPoint.
- To create a page in a presentation.
- To add media to a presentation.
- To add animations to a presentation.
- To add timings to a presentation.
- To use the skills learnt to design and create an engaging presentation.

#### Key Resources



#### Key Images



Open a new document



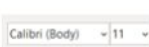
Open an existing document



Save your work



Undo key



Font Category



Insert a new slide



Insert a text box



Home tab where many editing tools are found



Insert a picture



Design tab where you can find ready-made design templates



Insert tab where you can add an object such as a picture or



## Unit: 3.9

### Presenting with Microsoft PowerPoint

#### Key Vocabulary

##### Animation

Visual effects used on objects such as text boxes or pictures. They allow these objects to be brought on and off the slide in a certain way.

##### Audio

Any type of sound, such as music or voiceover.

##### Design Templates

A variety of ready-made templates with custom formatting (font, colour scheme etc.) which gives a certain look and feel.

##### Entrance Animation

The animation used to bring an object (such as a picture or text box) onto the slide.

##### Font

A set of type which shows words and numbers in a particular style and size.

##### Media

Images, videos or sounds which can be added to a presentation.

##### Presentation

A visual way of displaying information to an audience that is clear and engaging. It can contain text, images and videos.

##### Presentation Program

A computer program, such as PowerPoint, which is used to create a presentation.

##### Slide

A single page within a presentation.

##### Slideshow

A collection of pages arranged in sequence that contains text and images to present to an audience. Often referred to as a PowerPoint presentation.

##### Stock image

Existing photos and images which are available and free to use.

##### Text box

A box in which text can be inputted and formatted.

##### Text formatting

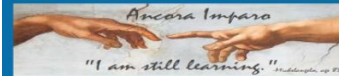
When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics.

##### Transition

The interesting effect used when one slide moves onto the next.

##### WordArt

A way to treat text as a graphic so that you can add special effects to text.



What I already know:

- 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



## Unit: 3.9 Presenting- with Google Slides

### Key Learning

- To understand the purpose of the Slides tool.
- To add slides to presentations.
- To add media to presentations.
- To format text appropriately.
- To add shapes and lines to enhance a presentation.
- To use the skills learnt to design and create an engaging presentation.

### Key Resources



Google Slides

### Key Images



Open a new document



Access sharing options



Return to slides home



Undo key

Arial - 11 - Bold Italic Underline Text color

Text formatting



Insert a text box



Insert image



Insert shape



Insert line



Word art



Insert a new slide



## Unit: 3.9 Presenting- with Google Slides

### Key Vocabulary

#### Animation

Visual effects used on objects such as text boxes or pictures. They allow these objects to be brought on and off the slide in a certain way.

#### Design Themes

A variety of ready-made templates with custom formatting (font, colour scheme etc.) which gives a certain look and feel.

#### Font

A set of type which shows words and numbers in a particular style and size.

#### Media

Images, videos, or sounds which can be added to a presentation.

#### Presentation

A visual way of displaying information to an audience that is clear and engaging. It can contain text, images, and videos.

#### Presentation Program

A computer program, such as Google - 3.9 (Google) Slides, which is used to create a presentation.

#### Slide

A single page within a presentation.

#### Slideshow

A collection of pages arranged in sequence that contains text and images to present to an audience. Often referred to as a Slides presentation.

#### Text box

A box in which text can be inputted and formatted.

#### Text formatting

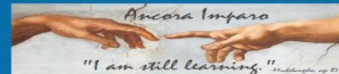
When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics.

#### Transition

The interesting effect used when one slide moves onto the next.

#### WordArt

A way to treat text as a graphic so that you can add special effects to text.



What I already know:

- 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