Computing – Year EYFS Learning Objectives – Spring 1

Computer Systems and Networks:

Using a Computer

Lesson 1: Keyboards	Lesson 2: Logging In and Out	Lesson 3: Mouse Control	Lesson 4: Mouse Control - Clicking	Lesson 5: Mouse Control – Clicking and Dragging
To learn what a keyboard is and how to locate relevant keys.	To learn what a keyboard is and how to locate relevant keys.	To learn what a mouse is and to develop basic mouse skills such as moving and clicking.	To learn what a mouse is and to develop basic mouse skills such as moving and clicking.	To learn what a mouse is and to develop basic mouse skills such as moving and clicking.

Intended outcome of the unit
Learning what a keyboard is and how to locate relevant keys. Learning to log in and out. Learning what a mouse is and developing control when using a mouse. Develop basic mouse skills, including moving and clicking and using an online paint tool. Further develop mouse skills to include the ability to click and drag.

Key Vocab	
Computer	Log in
Computer tower	Log out
Monitor	Computer safety
Keyboard	Protect
Mouse	Password
Letters	Private
Numbers	Secure
Uppercase	Security
Lowercase	Lock
Type	Personal

Computing – Year EYFS Learning Objectives – Spring 2

Programming 1: All about Instructions

Lesson 1: Following Instructions	Lesson 2: Giving Instructions	Lesson 3: Dressing Up Instructions	Lesson 4: Debugging Instructions	Lesson 5: Predictions
To follow instructions as part of practical activities and games.	To follow instructions as part of practical activities and games.	To learn to give simple instructions.	To learn that an algorithm is a set of instructions to carry out a task in a specific order.	To predict the outcome of an algorithm.

Intended outcome of the unit
Follow instructions as part of practical activities and games. Guide a partner through an obstable course to develop an understanding of giving simple instructions. Follow instructions as part of a dressing up game and learn to give simple instructions. Follow instructions as part of a practical handwashing activity and learn to debug when things go wrong. Learn that an algorithm is a set of instructions to carry out a task in a specific order.

Key Vocab	
Blindfold	Instructions
Step over	Timer
Walk over	Describe
Turn	Adjective
Left	Two-part instructions
Right	Timer
Stop	Algorithm
Duck	Order
Under	Sequence
Walk	Predict
Hop	Next
First	Last
Second	

Computing – Year EYFS Learning Objectives – Summer 1

Programming 2: Exploring Hardware

Lesson 1: Exploring Hardware Tinker Tray	Lesson 2: Real World Tinker Tray	Lesson 3: Pictures of Play	Lesson 4: Picture Walk	Lesson 5: Class Photo Album
To learn how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary.	To recognise that a range of technology is used in places such as homes and schools.	To learn how to operate a camera and iPad and use it to take photographs.	To learn how to operate a camera and iPad and use it to take photographs.	To learn how to operate a camera and iPad and use it to take photographs.

Intended outcome of the unit

Explore and tinker with different hardware and begin to be introduced to the relevant vocabulary.

Explore and tinker with hardware and identify where technology is used in places that they are familiar with such as homes and school.

Learn to operate a basic camera to take photographs of their independent play.

Develop their photography skills by taking photographs of their discoveries on a walk around the school grounds.

Take 'selfie' photographs to create a class gallery.

Key Vocab

Mouse	Speaker
Buttons	Click
Keys	Push
Motherboard	Pull
USB Stick	Twist
System fan	Under
Hard drive	On top of
Monitor	Behind
Computer tower	Open
Larger	Shut
Smaller	

Computing – Year EYFS Learning Objectives – Summer 2

Data Handling: Introduction to Data

Lesson 1: Loose Parts Play	Lesson 2: Sorting Ourselves	Lesson 3: Yes or No?	Lesson 4: Creating a Branching Database	Lesson 5: Exploring Pictograms
To understand how to sort and categories objects.	To explain how items have been sorted and categorised.	To explain how items have been sorted and categorised.	To explore and understand the concept of branch databases.	To understand how to read a simple pictogram.

Intended outcome of the unit
Sort and categorise objects. Sort themselves into groups based upon given categories. Respond to yes/no questions as an introduction to branching databases. Learn about branching databases through physical sorting and categorising. Learn to interpret a basic pictogram.

