

The logo for Purple Mash, featuring the word "purple" in a purple font and "mash" in a white font, both on a black background with a torn-edge effect.

**purple
mash**

Declarative and Procedural Knowledge

Year 2

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Introduction

It is important to note that for simplicity and to demonstrate strand coverage, units have been put into their 'best fit' strand as per the Scheme of Work Overview document.

Key Stage 1

- In many units, children will be furthering online understanding and concepts of technology (DL) through making digital content (IT and CS)

Key Stage 2

- Children will be understanding of the capabilities of the World Wide web (CS) while searching online (IT).
- They will be developing their understanding of appropriate behaviour online (DL) skills while learning about searching the Internet (IT).

Both Key Stages

- At all times children will be learning about using technology safely and respectfully (DL).
- In most units for all strands, children will be developing their general information technology skills (IT).
- This overlap, repetition and reinforcement helps to give children a deeper understanding of the knowledge and skills across all strands and of their integrated nature in the real-world.

*For more detailed information to assess pupils, see the assessment statements at the end of each unit and repeated in the Assessment document for each year group.



Unit 2.1 – Coding

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Computer Science

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.
- Create and debug simple programs.
- Use logical reasoning to predict the behaviour of simple programs.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:

- In computing, a set of instructions is known as an algorithm. Steps in an algorithm must be followed in order to achieve the intended outcome.
- Code can be created that detects when two objects have collided. This code can have an action associated with it. For example, if an alien ship (object) collides with a planet (object) a crash sound is heard (Action). We call this collision detection in 2Code.

Procedural – By the end of the unit the students will know how to:

- Follow a written algorithm on a plan and interpret it.
- Identify events, objects and actions in a plan of an algorithm.
- Predict what will happen if the planned algorithm was converted to code.
- Use the correct code within 2Code to implement the algorithm which includes event ‘when clicked’, objects and actions.
- Recognise the **collision detection** block as part of the event category blocks.
- Drag a **collision detection** block into a program.
- Assign two objects within the **collision detection** command for it to detect collisions.
- Assign an event for when the two objects collide such as when princess collides with frog, princess says ‘hello’.



<ul style="list-style-type: none"> Programs follow a sequence of instructions (commands) in order. Timers can be introduced into programs to make parts of the program run after a set time. In 2Code, you can use a timer after command to delay the number of seconds until specific parts of a program are run. 	<ul style="list-style-type: none"> Recognise the timer block as part of the control category blocks. Drag a timer command block into a program. Use the time after command and set a number of seconds. Place code within a timer after command that will run once the timer has reached the set seconds after execution. Observe placing two separate timer commands in a program and identify that they will run independently of one another if a timer isn't nested inside another timer.
<ul style="list-style-type: none"> A computer program in 2Code can include objects that are different types. Each object type will have attributes (properties) that can be modified. 	<ul style="list-style-type: none"> Go into design mode of 2Code and find the different objects. Place up to four different objects into a design scene of a program including the 'Turtle' object. Change an object image by clicking on an object and selecting image from the attributes table. Change an objects size by clicking on an object and selecting scale from its attributes table.
<ul style="list-style-type: none"> Events in computer programs cause a block of code to be run. Events could be the result of a user pressing a key or clicking the screen. Event commands in 2Code are used to create blocks of code that are run when an event happens. There are different event command blocks in 2Code. 	<ul style="list-style-type: none"> Recognise the event command blocks – When Key Event, When Swiped Event, When Clicked Event and Collision Detection. Include a When Key Event or When Clicked Event in a program. Assign up to four objects to the When Key Event or When Clicked Event that have been created in design mode. Give each object a movement. Run code and test that when the event occurs e.g. 'click up arrow', all four objects move.
<ul style="list-style-type: none"> Buttons are an object type in 2Code. Buttons use the 'When Clicked' event and will run a piece of code when they are clicked on. 	<ul style="list-style-type: none"> Enter design mode and locate the button object under 'Form/Text' tab.



