

What is a Computer?

Year Two Knowledge



The difference between a desktop and a laptop computer.



People control technology.



Some input devices that give a computer an instruction about what to do (output).



Computers often work together.

Key vocabulary

battery	buttons	computer
desktop	electricity	input
invention	keyboard	laptop
mouse	output	robot
screen (monitor)	tablet	technology
wire		

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Name some computer peripherals and their functions.
- ✓ Recognise that buttons cause effects.
- ✓ Explain that technology follows instructions.
- ✓ Recognise different forms of technology.
- ✓ Design an invention which includes inputs and outputs.
- ✓ Explain the role of computers in the world around them.

What is a Computer?

Year Two Skills



Understanding what a computer is and that it is made up of different components.



Recognising that buttons cause effects and that technology follows instructions.



Learning how we know that technology is doing what we want it to do via its output.



Using greater control when taking photos with cameras, tablets or computers.



Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts.



Using word processing software to type and reformat text.



Assembling instructions into a simple algorithm.



Programming a floor robot to follow a planned route.



Creating and labelling images.



Learning how computers are used in the wider world

Algorithms and Debugging

Year Two Knowledge



To understand what machine learning is and how it enables computers to make predictions.



To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.



To know that abstraction is the removing of unnecessary detail to help solve a problem.



Using greater control when taking photos with cameras, tablets or computers.

Key vocabulary

Abstraction
Algorithm
Artificial intelligence
Bug
Clear
Correct
Data
Debug
Decompose
Error
Key features
Loop
Predict
Unnecessary

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Decompose a game to predict the algorithms.
- ✓ Give a definition for 'decomposition'.
- ✓ Write clear and precise algorithms.
- ✓ Create algorithms to solve problems.
- ✓ Use loops in their algorithms to make their code more efficient.
- ✓ Explain what abstraction is.

Algorithms and Debugging

Year Two Skills



Developing confidence with the keyboard and the basics of touch typing.



Articulating what decomposition is



Decomposing a game to predict the algorithms used to create it.



Learning that there are different levels of abstraction.



Explaining what an algorithm is.



Following an algorithm.



Creating a clear and precise algorithm.



Learning that programs execute by following precise instructions.



Incorporating loops within algorithms.



Using logical thinking to explore software, predicting, testing and explaining what it does.



Using an algorithm to write a basic computer program.



Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts.

Word Processing

Year Two Knowledge



To know that touch typing is the fastest way to type.



To know that I can make text a different style, size and colour.



To know that “copy and paste” is a quick way of duplicating text.

Key vocabulary

back button	backspace	bold
copy	copyright	cut
delete	forward button	highlight
image	import	italic
keyboard	keyboard shortcut	layout
navigate	paste	redo
search	space bar	text
text effects	touch typing	underline
undo	word processing	

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Explain which are the home row keys and how to find them for typing.
- ✓ Use the spacebar and backspace correctly.
- ✓ Type and make simple alterations to text using buttons on a word processor.
- ✓ Search for, import and alter appropriate images for a text document.
- ✓ Modify text in a document.
- ✓ Use copy and paste to copy text from one document to another.
- ✓ Explain what information is safe to be shared online.

Word Processing

Year Two Skills



Developing confidence with the keyboard and the basics of touch typing.



Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts.



Using word processing software to type and reformat text.



Searching for appropriate images to use in a document.



Understanding what online information is.



Identifying whether information is safe or unsafe to be shared online.

Scratch Junior Programming

Year Two Knowledge



To know that coding is writing in a special language so that the computer understands what to do.



To understand that the character in ScratchJr is controlled by the programming blocks.



To know that you can write a program to create a musical instrument or tell a joke.

Key vocabulary

Algorithm	Animation	Blocks
Bug	Button	CGI
Computer code	Code	Debug
Fluid	Icon	Imitate
Instructions	Loop	'On tap'
Programming	Repeat	ScratchJR
Sequence	Sound recording	

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Explore a new application independently.
- ✓ Explain what the blocks on ScratchJr do and use them for a purpose.
- ✓ Recognise a loop in coding and why it is useful.
- ✓ Use a code to create an animation of an animal moving.
- ✓ Use code to follow *and* create an algorithm.
- ✓ Program code to run 'on tap'.
- ✓ Explain the role of the blocks in a program they have created.