Key Vocab	
Sort	Count
Categorise	In total
Group	Altogether
Describe	Share
Texture	Divide
Colour	Equal
Pattern	Bigger than
Size	Smaller than
Weight	Thicker than
Length	Thinner than
More	

Computing – Year 1 Learning Objectives – Autumn 1

Improving Mouse Skills

Lesson 1: Logging in	Lesson 2: Click and drag skills	Lesson 3: Drawing shapes	Lesson 4: Drawing a story	Lesson 5: Self-portrait
To log in to a computer and access a website.	To develop mouse skills.	To use mouse skills to draw and edit shapes.	To draw a scene from a story using digital tools.	To create a self-portrait using digital techniques.

Intended outcome of the unit

Use computers more purposefully

Log in and navigate around a computer

Drag, drop, click and control a cursor using a mouse

Use software tools to create art on the computer

Key Vocab

account	fill
click	image
clipart	layers
computer	left-click
drag	log in
drag and drop	log off
duplicate	mouse

Computing – Year 1 Learning Objectives – Autumn 2

Programming 1: Algorithms Unplugged

Lesson 1: What is an algorithm?	Lesson 2: Algorithm Pictures	Lesson 3: Virtual Assistants	Lesson 4: Step by Step	Lesson 5: Debugging Directions
To understand what an algorithm is.	To follow instructions precisely to carry out an action.	To understand that computers and devices around us use inputs and outputs.	To understand and be able to explain what decomposition is.	To how to debug an algorithm.

Intended outcome of the unit
Explain what an algorithm is. Write clear algorithms. Follow an algorithm. Explain what inputs and outputs are. Create an achievable program. Decompose a design into steps. Identify bugs in algorithm and how to fix them.

Key Vocab	
Algorithm Computer Instructions Order Solution Specific Tasks	Algorithm Bug Instructions Device Input Output Program

Computing – Year 1 Learning Objectives – Spring 1

Creating Media: Digital Imagery

Lesson 1: Planning a Photo Story	Lesson 2: Taking Photos	Lesson 3: Editing Photos	Lesson 4: Searching for Images	Lesson 5: Photo Collage.
To understand and create a sequence of pictures.	To take clear photos.	To edit photos.	To search for and import images.	To create a photo collage.

Intended outcome of the unit
Plan a pictorial story using photographic images in sequence. Explain how to take clear photos. Take photos using a device. Edit photos by cropping, filtering and resizing. Search for and import images from the internet. Explain what to do if something makes them uncomfortable online. Organise images on the page, orientating where necessary.

Key Vocab	
Background	Blurred
Camera	Clear
Crop	Delete
Device	Digital camera
Download	Drag and drop
Edit	Editing software
Filter	Image
Import	Internet
Keyword	Online
Photograph	Resize
Save as	Screen
Search engine	Sequence
Software	Storage space
Visual effects	

Computing – Year 1 Learning Objectives – Summer 1

Programming: Bee-Bots

Lesson 1: Getting to know a Bee-Bot.	Lesson 2: Rocket Design	Lesson 3: Rocket Building Instructions	Lesson 4: Making a Rocket	Lesson 5: Rocket Launching
To explore a new device.	To design a rocket using a graphics editing programme.	To sequence a set of instructions.	To build a rocket.	To test a design and record data.

Intended outcome of the unit
Recognise cause and effect when pressing buttons on a Bee-Bot. Discuss and demonstrate how the Bee-Bot works. Record video, ensuring everyone is in the shot. Give several clear instructions in the sequence. Program a Bee-Bot to reach a destination. Identify and correct mistakes in their programming.

Key Vocab	
Algorithm	Bee-Bot
Code	Debug
Demonstration	Explain
Explore	Filming
Imputting	Instructions
Precise	Predict
Program	Review
Test video	Tinker

Computing – Year 1 Learning Objectives – Summer 2

Online Safety

Lesson 1: Using the internet safely	Lesson 2: Online Emotions	Lesson 3: Always be kind and considerate	Lesson 4: Posting and sharing online	Lesson 5: How much time should we spend on technology?
To recognise what the internet is and how to use it.	To identify how people's feelings and emotions can be affected by online content.	To recognise how to treat others, both online and in person.	To recognise the importance of being careful when posting and sharing online.	To discuss ways to balance time spent online and offline.

Intended outcome of the unit
Discuss what the internet it and how it can be used. Recognise that the internet may affect mood or emotions. Recognise how internet use can affect and upset others. Identify which information is appropriate to share and post online and which is not.

