Declarative and Procedural Knowledge

Year 4

Contents

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 develop an 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 how to search 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.

Introduction to Purple Mash

National Curriculum Links	Dominant objectives for this unit: Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

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:
• 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 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.

Unpacking Hardware and Software

National Curriculum Links	Dominant objectives for this unit:
	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

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:
• Technology describes using scientific knowledge to design and make tools, systems or machines that help solve problems or make tasks easier.	• Identify whether an item is an example of technology.
• Electrical, digital and smart technology are sub-sets of technology.	• Decide whether an item is an example of electrical, digital or smart technology.
• Hardware describes the physical parts of a computer.	• Define what is meant by hardware, components and peripherals. • Name hardware components of a computer system. • Describe the function of these different parts.
• Software describes the programs that instruct a computer to complete computational tasks.	• Identify the functions and common components of different software tools and relate them to the tasks those tools perform.
• Software and hardware operate together to follow processes that assist in completing tasks.	• Describe a process in terms of inputs, hardware and software processing and outputs.

Animation

National Curriculum Links	Dominant objectives for this unit:
	• Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

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:
• Some animations are created by hand and others with the help of technology.	• Describe how hand drawn animation is created. • Make a simple flick animation book. • Contrast the process of animating by hand to the use of animation technology.
• Animation software has specific functions that support the animation of still images such as static backgrounds, onion skinning and copying frames.	• Use 2Animate to make simple animations using the specific animation functionality.
• Choices of sound effects, their timing and frames per second settings can enhance an animation	• Choose appropriate sound effects and speeds for animations.
• Storyboarding is a process that supports planning an animation.	• Use storyboarding to plan an animation.

Logo

National Curriculum Links	Dominant objectives for this unit:
	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

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:
• Logo is a text-based coding language in which commands are written to control the movement of a screen turtle.	• Input commands in the Logo tool to make the turtle move in a particular direction towards a goal.
• Commands in Logo consist of directional or rotational commands that include a direction and a distance in spaces or degrees, and operational commands that alter how the output looks or how the code runs.	• Input directional commands (FD, BK, RT, LT) and more abstract, non-directional commands (such as PU and PD).
• Spacing of commands in Logo is important	• Space commands correctly and debug with a consideration for spacing when errors occur.
• Visual effects can be achieved by using the PU, PD, SETPC and SETPS commands.	• Alter line properties to explore visual effects. • Use the line commands to achieve desired visual effects from the code.
• Logo commands can be repeated a set number of times using the repeat command.	• Identify where the repeat command would be an efficient coding structure to use. • Create regular shapes using the repeat command. • Anticipate the effect of the repeat when used in example code.
• A procedure is a named set of Logo commands that will be run in the program when referred to by name.	• Write and save Logo procedures. • Call the procedures within their code. • Consider how best to use procedures to make their code efficient.
• Errors (bugs) occur because commands have been input incorrectly. • Fixing the errors is called debugging.	• Make logical attempts to debug Logo code. • Make use of multi-line mode for more complex code to enable easier debugging.