COMPUTING YEAR 3/4

What I will know by the end of the key stage

I will design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.

I will use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

I will use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

I will understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.

I will use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

I will 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.

I will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Skills I may use from other subjects

Maths: Use my knowledge of measurement, graphs and tally charts.

Literacy: I can use my reading and comprehension skills to further my knowledge.

Science: Use my knowledge of observations and collecting data.

Key Skills I will learn and use

I will be able to analyse problems.

I will give opinions and respond to ideas.

I will ask questions and discuss with my peers.

I will gain an understanding of the principles and concepts of computer science.

Key Computing Concepts

Predominant Area of Computing*		
🟥 Computer Science	🟦 Information Technology	🟨 Digital Literacy

*Most units will include aspects of all strands.

What I will learn by the end of the units:

Writing for different audiences
To explore how font size and style can affect the impact of a text.
To use a simulated scenario to produce a news report.
To use a simulated scenario to write for a community campaign.

Logo
To learn the structure of the language of 2Logo.
To input simple instructions in 2Logo
To use 2Logo to create letter shapes
To use the Repeat command in 2Logo to create shapes
To use and build procedures in 2Logo.

Animation
To decide what makes a good, animated film or cartoon and discuss favourite animations.
To learn how animations are created by hand.
To find out how 2Animate animations can be created in a similar way using technology.
To learn about onion skinning in animation.
To add backgrounds and sounds to animations.
Introducing 'stop motion' animation.
To share animation the class blog.

Opportunities for teaching diversity, equality and expanding cultural capital:
A visit to a local museum of computing.
Significant people – Computing pioneers embedded in subject journey.
E-safety champions
Internet Safety Day
Computing club

What I should already know - Understand selection in computer programming. • Understand how an IF statement works. • Understand how to use co-ordinates in computer programming. • Understand the 'repeat until' command. • Understand how an IF/ELSE statement works. • Understand what a variable is in programming. • Use a number variable. • Create a playable game.

Understand how children can protect themselves from online identity theft. • Understand that information put online leaves a digital footprint or trail and that this can aid identity theft. • Identify the risks and benefits of installing software including apps. • Understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. • Identify appropriate behaviour when participating or contributing to collaborative online projects for learning. • Identify the positive and negative influences of technology on health and the environment. • Understand the importance of balancing game and screen time with other parts of their lives.

Format cells as currency, percentage, decimal to different decimal places or fraction. • Use the formula wizard to calculate averages. • Combine tools to make spreadsheet activities such as timed times tables tests. • Use a spreadsheet to model a real-life situation. • Add a formula to a cell to automatically make a calculation in that cell.

Recall and Remember!

Add information to your knowledge mind map regularly to help you to reflect on, and remember what you have learnt throughout the unit. At the end of the unit, work in a small group to create a fun quiz on purple mash for your friends to complete! Alternatively, have a go at the Purple Mash Quizzes for these units online!

Unit: 4.4
Writing for Different Audiences

Key Learning

- To explore how font size and style can affect the impact of a text.
- To use a simulated scenario to produce a news report.
- To use a simulated scenario to write for a community campaign.

Key Resources

purple mash

2Publish Plus

2Simulate

Key Images

A

Text Toolbar. Click here to format your text.

Key Vocabulary

Campaign
An organised course of action to achieve a goal.

Format
The way in which something is arranged or set out.

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

Genre
The style or category type of a piece of art, music or writing.

Opinion
A view or judgment someone forms about something, not always based on fact.

Reporter
A person who reports news or conducts interviews for the press or broadcasting media.

Viewpoint
The way someone sees or thinks about something.

Key Questions

Why should I change the font when I am writing?
Changing the appearance of the font can help make things easier to read and highlight important parts of the text.

Unit: 4.5
Logo

Key Learning

- To learn the structure of the coding language of Logo.
- To input simple instructions in Logo.
- Using 2Logo to create letter shapes.
- To use the Repeat function in Logo to create shapes.
- To use and build procedures in Logo.

Key Resources

purple mash

2Logo

Key Questions

What is Logo?
Logo is a text-based coding language used to control an on-screen turtle to create mathematical patterns.

Key Vocabulary

Debugging
The process of identifying and removing errors from computer hardware or software.

LOGO Commands (e.g FD, BK, RT, LT)
A list of commands inputted into 2Logo to move the turtle around the screen.

Pen Up
Raises the screen pen so the 2Logo turtle doesn't draw on screen.

Grid
The template around which the 2Logo turtle moves.

Multi Line Mode
Type several lines of commands in the text area.

Prediction
When you say what is going to happen when you run the instructions.

LOGO
A text-based coding language used to control an on screen turtle to create mathematical patterns.

Pen Down
Lowers the screen pen so the 2Logo turtle draws a line on the screen.

Procedure
Pieces of Logo text with a procedure name that can be run by calling them by name. Saves time if you want to print to screen lots of the same shape.

Key Vocabulary

Repeat
A set of instructions that is run a specified number of times.

Run Speed
The speed at which the 2Logo turtle moves around the screen.

SETPC
Set pen colour to a given colour.

SETPS
Set the thickness of the pen's line.

Unit: 4.6
Animation

Key Learning

- To discuss what makes a good animated film or cartoon.
- To learn how animations are created by hand.
- To find out how animation can be created in a similar way using the computer.
- To learn about onion skinning in animation.
- To add backgrounds and sounds to animations.
- To be introduced to 'stop motion' animation.
- To share animation on the class display board and by blogging.

Key Resources

purple mash

2Animate

Key Vocabulary

Animation
The process of adding movement to still objects.

Onion Skinning
A process where the shadow image of the previous frame is present to help you line up the objects of the animation correctly.

FPS (Frames Per Second)
The number of frames played per second.

Pause
To temporarily stop the animation.

Frame
A single image in an animation.

Stop motion
A technique whereby the camera is repeatedly stopped and started, for example to give animated figures the impression of movement.

Key Questions

What is an animation?
Animation is the process of giving the illusion of movement to drawings, models, or inanimate objects. Animated motion pictures and television shows are highly popular forms of entertainment.

What is meant by onion skinning?
Onion skinning is a 2D computer graphics term for a technique used in creating animated cartoons and editing movies to see several frames at once.

What is meant by stop motion animation?
Stop motion animation is a filming technique in which objects (such as clay models) are photographed in a series of slightly different positions so that the objects seem to move.