Key Vocab	
App	Appropriate
Device	Digital footprint
Feelings	Going online
In-person	Internet
Interactions	Offline activity
Kindness	Online experience
Online activity	Online safety
Online interactions	Pop-up
Personal information	Report
Posting online	Screen time
Sharing online	Stranger
Technology	Trusted adult
Unkind	Website

Computing – Year 2 Learning Objectives – Autumn 1

What is a computer?

Lesson 1: Computer Parts	Lesson 2: Inputs	Lesson 3: Technology Safari	Lesson 4: Invention	Lesson 5: Real-world role play
To recognise the parts of a computer.	To recognise how technology is controlled.	To recognise technology.	To create a design for an invention.	To understand the role of computers.

Intended outcome of the unit
Name some computer peropherals and their function. 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 the computers in the world around them.

Key Vocab	
Battery	Buttons
Camera	Computer
Desktop	Device
Digital content	Digital recorder
Electricity	Input
Invention	Keyboard
Laptop	Monitor
Mouse	Output
Photograph	Robot
Scanner	Screen
System	Tablet
Technology	Till
Video	Wire

Computing – Year 2 Learning Objectives – Spring 1

Programming 1: Algorithms and Debugging

Lesson 1: Dinosaur Algorithm	Lesson 2: Machine Learning	Lesson 3: Through the Maze	Lesson 4: Making Maps	Lesson 5: Unplugged Debugging
To decompose a game to predict the algorithms that are used.	To understand that computers can use algorithms to make predictions (machine learning).	To plan algorithms that will solve problems.	To understand what abstraction is.	To understand what debugging is.

Intended outcome of the unit
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.

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

Computing – Year 2 Learning Objectives – Spring 2

Data Handling: International Space Station

Lesson 1: Homes in Space	Lesson 2: Space Bag	Lesson 3: Warmer, colder	Lesson 4: Experiments in Space	Lesson 5: Goldilocks Planets
To understand how computers can help humans survive in space.	To create a digital drawing of essential items for life in space.	To understand the role of sensors on the ISS.	To create an algorithm for growing a plant in space.	To interpret data.

Intended outcome of the unit
Describe and explain how astronauts' survival needs are met about 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 dislpay 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.

Key Vocab	
Algorithm	Astronaut
Data	Digital
Digital content	Experiment
Galaxy	Insulation
Interactive map	Interpret
Laboratory	Monitor
Planet	Satellite
Sensor	Space
Temperature	Thermometer
Water reservoir	

Computing – Year 2 Learning Objectives – Summer 1

Programming 2: ScratchJr

Lesson 1: Using ScratchJr	Lesson 2: Creating an Animation	Lesson 3: Making a Musical Instrument	Lesson 4: Programming a Joke	Lesson 5: 'The Three Little Pigs' Algorithms
To explore a new application.	To create an animation.	To use chatacters as buttons.	To follow an algorithm.	To plan and use code to create an algorithm.

Intended outcome of the unit
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.

Key Vocab	
Algorithm	Astronaut
Data	Digital
Digital content	Experiment
Galaxy	Insulation
Interactive map	Interpret
Laboratory	Monitor
Planet	Satellite
Sensor	Space
Temperature	Thermometer
Water reservoir	

Computing – Year 2 Learning Objectives – Summer 2

Online Safety

Lesson 1: What happens when I post online?	Lesson 2: How do I keep my things safe online?	Lesson 3: It's my choice	Lesson 4: Is it true?
To decide which information is safe to share online.	To practise keeping information safe and private online.	To recognise when to deny permission online.	To follow an algorithm.

Intended outcome of the unit
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 Vocab	
Accepting Denying permission Online Permission Pop-up Private information Reliable Source	Consent Fake Offline Password Personal information Pressue Real Sharing online Trusted adult

Computing – Year 3 Learning Objectives – Autumn 1

Computing Systems and Networks 1: Networks 1

Lesson 1: What is a network?	Lesson 2: A file's journey	Lesson 3: How a website works	Lesson 4: Routers	Lesson 5: What is packet data?
To recognise what a network is.	To demonstrate how information moves around a network.	To demonstrate how a website works.	To explore the role of a router.	To identify the role of packet data.

Intended outcome of the unit

Recognise that a network is two or more devices connected and its purpose.

Identify key components that make up the school's network.

Explain the difference between wired and wireless connections.

Recognise that files are saves on a server.

Understand the role of the server in a network when requesting a website.

Identify parts of a website's journey to reach your computer.

Recognise that routers connect to send information.

Understand that data is broken into packets.

Key Vocab

Device	Server
File	The cloud
Internet	User
Network	Wifi
Network switch	Wired
Packet data	Wireless
Router	Wireless access point

Computing – Year 3 Learning Objectives – Autumn 2

Journey Inside a Computer

Lesson 1: Inputs and Outputs	Lesson 2: Building a Paper Laptop	Lesson 3: Following Instructions	Lesson 4: Computer Memory	Lesson 5: Dismantling a Tablet
To recognise basic inputs and outputs.	To identify the components inside a laptop.	To understand the purpose of computer parts.	To understand the purpose of computer parts.	To decompose a computer tablet.

Intended outcome of the unit
Recognise inputs and outputs and that the computer sends and recieves information. Explain that the parts of a laptop work together and the purpose of each part. Explain what an algorithm is. Suggest what memory is for inside a computer. Make comparisons between different types of computer.

Key Vocab	
Algorithm	Assembly
CPU	Data
Decompose	Desktop
Disassamble	GPU
Hard drive	HDD
Infinite Loop	Input
Keyboard	Laptop
Monitor	Microphone
Output	Mouse
Program	Photocopier
RAM	QR Code
Storage	ROM
Technology	Tablet Device
Touchpad	Touchscreen

Computing – Year 3 Learning Objectives – Spring 1

Creating Media: Trailers

Lesson 1: Planning a Book Trailer	Lesson 2: Filming	Lesson 3: Editing the Trailer	Lesson 4: Transitions and Text	Lesson 5: Video Review
To plan a book trailer.	To take photos or videos that tell a story.	To edit a video.	To add text and transitions to a video.	To evaluate video editing.

Intended outcome of the unit
Describe the purpose of a trailer. Create a storyboard for a book trailer. Consider camera angles when taking photos or videos. Import videos and photos into film editing software. Record sounds and add these to a video. Add text to a video. Incorporate transitions between images. Evaluate their own and others' trailers.

Key Vocab	
Application	Camera angle
Clip	Cross blur
Cross	Cross zoom
Fade	Digital device
Desktop	Directional wipe
Dip to black	Film
Edit	Graphics
Software	Key events
Laptop	Music
Photo	Plan
Recording	Sound effects
Storyboard	Time code
Trailer	Transition
Video	Voiceover

Computing – Year 3 Learning Objectives – Spring 2

Programming: Scratch

Lesson 1: Tinkering with Scratch	Lesson 2: Using Loops	Lesson 3: Mapping an Animation	Lesson 4: Storytelling	Lesson 5: Programming a Game
To explore a programming application.	To use repetition (a loop) in a program.	To program an animation.	To program a story.	To program a game.

Intended outcome of the unit
Explain what some of the blocks do in Scratch. Explain what a loop is and include one in their program. Suggest possible additions to an existing program by remixing code. Recognise where something on screen is controlled by code. Use a systematic approach to find bugs. Understand the definitions of decomposition and algorithm and how they are used to create accurate code.

Key Vocab	
Algorithm	Animation
Application	Code
Code block	Debug
Decompose	Game
Interface	Loop
Predict	Program
Remixing code	Repetition code
Review	Scratch
Sprite	Tinker

Computing – Year 3 Learning Objectives – Summer 1

Online Safety

Lesson 1: Beliefs, opinions and facts on the internet	Lesson 2: Who should I ask?	Lesson 3: When being online makes me upset	Lesson 4: Sharing of information	Lesson 5: Rules of social media platforms
To understand how the internet can be used to share beliefs, opinions and facts.	To explain what should be done before sharing information online.	To identify the effects that the internet can have on people's feelings.	To understand the ways personal information can be shared on the internet.	To understand the rules for social media platforms.

Intended outcome of the unit
Differentiate between fact, opinion and belief online. Explain how to deal with upsetting online content. Recognise that digital devices communicate with each other to share personal information. Explain what social media platforms are used for. Recognise why social media platforms are age-restricted.

