

VOCABULARY

Blocks: There are different types of action blocks in Scratch that change your sprite (object or character) E.g motion blocks, input blocks, forever blocks, costume blocks,

-Control block: Uses timings, e.g. wait, stop, set speed or repeat

-End blocks: Ends the script, directs it to another page or uses forever loop

-Event blocks- control events and the triggering of scripts

-Looks blocks: control how a sprite looks or what it says

-Motion Blocks: control a Sprite's movement.

-Sound blocks: control sounds

-Triggering blocks: Variety of blocks to begin a type of code

Code: A set of instructions used for different programs

Commands: A single part of a program. It tells the computer to do one action. A command may be one line or several lines long

Debug: To find and remove errors from computer hardware or software.

Execute: Run a program,press go, start the algorithm or instructions

Loops: part of a command that repeats

Program: a stored set of instructions put into the computer in a language understood by the computer that does some form of thinking and then creates an outcome

Sequence: to place programming instructions in order

Script: A short program that is usually written for one task. Often used to create repetitive tasks to save time

Sprite: An object, image or character in Scratch Jnr that can be controlled using commands



COMPUTING KNOWLEDGE MAT

YEAR 5 COMPUTER SCIENCE

MAIN IDEA

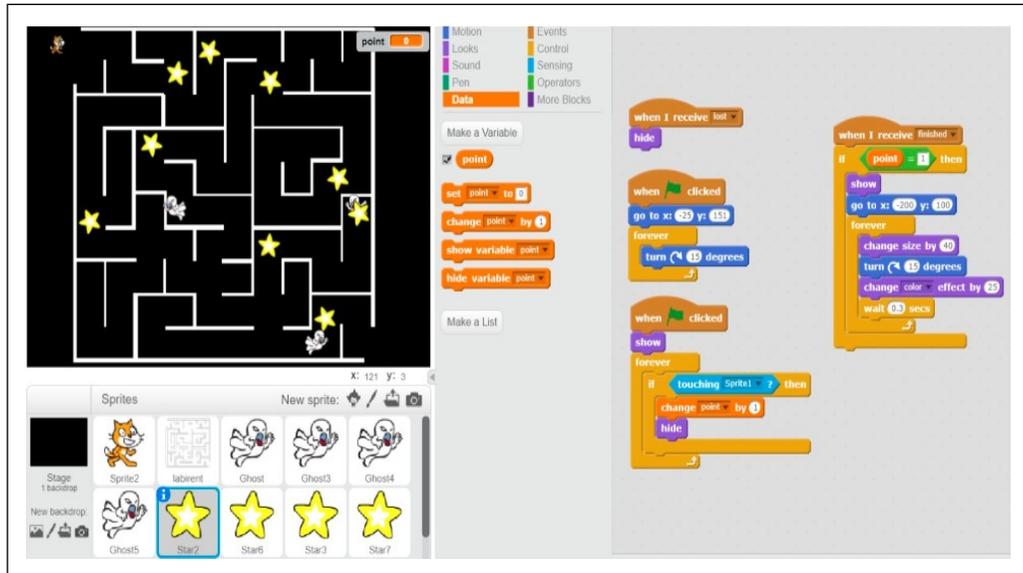
Pupils will design, write and debug a space maze game, incorporating their scientific knowledge and learning about the key features of maze games. Pupils will be able to import and create their own backgrounds and sprites to suite their game.

WHAT CAME BEFORE

Year 4—To create a simple animation based a period of Egyptian history

WHAT COMES NEXT

Year 6— To create a maths multiple choice quiz game



WHAT YOU SHOULD ALREADY KNOW

- How to create a simple animation
- How to personalise your own backgrounds and sprites
- How to reduce to find shortcuts to reduce the amount of code used

KEY LEARNING

Pupils will design, write and debug a space theme maze game, reflecting their science knowledge of space.

In this unit, pupils will create and import their own space background which could include planets, stars, rockets etc. They will use their mathematical knowledge of angles and degrees to enable their sprite (character) to move and turn.

Pupils will have to make decisions about what happens to their sprite if they hit a wall. It might lose points or go back to the beginning. These decisions will be reflected in their code.

Pupils will need to evaluate their game, work out if it runs smoothly and effectively and how improvements can be made to make a more efficient game.

Pupils will investigate how they can reduce the amount of code used by using loops and shortcuts.

INVESTIGATE / QUESTIONS

- What will happen if I change the numbers in the X or Y box?
- How can I change...?
- What will happen to my game if I..?

VOCABULARY

Device: The name used for a small piece of equipment (smart phone, tablet, printer etc)

Hard Drive: Memory and data storage for a device

Hub: A device which ensures all other devices on a network receive information

Internet: A world-wide connection of computers connected by communication links. There are many services available such as email and the World Wide Web.

Local Area Network (LAN) : Links computers and devices (e.g. printers) in a building or group of buildings. Brecknock School has its own LAN.

Modem: A piece of equipment that connects a device to the internet.

Network: A group of computers that are joined together by communication links. They can share data and software as well.

Operating System: software which manages applications on the computer

Packet Switching: process by which data is transferred speedily on the internet by being broken down into millions of smaller pieces of data and then reassembled to the correct device

Router: Links the internet and rest of the network and tells information where to go

Server: A large storage system that has individual folders as well as shared folders that everyone can access. It is also linked to printers and scanners.

Switch: Joins parts of the network together.

Website: A collection of web pages that are hosted on the same server.

Wired Connection: A connection made using wires.

Wireless Connection: A connection made without wires.

World Wide Web (WWW). : The world wide web is made up of all the web pages in the world connected through the internet.



COMPUTING KNOWLEDGE MAT 2

YEAR 5 COMPUTER SCIENCE

MAIN IDEA

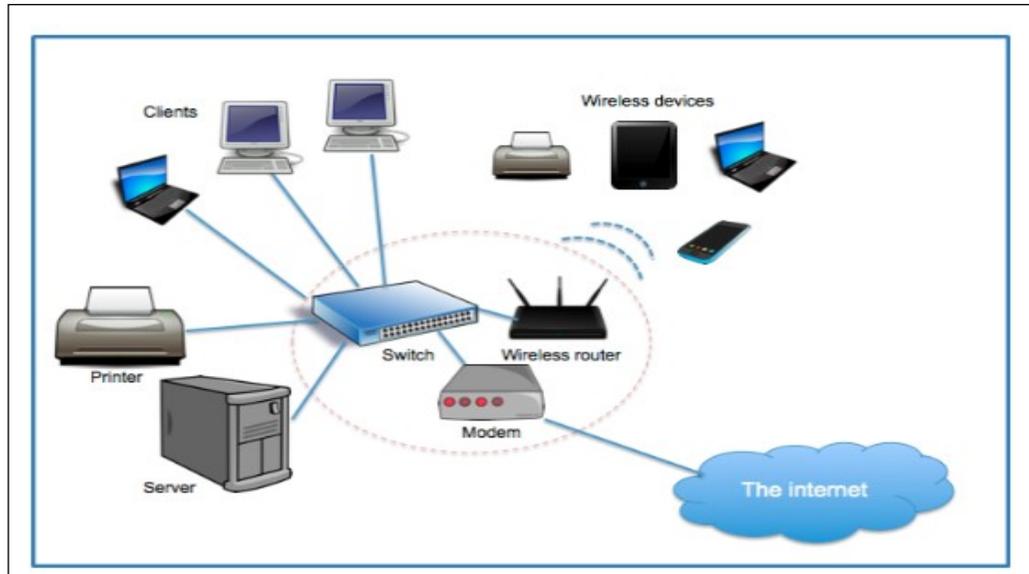
Pupils will understand what a computer network is and the differences between Local Area Networks and much larger ones. They will investigate how information is stored, retrieved and sent across different networks.

WHAT CAME BEFORE

Year 4— Pupils will have looked briefly at computer networks and the different available types

WHAT COMES NEXT

Year 6— Pupils will look at how search engines are used and ranked.



WHAT YOU SHOULD ALREADY KNOW

- Can name different types of devices
- Can identify the difference between input and output devices
- That computers and other devices are linked together to create a 'network'

KEY LEARNING

Pupils will learn that a computer network is a group of computer systems and other computing hardware devices that are linked together through communication channels. These include: wireless devices, servers, printers and the internet. All of these have a common source whether that be a modem, switchboard or wireless router.

Pupils will look at all the different components that make up a network and the different function of each part.

Pupils will investigate how information is sent across a network

Pupils can identify the difference between the internet and the *world wide web*. They will identify a range of different web browsers that can be used to look at web pages.

INVESTIGATE / QUESTIONS

- How is information sent and received?
- What components do I need to have a working network?
- What is the purpose of...

VOCABULARY

CTRL: A shortcut key on the keyboard

Cell: The smallest part of the spreadsheet. It can hold one piece of data.

Columns: A vertical set of cells

Data: The facts or figures that you want saved into your spreadsheet.

Database: The name for the collection of data you need.

Rows: A row is a horizontal group of cells.

Spreadsheet: The overall sheet of data. It can be used to organise and sort data.

Import: to bring information in from another file

Page Orientation: How you want the page to be viewed, landscape or portrait

Toolbar: Where all of the options to edit your work are

Main Toolbar Options:

- **File:** The toolbar for opening, saving and printing the document
- **Home:** toolbar for most style options such as; font, sizing, bold, underline,
- **Insert:** Options to put additional features into the page such as shapes, text box, borders,
- **Page Design:** Main layout of the page including: orientation, margins and size
- **View:** How close or far away you want to see your work. You can select 'whole page' or use the % number box to zoom in or out



COMPUTING KNOWLEDGE MAT

YEAR 5 INFORMATION TECHNOLOGY

MAIN IDEA

Pupils will use Microsoft Excel to collect and store data in a table. They will learn to reorganise and present this data in a number of ways according to their requirements. They will begin to use formulas and will present their data in graphs and tables

WHAT CAME BEFORE

Year 4– Creating content using Microsoft Word and Publisher

WHAT COMES NEXT

Year 6– Presenting information using Microsoft Powerpoint

The image shows the Microsoft Excel application window. At the top is the ribbon with tabs for FILE, HOME, INSERT, PAGE LAYOUT, FORMULAS, DATA, REVIEW, and VIEW. Below the ribbon are various toolbars for Clipboard, Font, Alignment, and Number. The formula bar shows 'A1' and a plus sign. The spreadsheet grid is visible with columns A through I and rows 1 through 6. Cell A1 is selected and highlighted in green. A blue arrow points to cell A1 with the text 'This is a cell'.



KEY LEARNING

Pupils will apply all previous knowledge of Microsoft programs when learning about 'Excel'. The layout of the toolbars include all previous tools in the same place, with additional options 'Data' and 'Formulas' specifically for excel.

Pupils will learn how to enter data into different cells, format them and use basic functions such as SUM. They will also use the 'sort' function to reorganise their data.

Pupils will represent their data in different ways using a variety of graphs and representations.

Key Formulas and Functions:

The formula is the whole calculation starting with an equal sign. The function is the pre-programmed formula.

=SUM(A1:A20) This will add up the data in the selected in cells A1 to A20.

=AVERAGE(A1:A20) This function gives the average of the numbers in cells A1 to A20.

=MIN (A1:A20) This will tell you which piece of data in those cells has the smallest value - useful when dealing with lots of information

=MAX (A1:A20) This will tell you which piece of data in those cells has the largest value.

WHAT YOU SHOULD ALREADY KNOW

- Can open, save, edit and reopen documents using Publisher
- Can use a range of tools and shortcuts manipulate images including rotating and cropping
- Can identify the different uses and benefits of Microsoft Word vs Microsoft Publisher

INVESTIGATE / QUESTIONS

Which formula helps me to..?

Which is the best way to represent this data?

How can sorting the data help me to understand it better?