Declarative and Procedural Knowledge

Year 1

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Introduction

The Declarative and Procedural Knowledge documents are designed to support teachers in understanding the intended learning outcomes of each unit. They outline the specific knowledge and skills that children should acquire and demonstrate by the end of their learning.

- Declarative Knowledge sets out what children will ***know***. This includes facts, concepts, definitions, and key ideas that form the foundation of the unit.
- Procedural Knowledge sets out what children will ***be able to do***. This focuses on the skills and processes children should develop and apply when using technology.

These documents are used to:

- Provide teachers with a clear overview of learning expectations for each unit.
- Ensure consistency of teaching and progression of knowledge and skills across year groups.
- Support planning, teaching, and assessment by highlighting the essential outcomes to focus on.
- Reinforce the balance between understanding (knowing) and application (doing) in computing.

This document aims to help teachers see the bigger picture of what children will learn, how they will apply it, and how these elements connect across the computing curriculum.

Introduction to Purple Mash

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Use technology safely and respectfully, keeping personal information private.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• It is important to log in to a site, the importance of keeping passwords safe and the need to log out at the end of a session.	• Access Purple Mash from home and school. • Log out of Purple Mash. • Give reasons why it is important to keep a password safe and not share it with other people.
• An avatar is a virtual representation of a person suitable for use online.	• Make and edit their own avatar.
• The 2Do system allows teachers to assign tasks to children within Purple Mash.	• Open 2Dos. • Save 2Dos. • Hand in 2Dos and communicate with their teacher via the 2Do.
• Online sites have a main page called the homepage.	• Access the Purple Mash homepage when on the site.
• Online sites often use an alert system to communicate with the user.	• Access alerts within Purple Mash.
• To move to a different activity in Purple Mash, you must first close the current activity.	• Close activities in Purple Mash.
• Many online sites, including Purple Mash, have an area for an individual's work that is accessible only to the individual (and in Purple Mash to their teacher as well).	• Access their work area. • Save work in their work area. • Locate and open work they have done previously in their work folder.
• To access Purple Mash programs, you use the Tools area.	• Open a specified tool.
• You can access non-visible parts of a screen using scrolling.	• Scroll up and down and from side to side where applicable.
• You can use a physical or on-screen keyboard to type upper and lower-case letters and spaces.	• Type upper and lower-case letters and spaces using the device available.

Creative Computing

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• Art can be created using digital tools.	• Select colours and painting effects in 2Paint. • Control a computer mouse. • Use a mouse or finger (device dependent) to perform tasks.
• Digital tools can be used to play and make simple games.	• Use drag and drop methods to complete games, including 2DIY jigsaws and placing activities. • Use the image gallery to create jigsaw images. • Use hotspots in 2DIY placing games.
• Purple Mash allows a user to share work for others to use on digital display boards.	• Share work to a Purple Mash Display Board. • Access shared work on a Purple Mash Display Board.

Data Explorers

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• Items can be grouped using a range of criteria, and a logical process should be used when doing so.	• Identify criteria that can be used to sort items into groups. • Sort items using criteria. • Logically sort items into groups.
• Digital tools can be used to group images of items.	• Complete grouping questions in 2Quiz using given criteria.
• Sorting is a way to organise items.	• Complete sequencing questions in 2Quiz using given sorting criteria.
• Sorting and grouping have different meanings.	• Decide whether it is better to sort or group items to organise them.
• Data is information that can be collected and used.	• Identify items to be grouped or sorted as examples of data that can be organised. • Use data grouping and sorting to answer questions.
• Data can be represented digitally using pictures.	• Create a pictogram using data from the class in 2Count. • Answer questions about the class using a pictogram.
• Before collecting data, you must think about how it can be used and what information to collect.	• Collect and record data. • Input the data into the 2Count tool. • Make a pictogram using 2Count. • Answer questions using the pictogram.

Creating and Following Instructions

National Curriculum Links	**Dominant objectives for this unit:** • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• To achieve a specific effect when building something, accurate instructions must be followed.	• Think carefully about how to word oral instructions to achieve a desired outcome. • Give clear, precise and concise instructions for someone to follow. • Test whether instructions have been followed by comparing the outcome to the instructions. • Examine instructions to see where confusion might have arisen.
• Computer programs need precise instructions to follow and these are called algorithms. • If instructions are vague, outcomes will vary for a given task.	• Use a computing device to follow simple instructions in a painting project. • Examine the outcomes of following instructions to check for differences in interpretation. • Decide whether any differences were due to the clarity of the instructions or the end user.
• The order of instructions for a task affects the results.	• Identify when a sequence of instructions is incorrect and why. • Explore the possible outcomes of following incorrectly sequenced instructions.
• Correcting errors in an algorithm or program is called debugging.	• Find errors in a simple algorithm. • Correct an algorithm sequence by re-ordering it. • Recognise when an algorithm has been debugged. • Apply learning about debugging an algorithm to other incorrectly sequenced instructions, such as baking cakes.