Key Vocab	
Accurate	Age restrictions
Autocomplete	Belief
Charity	Content
Digital device	Fact
Fake news	Hoax
Internet	Online emotions
Opinion	Permission
Organisation	Reliable
Search	Search engine
Share	Smart devices
Social media	

Computing – Year 4 Learning Objectives – Autumn 1

Computing Systems and Networks: Collaborative Learning

Lesson 1: Teamwork	Lesson 2: Sharing a Document	Lesson 3: Slide Presentations	Lesson 4: Google Forms	Lesson 5: Shared Spreadsheets
To understand that software can be used to work online collaboratively.	To understand how to contribute to someone else's work effectively.	To understand how to create effective presentations.	To understand how to create and share Google Forms.	To understand how to use a shared spreadsheet to explore data.

Intended outcome of the unit
Understand the need to be thoughtful when working on a collaborative document. Use comments to suggest changes to a document and understand how to resolve comments. Use a variet of different slide styles to convey information including images and transitions. Create a google form with a range of different questions types that will provide different types of answers. Export data to a spreadsheet, highlighting data, using conditional formatting and calculating averages and sums of numbers.

Key Vocab	
Animations	Average
Bar chart	Collaboration
Comment	Contribution
Data	Edited
Email account	Format
Freeze	Icon
Images	Insert
Link	Pie chart
Numerical data	Share
Presentations	Software
Slides	Suggestions
Spreadsheets	Teamwork
Survey	Transitions
Themes	

Computing – Year 4 Learning Objectives – Autumn 2

Programming 1: Further Coding with Scratch

Lesson 1: Scratch Reminder	Lesson 2: Identifying what code does	Lesson 3: Introduction to variables	Lesson 4: Making a variable	Lesson 5: Times Tables Project
To recall the key features of Scratch.	To understand how a Scratch game works by using decomposition to identify key features.	To understand what a variable is and how to make one.	To understand how to make a variable in Scratch.	To use knowledge of how variables work to create a quiz.

Intended outcome of the unit

Understand how to create a simple script in Scratch – be able to change sprite and prevent the sprite from rotating.

Use decomposition to identify key features and understand how to decipher actions that make the quiz game work.

Understand what a variable is and how to use the 'say' and 'ask' blocks.

Create a variable and be able to use a variable to record a score.

Understand what a variable is and how it works within a program.

Key Vocab

Broadcast block	Code blocks
Conditional	Coordinates
Decomposition	Features
Game	Information
Negative numbers	Orientation
Parameters	Position
Program	Project
Script	
Stage	
Variables	

Computing – Year 4 Learning Objectives – Spring 1

Data Handling: Investigating Weather

Lesson 1: What's the weather?	Lesson 2: Weather Stations	Lesson 3: Extreme Weather	Lesson 4: Satellites and Forecasts	Lesson 5: Presenting Forecasts
To log data taken from online sources in a spreadsheet.	To design a weather station.	To design an automated machine to respond to sensor data.	To understand how weather forecasts are made.	To use tablets or digital cameras to present a weather forecast.

Intended outcome of the unit

Search the web efficiently to find temperatures of different cities and record this accurately.

Design a weather station that gathers and records sensor data, explaining how it works and the units of measurement it would use.

Design an automated machine that uses selection to respond to sensor data.

Search for and record weather forecast information in a spreadsheet and explain how this data is collected.

Create a video which incldues weather forecast information.

Key Vocab

Accurate	Backdrop
Climate zone	Cold
Collaboration	Condensation
Cylinder	Degrees
Evaporation	Extreme weather
Forecast	Heat sesnsor
Lightning	Measurement
Script	Sensitive
Sensor data	Solar panel
Tablet	Temperature
Digital camera	Tornado
Themometer	Weather
Warm	Wind
Weather forecast	

Computing – Year 4 Learning Objectives – Spring 2

Programming 2: Computational Thinking

Lesson 1: What is computational thinking?	Lesson 2: Decomposition	Lesson 3: Abstraction and pattern recognition	Lesson 4: Algorithm design	Lesson 5: Applying computational thinking
To understand that computational thinking is made up of four key strands.	To understand what decomposition is and how to apply it tol solve problems.	To understand what pattern recognition and abstraction mean.	To understand how to create an algorithm and what it can be used for.	To combine computational thinking skills to solve a problem.

Intended outcome of the unit
Understand that problems can be solved more easily using computational thinking. Understand what different code blocks do and create a simple game. Understand the terms ‘pattern recognition’ and ‘abstraction’ and how they help to solve a problem. Create a Scratch program which draws a square and at least one other shape. Understand how computational thinking can help to solve problems and apply computational thinking to problems they face.