Scratch Junior Programming

Year Two Skills



Recognising that buttons cause effects and that technology follows instruction



Explaining what an algorithm is.



Following an algorithm.



Creating a clear and precise algorithm.



Learning that programs execute by following precise instructions.



Incorporating loops within algorithms.



Using logical thinking to explore software, predicting, testing and explaining what it does.



Using an algorithm to write a basic computer program.



Using loop blocks when programming to repeat an instruction more than once.



Using software (and unplugged means) to create story animations.

Stop Motion



Year Two Knowledge



To understand that an animation is made up of a sequence of photographs.



To know that small changes in my frames will create a smoother looking animation.



To understand what software creates simple animations and some of its features e.g. onion skinning.

Key vocabulary

Animate	Animation	Animator
Background	Decompose	Digital camera
Duration	Flipbook	Focus
Frames	Import	Moving images
Object	Onion skinning	Plan
Save	Still images	Upload

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Create a flip book animation.
- ✓ Take clear, in-focus photographs using a digital camera.
- ✓ Upload images from the school network.
- ✓ Decompose a story into smaller parts to plan a stop motion animation.
- ✓ Create stop motion animations with small changes between images.

Stop Motion



Year Two Skills



Using greater control when taking photos with cameras, tablets or computers.



Using logical thinking to explore software, predicting, testing and explaining what it does.

Data Handling: International Space Station

Year Two Knowledge



Simple data can be entered into a spreadsheet.



What steps are needed to take to create an algorithm.



What data to use to answer certain questions.



Computers can be used to monitor supplies.

Key vocabulary

algorithm	astronaut	column
data	digital content	essential
experiment	Goldilocks zone	interactive map
International Space Station	input	monitor
row	satellite	sensor
space	spreadsheet	survival
temperature	thermometer	

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Describe and explain how astronauts' survival needs are met aboard the ISS.
- ✓ Identify and digitally draw items which fulfil basic human needs when aboard the ISS.
- ✓ Read the correct temperature on a thermometer.
- ✓ Design a display showing everything that needs to be monitored by sensors on the ISS.
- ✓ Create an algorithm that addresses all plants' needs.
- ✓ Explain how space exploration can benefit life on Earth.
- ✓ Read data to identify whether a planet might be habitable.

Data Handling: International Space Station

Year Two Skills



Developing confidence with the keyboard and the basics of touch typing.



Creating and labelling images.



Collecting and inputting data into a spreadsheet.



Interpreting data from a spreadsheet.



Learning how computers are used in the wider world.

Online Safety



Year Two Knowledge



To understand the difference between online and offline.



To understand what information I should not post online.



To know how to create a strong password.



To know that you should ask permission from others before sharing about them online and that they have the right to say 'no.'



To understand that not everything I see or read online is true.

Unit outcomes

Pupils who are **secure** will be able to:

- ✓ Explain what is meant by online information.
- ✓ Recognise what information is safe to be shared online.
- ✓ Explain why we need passwords and what makes a strong password.
- ✓ Understand that they need to ask permission before sharing content online and explain why.
- ✓ Understand that they have the right to deny their permission to information about them being shared online.
- ✓ Say who they can ask for help with online worries.
- ✓ Use some strategies to work out if online information is reliable or not.

Key vocabulary

accepting	consent	denying permission
fake	giving permission	offline
online	password	permission
personal information	pop-up	pressure
private information	real	reliable
sharing online	source	trusted adult

Online Safety



Year Two Skills



Identifying whether information is safe or unsafe to be shared online.



Learning how to create a strong password.



Learning to be respectful of others when sharing online and ask for their permission before sharing content.



Learning strategies for checking if something they read online is true.



Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable.