Declarative and Procedural Knowledge

Year 2

Contents

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 is used to set work for 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 one.	• 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 provided.

Route Explorers

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**:
• The combination of a direction and a distance is known as a command in 2Go.	• Input commands in 2Go.
• Commands can be input into 2Go to control the movement of a screen turtle in four directions.	• Input purposeful commands in 2Go to move the turtle in a specific direction towards a goal.
• Planning a route is important in order to input the correct commands.	• Use techniques such as finger movements to plan a route.
• Routes can be programmed to perform more than one command in a sequence.	• Input several commands into a sequential algorithm layout and run this code to move the turtle along a programmed route. • Reset the turtle to the starting position to re-run the code.
• A list of instructions for a route is the algorithm.	• Plan the route by writing the algorithm first and then inputting the commands.
• Errors (bugs) occur because commands may have been input incorrectly. • Fixing the errors is called debugging.	• Make logical attempts to debug code for routes. • Reset, debug and re-run the code to test routes.

The Internet

National Curriculum Links	**Dominant objectives for this unit:** • Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Recognise common uses of information technology beyond school.

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**:
• The Internet is a global network of connected computers around the world.	• Explain the difference between the Internet and the World Wide Web, recognising that they describe different things.
• An internet connection allows people to communicate with others over the internet and that this is commonly known as being online. • An internet connection can be made using wires or wirelessly.	• Explain that Wi-Fi describes a wireless internet connection.
• A browser is used to access websites and webpages of the World Wide Web.	• Recognise a web browser.
• The World Wide Web refers to the documents and pages someone sees when using a browser.	• Find information on a school's website by viewing different webpages.
• Smart devices are those that can connect to the internet to do more than a basic function.	• Decide whether a device is a smart device. • Give examples of smart devices.
• The 'front page' of a website is known as the home page.	• Navigate to the Purple Mash homepage and to a school's website homepage.
• Webpages have links that, when clicked, display other webpages.	• Use a link on a webpage of a school's website.
• Websites can be found using a browser that contains a search engine.	• Use keywords to search for information using a search engine.

Creating Pictures

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**:
• Digital art tools usually have a choice of painting effects. • Painting effects can be combined to help a user make pictures of varying styles.	• Explore the range of painting effects in 2Paint. • Observe how the painting effects give different results. • Produce digital images in traditional art styles using digital painting effects.
• The size of an onscreen painting tool brush stroke can be manipulated.	• Use the brush tool slider to change the size of brush strokes to achieve the desired effects.
• Intensity of colours can be manipulated digitally.	• Use the dilute tool to manipulate the intensity of any selected colour.
• Outline features in a digital art program can help a user compose an image.	• Make use of outline features, such as selecting, resizing, and editing outlines, to enhance their digital art.

Spreadsheets

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**:
• A spreadsheet is a program that organises data in rows and columns. • 2Calculate is a type of spreadsheet program. • Each box in a spreadsheet is called a cell, and every cell has a unique name. • Rows run horizontally, and columns run vertically.	• Identify a cell by its name. • Enter data into a cell and move between cells with ease. • Explain the difference between a row and column.
• Formatting tools can be used to change the way data looks (e.g. size, colour, wrap text). • It is important to consider the clarity of a spreadsheet and what can be done to improve this.	• Resize rows and columns to make data clearer. • Use formatting tools such as the cell colour picker, wrap text, and bold buttons to improve clarity and organisation of data. • Check and improve their spreadsheet to ensure it is neat, accurate, and easy to understand.
• Images and numbers can be used in spreadsheets, and values can be assigned to images.	• Insert images and assign them numerical values.
• Spreadsheets can use a range of mathematical operations to carry out calculations automatically.	• Apply calculation tools (add, subtract, multiply, divide) to carry out various operations in a spreadsheet.
• 2Calculate contains various tools that can be used for different reasons. • The 'Is Equals' tool can check if a calculation is correct. • The 'Quiz' tool can be used to make interactive questions inside a spreadsheet. • The 'Count' tool can show how many of something there are in a spreadsheet.	• Use the 'Is Equals' tool to check whether a calculation is correct. • Use the 'Quiz' tool to create an interactive calculation. • Use the 'Count' tool to total how many of an item appear in a spreadsheet.
• Block diagrams are a way of presenting data to make it easier to understand. • Two sets of data are needed to create a block diagram (one for the category, one for the amount).	• Create block diagrams in 2Calculate to present data visually.

Questioning

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**:
• Data is information that can be collected, recorded, and presented in different ways.	• Collect simple data by asking questions and recording answers.
• A tally chart is a method of counting and recording data. • Pictograms and bar charts are ways of presenting data visually.	• Use tally charts to organise collected data.
• Closed questions can limit responses, while open questions allow more detailed answers.	• Create pictograms and bar charts using 2Count to represent information.
• Yes/No questions can be used to help sort and classify information.	• Form clear Yes/No questions to help identify or sort objects.
• A branching database uses Yes/No questions to organise and identify information.	• Follow a branching database to find an answer. • Use 2Question to navigate and explore branching databases.