Key Vocab	
Accurate	Backdrop
Climate zone	Cold
Collaboration	Condensation
Cylinder	Degrees
Evaporation	Extreme weather
Forecast	Heat sesnsor
Lightning	Measurement
Script	Sensitive
Sensor data	Solar panel
Tablet	Temperature
Digital camera	Tornado
Themometer	Weather
Warm	Wind
Weather forecast	

Computing – Year 4 Learning Objectives – Summer 1

Online Safety

Lesson 1: What happens when I search online?	Lesson 2: How do companies encourage us to buy online?	Lesson 3: Fact, opinion or belief?	Lesson 4: What is a bot?	Lesson 5: What is my Tech Timetable like?
To describe how to search for information within a wide group of technologies and make judgement about the probably accuracy.	To describe some of the methods used to encourage people to buy things online.	To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true.	To explain that technology can be designed to act like or impersonate living things.	To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology.

Intended outcome of the unit
Describe how to search over multiple platforms and be aware of the accuracy of the results presented. Describe some of the methods used to persauade people to buy online. Explain the difference between fact, opinion and belief and recognise these online. Explain what a bot is and give examples of different bots. Explain some positive and negative distractions of using technology and small strategies for reducing the time spent on technology.

Key Vocab	
Accurate	Backdrop
Climate zone	Cold
Collaboration	Condensation
Cylinder	Degrees
Evaporation	Extreme weather
Forecast	Heat sesnsor
Lightning	Measurement
Script	Sensitive
Sensor data	Solar panel
Tablet	Temperature
Digital camera	Tornado
Themometer	Weather
Warm	Wind
Weather forecast	

Computing – Year 5 Learning Objectives – Autumn 1

Computing Systems and Networks: Search Engines

Lesson 1: Searching basics	Lesson 2: Inaccuarte information	Lesson 3: Web quest	Lesson 4: Information poster	Lesson 5: Web crawlers
To understand what a search engine is and how to use it.	To be aware that not everything online is true.	To search effectively.	To create an informative poster.	To understand how search engines work.

Intended outcome of the unit
Explain what a search engine is, suggesting several search engines to use and explain how to use them to find websites and information. Suggest that things online aren't always true and recongise what to check for. Explain why keyboards are important and what TASK stands for, using these strategies to search effectively. Recognise the terms 'copyright' and 'fair use' and combine text and images in a poster. Make parallels betwene book searching and internet searching, explaining the role of web crawlers and recongising that results are rated to decide rank.

Key Vocab	
Algorithm	Appropriate
Copyright	Correct
Credit	Data leak
Deceive	Fair
Fake	Inappropriate
Incorrect	Index
Information	Keywords
Network	Privacy
Rank	Real
Search engine	TASK
Web crawler	Webiste

Computing – Year 5 Learning Objectives – Autumn 2

Data Handling: Mars Rover 1

Lesson 1: Mars Rover	Lesson 2: Binary Code	Lesson 3: Computer Architecture	Lesson 4: Using Binary – Numbers	Lesson 5: Using Binary - Text
To identify how and why data is collected from space.	To read and calculate numbers using binary code.	To identify the computer architecture of the Mars Rovers.	To use simple operations to calculate bit patterns.	To represent binary as text.

Intended outcome of the unit

Identify some types of data the Mars Rover could collect (for example, photos).

Explain how the Mars Rover transmits the data back to Earth and challenges involved.

Read any number in binary, up to eight bits.

Identify input, processing and output on the Mars Rovers.

Read binary numbers and grasp the concept of binary addition.

Relate binary signals (Boolean) to a simple character-based language, ASCII.

Key Vocab

8-bit binary	Addition
ASCII	Binary code
Boolean	Byte
CPU	Data
Data transmission	Decimal numbers
Discovery	Distance
Hexadecimal	Input
Mars rover	Output
Numerical data	Radio signal
Planet	Scientist
RAM	Signal
Sequence	Space
Simulation	
Subtraction	

Computing – Year 5 Learning Objectives – Spring 1

Creating Media: Stop Motion Animation

Lesson 1: Animation Explored	Lesson 2: Exploring Stop Motion	Lesson 3: Planning My Stop Motion Project	Lesson 4: Stop Motion Creation	Lesson 5: Editing My Stop Motion Project
To understand what animation is.	To understand what stop motion animation is.	To plan a stop motion video.	To create a stop motion animation.	To edit and assess my stop motion animation.