Animated Stories

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• There are differences between traditional books and digital books.	• Identify differences and similarities between traditional books and digital books.
• Images can be created within digital book software.	• Use the painting tools within 2Create a Story. • Use picture editing tools such as 'undo' and the 'eraser' to improve created images.
• Digital books can have animations.	• Apply animation effects to images in 2Create a Story. • Choose effects that make characters appear to interact.
• Copying and pasting is a term used in computing when things are copied from one place to another.	• Copy and paste in 2Create a Story. • Organise and copy pages in a digital book.
• Audio such as sound effects, voice recordings and music can be included within digital books.	• Record sound for 2Create a Story pages. • Insert sound effects and music into a 2Create a Story book.
• Backgrounds are static images in contrast to the animated foreground.	• Add backgrounds to 2Create a Story pages.
• The style of digital text is called the font. This can be changed after typing the text.	• Change the font and size of typed text.

Coding

National Curriculum Links	**Dominant objectives for this unit:** • 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.

Declarative - By the end of the unit, the children **will know that**:	**Procedural** – By the end of the unit, the children **will know how to**:
• Computer programs work by following instructions called algorithms. These are written as computer code that the computer can interpret.	• Create instructions in the form of simple algorithms with attention to the order and the level of detail. • Interpret what a piece of code means.
• In 2Code, code is created using coloured code blocks.	• Recognise object code blocks in 2Code are light blue. • Recognise action code blocks in 2Code are dark blue. • Recognise event code blocks in 2Code are green. • Recognise output code blocks in 2Code are purple.
• Code view is the place in 2Code where you see and use the blocks of code.	• Switch to code view. • Code blocks are dragged into the coding area to create commands.
• Each single instruction such as 'Object Right' is called a command.	• Understand how code blocks fit together to create a command. • Make a simple command in 2Code by using an object and action together.
• To make an algorithm happen, you must execute, or run, the code.	• Execute the code to see the effect by clicking Run.
• An event is something that makes a block of code run in response to an action such as a user pressing a key or clicking a screen.	• Use the 'When Clicked' event code block. • Position a command inside a 'When Clicked' event code block. • Give an object an action that occurs when it is clicked. • Test 'When Clicked' events.
• Debugging is the name for fixing code that isn't working how it was designed to work.	• Begin to use logical reasoning to find where bugs in the code are. • Fix bugs in code. • Test whether bugs have been fixed.

• The look of a program in 2Code is created in the Design View using backgrounds and objects.	• Switch to design view. • Choose background images. • Add objects and modify some attributes such as scale.
• Program design is the first stage to making a well thought out program.	• Plan what objects in a scene will do. • Recognise that this is the algorithm for the program. • Use own design to code a program. • Debug the program against the design specifications.

Technology Around Us

National Curriculum Links	**Dominant objectives for this unit:** • Recognise common uses of information technology beyond school. • Use technology safely and respectfully.

Declarative - By the end of the unit the children **will know that**:	**Procedural** – By the end of the unit the children **will know how to**:
• Technology is something that uses scientific knowledge to solve problems or invent useful tools.	• Recognise examples of technology. • Describe the purpose of common types of technology.
• Technology is used within many environments.	• Identify technology within school, at home and in the wider world. • Explain how this technology is helpful.
• Not all technology is digital technology. Digital Technology is a subset of technology for sharing information.	• Give examples of digital technology and contrast this with technology.
• The word hardware is used to describe the physical parts of a digital technology device.	• Name examples of technology hardware including peripheral devices.
• It is important to use technology safely and that there are some risks associated with the use of technology.	• Use devices safely. • Point out the risks of situations involving technology.

Making Beats

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Declarative - By the end of the unit the children **will know that**:	**Procedural** – By the end of the unit the children **will know how to**:
• There are differences between music played using musical instruments and digitally created music.	• Identify differences and similarities between music played using instruments and digitally composed music.
• Digital tools such as 2Explore and 2Beat can be used to compose music.	• Compose a melody using 2Explore. • Select sounds from the available libraries. • Compose a beat using 2Beat.
• Digital music tools can be used to change aspects of the composition.	• Use digital music tools to change the tempo, volume, looping and length of music compositions.
• Digital music tools can be used to create the sound of multiple instruments at once.	• Use 2Beat to compose an interaction of different instrument sounds.
• Different digital tools are better for different purposes.	• Select the best music tool for their compositions.