	<ul style="list-style-type: none"> • Insert a button into design mode scene that contains other object types. • Drag the button command object when in code view into a program and notice that it contains the When Clicked Event. • Nest code within the When Clicked Button that makes an object carry out an action when the button is clicked.
<ul style="list-style-type: none"> • Bugs when referring to computer programs, are bits of code that are stopping a program from working how it was intended. Debugging is the process of looking for any problems in code, fixing the problems and repeatedly testing them. 	<ul style="list-style-type: none"> • Recognise what a program in 2Code is supposed to do. • Run the code and check that the program is operating correctly. • If anything hasn't worked correctly, the code responsible for the area is located. • Stop the program and make changes to the broken code. • Run the program again and test it. • Repeat the process until the program is running as intended.



Unit 2.2 – Online Safety

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Digital Literacy

- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:

- Searches can be refined so it is easier to find something.
- Work can be shared in a variety of ways.
- Email is a way of communicating and know that in this form of communication, as with others, you need to be considerate of the user.

Procedural – By the end of the unit the students will know how to:

- Locate the search bar and type in simple terms.
- Say why a Purple Mash search is known as a safe search.
- Look at the ways to narrow down the search to a specific year group or subject.
- Carry out search terms using specific parameters.
- Explain why a search on the Internet may not be a safe search.
- Tell a trusted adult if they search for something the results are inappropriate or upsetting.
- Define what is meant by sharing work.
- Share work on Purple Mash in a variety of ways.
- Share work to a specific display board.
- Explain what email is and advantages of it over other forms of communication.
- Find the email program within Purple Mash.
- Locate the different features on 2Email such as reply etc.
- Reply to an email



- The term digital footprint relates to information that a user puts online, and that this footprint may remain even when we think we have removed the information.

- Talk about what a Digital Footprint is.
- Explain what kind of information may be left on a digital footprint and how this could be used to identify them.
- Talk about how they are protected on Purple Mash in comparison to the wider web.
- Keep personal information private and stop posting information that may lead others to identify them.



Unit 2.3 – Spreadsheets

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Information Technology

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:

- There are specific features and purposes of a spreadsheet, and they can navigate around and enter data.

- Specific features in spreadsheets such as 2Calculate allow user to insert content such as images into a cell. The cells content can be locked or moved using additional features.

- The totalling tool counts all the cells behind the tool.

Procedural – By the end of the unit the students will know how to:

- Talk about the function of a spreadsheet and give examples.
- Enter numbers and words into a sheet.
- Navigate from cell to cell using the arrows or by clicking in the cell.
- Add background colour to cells.
- Explain what a row and column is in spreadsheets.
- Add a given image to a sheet or draw their own.
- Allocate a value to an image and then recap the use of the count tool.

- Select a cell where an image will be inserted.
- Locate the clipart library and add an appropriate image to a single cell.
- Select multiple cells to add repeated versions of the same image.
- Use the Move tool to move an image from one cell to another.

- Know what is meant by totalling numbers in a row or column.
- Know how to use the totalling tool.
- Practice using the totalling tool.



	<ul style="list-style-type: none"> Practically apply the knowledge to make a magic number square where the totalling tool automatically adds up rows and columns.
<ul style="list-style-type: none"> Spreadsheet can be used for calculations. 	<ul style="list-style-type: none"> Use the + and – to create simple formulas to calculate an amount. Work out if the coins presented in the sheet equal or don't equal a given amount.
<ul style="list-style-type: none"> Data in a spreadsheet table can be edited and used to create a block graph. 	<ul style="list-style-type: none"> Add a title to their chart, Label the columns in a table and enter data into it. Use the table data and graphing tool to create a block graph.