Intended outcome of the unit
Create a toy with simple images with a single movement. Create a short stop motion with small changes between images. Think of a simple story idea for their animation then decompose it into smaller parts to create a storyboard with simple characters. Make small changes to the models to ensure a smooth animation and delete unnecessary frames. Add effects such as extending parts and titles. Provide helpful feedback to other groups about their animations.

Key Vocab	
Animation	Animator
Background	Character
Decomposition	Design
Digital device	Edit
Evaluate	Flip book
Fluid movement	Frames
Model	Moving images
Onion skinning	Still images
Stop motion	Storyboard
Thaumatrope	Zoetrope

Computing – Year 5 Learning Objectives – Spring 2

Programming Music: Scratch

Lesson 1: Tinkering with Scratch Music Elements	Lesson 2: Scratch Soundtracks.	Lesson 3: Planning a Soundtrack	Lesson 4: Programming a Soundtrack	Lesson 5: Battle of the Bands
To tinker with Scratch music elements.	To create a program that plays themed music.	To plan a soundtrack program.	To program a soundtrack.	To program music for a specific purpose.

Intended outcome of the unit
Iterate ideas, testing and changing throughout the lesson. Explain what the basic commands do. Explain how their program links to the theme, Include a loop in their work. Correct their own simple mistakes. Explain their scene in the story. Link musical concepts to their scene. Include a repeat and explain its function to enhance music. Code a piece of music that combines a variety of structures. Use loops in their programming. Recognise that programming music is a way to apply their skills.

Key Vocab	
Basic commands	Bug
Code	Debug
Decompose	Loop
Mind map	Music
Output	Pitch
Program language	Program
Repeat	Rhythm
Scratch	Sountrack
Tempo	Timbre
Tinker	

Computing – Year 5 Learning Objectives – Summer 1

Online Safety

Lesson 1: Online Protection	Lesson 2: Online Communication	Lesson 3: Online Reputation	Lesson 4: Online Bullying	Lesson 5: Online Health
To understand how apps can access personal information and how to alter the permissions.	To be aware of the positive and negative aspects of online communication.	To understand how online information can be used to form judgements.	To discover ways to overcome bullying.	To understand how technology can affect health and wellbeing.

Intended outcome of the unit
Understand that passwirds need to be strong and that apps require some form of password. Recognise some types of online communication and know who to go to if they need help with any communication matters online. Search for simple informaiton about a person, such as their birthday or key life moments. Know what bullying is and that it can occur both online and in the real world. Recognise when health and well-being are being affected in either a positive or negative way through online use. Offer some advice and tips to combat the negative effects of online use.

Key Vocab	
Accurate	Advice
App	Application
App permissions	Biography
Bullying	Communication
Emojis	Health
In-app purchases	Information
Judgement	Meme
Organisation	Opinion
Real world	Password
Summarise	Support
Trusted adult	Well-being

Computing – Year 6 Learning Objectives – Autumn 1

Computing Systems and Networks: Bletchley Park

Lesson 1: Secret Codes	Lesson 2: Brute Force Hacking	Lesson 3: Bletchley Park	Lesson 4: Computing Heroes	Lesson 5: Computing Heroes Part 2
To understand there are many different types of secret codes.	To understand the importance of having a secure password.	To understand the importance of Bletchley Park to the World War II war effort.	To research historical figures that contributed to technological advances in computing.	To research and present information and historical figures in computing.

Intended outcome of the unit
Explain that codes can be used for a number of different reasons and decode messages. Explain how to ensure a password is secure and how this works. Create a simple website with information about Bletchley Park including the need to build electronic thinking machines to solve cipher codes. Explain the importance of historical figures and their contribution towards computer science. Present information about their historical figure in an interesting and engaging manner.

Key Vocab	
Acrostic code	Brute force hacking
Caesar cipher	Chip and pin
Cipher	Code
Combination	Contribute
Convince	Date shift cipher
Discovery	Hero
Invention	Nth letter cipher
Password	Pig latin
Pigpen cipher	Present
Scrambled	Secret
Secure	Technological advancement
Trial and error	

Computing – Year 6 Learning Objectives – Autumn 2

Data Handling: Big Data

Lesson 1: Barcodes	Lesson 2: Transmitting Data	Lesson 3: RFID	Lesson 4: Using RFID	Lesson 5: Transport Data
To identify how barcodes and QR codes work.	To know how infrared waves transmit data.	To recognise how RFID is used.	To input and analyse real-world data.	To analyse and evaluate data.

