Computing Curriculum

We aim to instil a sense of enjoyment around using technology and to develop pupil's appreciation of its capabilities and the opportunities technologies offer to create, manage, organise and collaborate. Children are given the opportunity to tinker with software and programs as we want to develop pupils' confidence when encountering new technology which is a vital skill in the ever evolving and changing landscape of technology. Through our curriculum, we intend for pupils not only to be digitally competent and have a range of transferable skills at a suitable level for the future workplace, but also to be responsible online citizens.

		Autumn	Spring	Summer
KS1	Year A	Computing systems and networks: Word Processing	Online Safety (Year 2)	Programming: Algorithms Unplugged
	Year B	Programming: Bee-bots	Creating Media: Digital imagery	Data handling: Introduction to data
LKS2	Year A	Computing systems and networks: Emailing	Online Safety (Year 4)	Programming: Scratch
	Year B	Computing systems and networks: Networks and the internet	Data handling: Comparison cards	Computing systems and networks: Journey inside a computer
UKS2	Year A	Data Handling: Mars Rover 1	Online Safety (year 6)	Programming: Micro:bit
	Year B	Programming: Music	Creating media: Stop motion animation	Computing systems and networks: Search engines

Composite

Being such a core part of everyday life, the national curriculum for computing has been developed to equip children with the skills and understanding they'll need to safely use computers and other forms of technology. The computing national curriculum ensures that children become digitally literate, whilst expressing themselves and their ideas through information and communication technology.

Our curriculum for computing aims ensure that all children:

- can understand and apply the principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident, and creative users of information and communication technology.

Key Stage 1

Year A

Unit 1A: Computer Systems and Networks: Word Processing

Learning about word processing and how to stay safe online as well developing touch-typing skills. Introducing important keyboard shortcuts, as well as simple editing tools within a word processor including: bold, italics, underline and font colour as well as how to import images.

Outcomes:

- ✓ 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.

Learning Objectives	Learning Outcomes
To begin to learn to touch type.	• I can find keys on a computer keyboard. • I can type capital letters using 'shift'. • I can identify that the keyboard is an important input device.
To understand how to use a word processor.	• I can type a sentence into a word processor. • I can select text and make it bold or italic. • I can explain how to make other changes to a document.
To understand how to add images to a text document.	• I can use keyboard shortcuts to alter text. • I can search for and find an appropriate image. • I can import and alter an image in a document.
To create a poetry book using sources from the internet.	• I can use text styles to create headings and subtitles. • I can copy and paste text into a document. • I can identify the importance of crediting source materials.
To create a digital piece of writing.	• I can use keyboard shortcuts. • I can use different text styles. • I can import and alter an image in a document. • I can evaluate my writing.

Unit 2A: Online Safety (year 2)

Learning about online safety, including: what happens to information posted online; how to keep things private online; who we should ask before sharing online; describing different ways to ask for, give, or deny permission online.

Outcomes:

- ✓ 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.

Learning Objectives	Learning Outcomes
To decide which information is safe to share online.	• I can explain what online information is. • I can explain what information is safe to share online. • I can recognise that information shared online stays there forever. • I can identify who to talk to if something is shared that makes me feel sad or worried.
To practise keeping information safe and private online.	• I can identify why passwords are used. • I can develop a strong password. • I can classify information as private. • I can explain how to keep information private online.
To recognise when to deny permission online.	• I can identify what denying permission means. • I can name ways to get help if I feel pressured online. • I can explain why I should deny permission.
To recognise that not everything online is true.	• I can identify whether information is true or false. • I can explain why people may post things online that are not true. • I can check the reliability of online information.

Unit 3A: Programming: Algorithms Unplugged

Using an unplugged approach so that algorithms, decomposition and debugging are made relatable to familiar contexts, such as dressing up and making a sandwich, while learning why instructions need to be very specific.

Outcomes:

- ✓ 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 an algorithm and how to fix them.

Learning Objective	Learning Outcomes
To understand what an algorithm is.	• I can explain that an algorithm is a set of instructions. • I can understand that these instructions sometimes need to be carried out in order. • I can understand there can be more than one way to solve a problem.
To follow instructions precisely to carry out an action.	• I can explain why an algorithm must be clear and precise. • I can explain the problems a robot can have following our instructions.
To understand that computers and devices around us use inputs and outputs.	• I can identify some input devices. • I can identify some output devices. • I can identify some devices that are both input and output devices.
To understand and be able to explain what decomposition is.	• I can explain what decomposition is. • I can understand how decomposition allows you to solve a problem more easily. • I can explain how we use decomposition in our everyday lives.
To know how to debug an algorithm.	• I can spot bugs in algorithms. • I can fix the error (debug it) and explain the problem it caused.

Year B

Unit 1B: Programming: Bee:Bots

Developing early programming skills using either the Bee:Bot or virtual Bee:Bot.

Outcomes:

- ✓ 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 a number of clear instructions in sequence.
- ✓ Program a Bee-Bot to reach a destination.
- ✓ Identify and correct mistakes in their programming.

Learning Objective	Learning Outcomes
To explore a new device.	• I can 'tinker' with the buttons of a Bee-Bot to see what they do. • I can complete a cycle of predict, test and review.
To create a demonstration video.	• I can create a video to explain how to use a Bee-Bot.

	• I can explain what the buttons on a Bee-Bot do. • I can show how the Bee-Bot moves when you press the different buttons.
To plan and follow a precise set of instructions.	• I can follow verbal instructions. • I can give precise instructions. • I can check that the instructions being given are correct.
To program a device.	• I can personalise my Bee-Bot world. • I can consider how the Bee-Bot can move from one place to another. • I can plan a Bee-Bot route. • I can program a Bee-Bot to follow my planned route.
To create a program that tells a story.	• I can use programming to give the Bee-Bot clear instructions. • I can debug my instructions if they go wrong by identifying and correcting the mistake.