Unit 2.4 – Questioning

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Information Technology

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:	Procedural – By the end of the unit the students will know how to:
<ul style="list-style-type: none"> • Pictograms created through software or physically are of limited use beyond answering simple questions. 	<ul style="list-style-type: none"> • Create a class pictogram using 2Count. • Identify questions we can ask and find the information for on the pictogram. • Identify what questions we can't ask due to a pictogram being limited with the information it can provide.
<ul style="list-style-type: none"> • Information can be separated by using yes/no questions. 	<ul style="list-style-type: none"> • Create suitable yes/no questions for a collection of physical data such as avatars of children on individual paper records. • Can use yes/no questions to find individual paper records. • Can recognise that not all yes/no questions will work and you are limited with the information on individual records.
<ul style="list-style-type: none"> • A binary tree is a simple way of sorting information into two categories. When using a binary tree, users can only ask yes/no questions to find a specific piece of information. 	<ul style="list-style-type: none"> • Design a binary tree physically using paper to sort simple pieces of information such as animals or children. • Use a pre-populated binary tree program such as 2Investigate to find answers to yes/no questions.
<ul style="list-style-type: none"> • Databases are a computerised system that make it easy to search, select and store information. Databases contain records which have a variety of information about a specific entry. 	<ul style="list-style-type: none"> • Open a 2Investigate database. • Identify the records which make up a database. • Click on individual records. • Identify fields as pieces of information collected for a record.



- Users can search a database using simple and more complex search questions.

Reference given questions to find specific records that meet a search query by:

- Locating the find tool.
- Using the drop-down lists for record fields in the search tool.
- Combine more than one identifier such as 'has glasses' and 'brown hair'.



Unit 2.5 - Effective Searching

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Digital Literacy

- Recognise common uses of information technology beyond school.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:	Procedural – By the end of the unit the students will know how to:
<ul style="list-style-type: none"> • The Internet is a global network of connected computers around the World. 	<ul style="list-style-type: none"> • Answer questions accurately about what the Internet is by completing a quiz. • Explain the difference between the Internet and the World Wide Web, recognising that the World Wide Web is powered by the Internet.
<ul style="list-style-type: none"> • The World Wide Web refers to the documents and pages someone sees when using a browser. Websites can be found using a browser that contains a search engine. 	<ul style="list-style-type: none"> • Recognise a web browser. • Recognise a search engine and the key elements they contain. • With guidance, enter a search query in a search engine. • Review results from a search query. • Find the number of results for a query entered into a search engine. • With guidance, use some of the search tools on a search engine such as: all, images and news.
<ul style="list-style-type: none"> • Search engines use millions of people’s digital footprints to help provide more accurate results. 	<ul style="list-style-type: none"> • Review a search results page. • Discuss with others that a digital footprint is a record of individuals interactions online and that this is used to help search engines provide better results for individuals.



- To find results that we want on a search engine, we need to search effectively.

- Search using words.
- Search using questions.
- Compare using words to questions in a search engines results page.
- Share information about searching effectively by creating a leaflet for others.



Unit 2.6 – Creating Pictures

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Information Technology

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:	Procedural – By the end of the unit the students will know how to:
<ul style="list-style-type: none"> • Computer drawing programs contain palettes. Palettes are the range of colours or shapes available to the users. 	<ul style="list-style-type: none"> • Open 2Paint a Picture. • Select a painting effect. • Use the colour palette to select different colours.
<ul style="list-style-type: none"> • Computer drawing programs may have a choice of painting effects. Painting effects can be combined to help a user make pictures. 	<ul style="list-style-type: none"> • Explore the range of painting effects on offer in 2Paint. • Observe how the painting effects give different results. • Produce a range of paintings formed from different painting effects.
<ul style="list-style-type: none"> • The size of an onscreen painting tool brush stroke can be manipulated. 	<ul style="list-style-type: none"> • Select different colours for a painting tool. • Locate the changing scale brush tool slider. • Use the brush tool slider to change the size of brush strokes.
<ul style="list-style-type: none"> • Intensity of colours can be manipulated. 	<ul style="list-style-type: none"> • Identify the dilute tool. • Select a colour from the palette. • Experiment using the dilute tool to manipulate the intensity of any selected colour.