Intended outcome of the unit

Understand why barcodes and QR codes were created.

Create (and scan) their own QR code using a QR code generator website.

Explain how infrared can be used to transmit a Boolean type signal.

Explain how RFID works, recall a use of RFID chips, and type formulas into spreadsheets.

Take real-time data and enter it effectively into a spreadsheet.

Presenting the data collected as an answer to a question.

Recognising the value of analysing real-time data.

Analyse and evaluate transport data and consider how this provides a useful service to commuters.

Key Vocab

Algorithm	Barcode
Boolean	Brand
Chip	Commuter
Contactless	Data
Encrypt	Infrared
Proximity	QR code
QR scanner	Radio waves
RFID	Signal
Spreadsheet	Systems analyst
Transmission	Wireless

Computing – Year 6 Learning Objectives – Spring 1

Creating Media: History of Computers

Lesson 1: Playing with Sound	Lesson 2: Radio Plays	Lesson 3: First Computers	Lesson 4: Computers that changes the world	Lesson 5: Future Computer
To tinker with audio recording.	To record, edit and add sound effects to a radio play.	To understand how computers have changed and the impact this has had on the modern world.	To research one of the computers that changed the world and present information about it to the class.	To design a computer for the future.

Intended outcome of the unit

Explain how to record sounds and add in sound effects over the top.

Produce a simple radio play with some special effects and simple edits which demonstrate an understanding of how to use the software.

Create a document that includes correct date information and facts about the computers and how they made a difference.

Demonstrate a clear understanding of their device and how it affected modern computers, including well-researched information with an understanding of the reliability of their sources.

Describe all of the features that we'd expect a computer to have including RAM, ROM, hard drive and processor, but of a higher specification than currently available.

Key Vocab

Background noise	Byte
Computer	CPU
Device	FX
Gigabyte	GPU
Graphics	Hard drive
Kilobyte	Megabyte
Memory storage	Mouse
Operating system	Overlay
Radio play	RAM
Record	ROM
Script	Smartphone
Sound clip	Sound effect
Terabyte	Touch screen
Track	Trackpad

Computing – Year 6 Learning Objectives – Spring 2

Programming: Intro to Python

Lesson 1: Tinkering with Logo	Lesson 2: Nested Loops	Lesson 3: Using Python	Lesson 4: Using Loops in Python	Lesson 5: Coding Mondrian
To tinker with a new piece of software.	To understand nested loops.	To understand basic Python commands.	To use loops when programming.	To understand the use of random numbers.

Intended outcome of the unit
Iterate ideas, testing and changing throughout the lesson and explain that their program does. Use nested loops in their designs, explaining why they need two repeats. Alter the house drawing using Python commands; use comments to show a level of understanding around what their code does. Use loops in Python and explain what the parts of a loop do. Recognise that computers can choose random numbers; decompose the program into an algorithm and modify a program to personalise it.

Key Vocab	
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Computing – Year 6 Learning Objectives – Summer 1

Online Safety

Lesson 1: Life Online	Lesson 2: Sharing Online	Lesson 3: Creating a positive online reputation	Lesson 4: Capturing Evidence	Lesson 5: Password Protection
To describe online issues that give us negative feelings and know how to get help.	To explore the impact of consequences of sharing online.	To know how to create a positive online reputation.	To describe how to capture bullying content as evidence.	To manage personal passwords effectively.

Intended outcome of the unit
Discuss various issues online that can leave pupils feeling sad, frightened, worried or uncomfortable and can describe numerous ways to get help. Explain how sharing online can have both positive and negative impacts. Be aware of how to seek consent from others before sharing material online and describe how content can still be shared online even if it is set to private. Explain what a digital reputation us and what it can consist of. Understand the importance of captuing evience of online bullying and demonstrate some of these methods on the devices used at school. Describe ways to manage passwords and strategies to add extra security, such as two-factor authentication. Explain what to do is passwords are shared, lost or stolen. Describe strategies to identify scams. Explain ways to increase their privacy settings and understand why it is important to keep their software updated.

Key Vocab	
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Operating system	Overlay
Radio play	RAM
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Terabyte	Touch screen
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