<ul style="list-style-type: none"> • Outline features in drawing programs help a user with the formation of paintings. 	<ul style="list-style-type: none"> • Identify the outline tool. • Select an outline of choice. • Resize an outline using the draggable blue squares. • Change the points on an outline by using the draggable green squares. • Paint within the outline. • Position the outline on the page where needed.
<ul style="list-style-type: none"> • Fill tools speed up the process of colouring enclosed areas on a painting. 	<ul style="list-style-type: none"> • Locate the fill tool. • Use the fill tool to place colour into enclosed areas on a drawing.
<ul style="list-style-type: none"> • Pattern tools can be used to create repeating patterns and manipulate how a pattern is arranged. 	<ul style="list-style-type: none"> • Locate the pattern template. • Draw within the square. • Change the arrangement of the pattern using the arrangement choice options. • Increase or decrease the size of the pattern and how often it is repeated by using the pattern slider.
<ul style="list-style-type: none"> • An eCollage template is available in programs like 2Paint that let's a user create stamps that can be used to add to a picture or build up a picture. 	<ul style="list-style-type: none"> • Select the eCollage template. • Draw within the square. • Combine drawing by using the clipart library.



Unit 2.7 – Making Music

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Information Technology

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:	Procedural – By the end of the unit the students will know how to:
<ul style="list-style-type: none"> • Music can be made digitally using programs like 2Sequence. 	<ul style="list-style-type: none"> • Open 2Sequence. • Listen to a premade composition by pressing the play button. • Observe what happens on the screen when composition is playing including the placement of sounds.
<ul style="list-style-type: none"> • Sounds can be incorporated into music programs to make a melody. 	<ul style="list-style-type: none"> • Open 2Sequence. • Explore the sounds and instruments category. • Drag sounds into the playable area. • Play and experiment with the organisation of sounds on each track.
<ul style="list-style-type: none"> • The speed of a digital musical composition known as tempo can be altered. 	<ul style="list-style-type: none"> • Locate the beats per minute slider. • Experiment with changing the slider’s position. • Listen in play mode to how changing the position of the slider affects a composition.
<ul style="list-style-type: none"> • The volume of instruments/sounds on a track can be changed when using music programs. 	<ul style="list-style-type: none"> • Locate each bar in a composition. • Locate the volume sliders for each bar. • Adjust the volume on individual bars. • Play the composition and test the effect of altering the volume of individual tracks.



<ul style="list-style-type: none"> • Additional features, such as changing the number of bars and looping a composition, are available in music programs. 	<ul style="list-style-type: none"> • Locate the bar selector. • Change the number of bars for a composition and observe how the composition changes when played. • Experiment with the looping feature. • Identify how this affects a composition. • Manipulate a composition so that it sounds correct when looping and doesn't have a noticeable jump when it restarts each repeat.
<ul style="list-style-type: none"> • Music programs let users incorporate their own sounds into a composition. 	<ul style="list-style-type: none"> • Locate the My Sounds section. • Click on the record icon. • Use the record button to incorporate own sound from a microphone. • Test the recording back by pressing play. • Click done when happy with recording.



Unit 2.8 – Presenting Ideas

NATIONAL CURRICULUM LINKS

Dominant strand for this unit: Information Technology

- Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

There will be elements from the other two strands due to the nature of the computing curriculum.

Declarative - By the end of the unit the students will know that:	Procedural – By the end of the unit the students will know how to:
<ul style="list-style-type: none"> • Digital content can be presented in many forms. 	<ul style="list-style-type: none"> • Compare a traditional book with an e-book and can talk about the differences. • Recognise digital concept maps and their use for organising ideas. • Discuss the differences between a traditional book, e-book, concept map and digital quiz including the advantages and limitations of each format.
<ul style="list-style-type: none"> • Quizzes can be made using programs such as 2Quiz. 	<ul style="list-style-type: none"> • Open 2Quiz. • Explore the front screen of 2Quiz and identify the key areas such as introductory screen, delete, clone, add questions, preview and play quiz. • Add a question type to 2Quiz. • Recognise some of the differences between question types.
<ul style="list-style-type: none"> • Digital content should be presented using a suitable format 	<ul style="list-style-type: none"> • Compare a digital mind map in 2Connect with a digital fact file in 2Publish. • Discuss and explain the two formats. • Identify the format that is of most use when presenting to an audience.



- Digital content in one format can be re-used in other formats to present to audiences

- Open a 2Connect file with information on it.
- Open a 2Publish file.
- Use the 2Connect file to support creating content in the 2Publish file.
- Use font tools, clipart, page settings and images to enhance digital content in the digital publishing file.