Unit 2B: Creating Media: Digital imagery

Using creativity and imagination to plan a miniature adventure story and capturing it using developing photography skills. Children learn to enhance photos using a range of editing tools as well as searching for and adding other images to a project, resulting in a high-quality photo collage showcase.

Outcomes:

- ✓ 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.

Learning Objectives	Learning Outcome
To understand and create a sequence of pictures.	• I can explain what is happening in a pictorial story. • I can recognise the importance of sequencing. • I can plan my own pictorial story. • I know that sequencing is important in Computing.
To take clear photos.	• I can get down to the level of my character. • I can look at the screen and check what is in frame. • I can press the button carefully to ensure nothing changes. • I can ensure that my surroundings are bright enough. • I can identify that moving can create a blurred image.

To edit photos.	• I can explain that photos can be changed after they have been taken. • I can identify ways to improve my photo. • I can crop, resize and add a colour filter to my photo.
To search for and import images.	• I know images can be found online. • I can think of a keyword to search with. • I know what to do if I find something uncomfortable.
To create a photo collage.	• I can download the photos I want. • I can organise them on to the page. • I can resize and change the orientation of my images. • I can add numbers to show their order.

Unit 3B: Data handling: Introduction to data

Learning what data is and the different ways that it can be represented as well as developing an understanding of why data is useful, how it can be used and ways in which it can be gathered and recorded both by humans and computers.

Outcomes:

- ✓ Represent animal-themed data in different ways, using objects and technology.
- ✓ Log in and use mouse and keyboard skills to navigate the computer.
- ✓ Represent the same data as a pictogram and a table or chart.
- ✓ Collect data about minibeasts using a tally chart and represent their data digitally.
- ✓ Click and drag objects to sort data using a branching database.
- ✓ Consider the types of input that would be used to gather different forms of data when designing an invention.

Learning Objectives	Learning Outcomes
To represent data in different ways.	• I know that data can be shown in different ways. • I can represent data in different ways. • I can answer questions about the data using my representation.
To use technology to represent data.	• I can use a mouse. • I can type using a keyboard. • I can create a pictogram that shows animal data.
To collect and record data.	• I can identify different minibeasts. • I can record the number of different minibeasts I see. • I can represent this data digitally.
To sort data.	• I can identify and categorise different animals. • I can identify questions to sort data in the most efficient way. • I can create a branching database.

To design an invention to gather data.	• I recognise that computers understand different types of input. • I can design a computerised invention to gather data. • I can explain how my invention works.

Lower Key Stage 2

Year A

Unit 1A: Computing systems and networks: **Emailing**

Learning how to send and edit emails, add attachments and how to be a responsible digital citizen by thinking about the contents of what is sent.

Outcomes:

- ✓ Log in and out of email.
- ✓ Send a simple email with a subject plus 'To' and 'From' in the body of the text.
- ✓ Edit an email.
- ✓ Type in the email address correctly and send the email.
- ✓ Add an attachment to an email.
- ✓ Write an email using positive language, with an awareness of how it will make the recipient feel.
- ✓ Recognise unkind behaviour online and know how to report it.
- ✓ Offer advice to victims of cyberbullying.
- ✓ Recognise when an email may be fake and explain how they know.

Learning Objective	Learning Outcome
To understand how we communicate with technology.	• I can discuss early methods of communication. • I can identify which method of communication suits each purpose. • I can explain what an email is.
To understand what emails are and how to send one.	• I can log in and log out of my email account. • I can write an email to my teacher. • I can identify that emails can be used to send information around the world.
To know how to create an email with an attachment.	• I can log into my email account. • I can send an email with an attachment.
To understand the importance of being kind online.	• I can use positive language within an email. • I can recognise when online behaviour is unkind. • I can be a responsible digital citizen.

To recognise when an email is not genuine.	• I can recognise when an email might be fake. • I can recall that I shouldn't click on links in an email unless I know what it is. • I can identify what to do if I suspect an email is fake.

Unit 2A: Online Safety (Year 4)

Learning how to navigate the internet in an informed, safe and respectful way.

Outcomes:

- ✓ Describe how to search over multiple platforms and are aware of the accuracy of the results presented.
- ✓ Describe some of the methods used to persuade 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 on how to reduce the amount of time spent on technology.

Learning Objective	Learning Outcome
To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy	• I can describe how to search for information on search engines, social media and image and video sites • I can make judgments about the accuracy of the information I am presented with
To describe some of the methods used to encourage people to buy things online	• I can describe some methods used by companies such as 'in-app purchases' and 'pop-ups' • I can recognise some of these when they appear • I can think about ways to avoid purchases
To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true	• I can explain the difference between facts, opinions and beliefs • I can make my own judgments about what I read and see online
To explain that technology can be designed to act like or impersonate living things	• I can explain what a 'bot' is • I can provide examples of bots • I can describe the benefits and the risk of using bots now and in the future
To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology	• I can explain how technology can be both a positive and negative distraction • I can recognise the amount of time I spend on technology • I can suggest strategies to help limit time spent on technology

Unit 3A: Programming – Scratch

Building on the use of the 'ScratchJr' application in Year 2, progressing to using the more advanced application called 'Scratch', learning to use repetition or 'loops' and building upon skills to program an animation, a story and a game.

Outcomes:

- ✓ 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.

Learning Objective	Learning Outcome
To explore a programming application.	• I can identify that Scratch is a coding application. • I can predict what I think different code will do. • I can explore an application independently.
To use repetition (a loop) in a program.	• I can understand and explain what a loop is. • I can recognise when a loop is used. • I can choose an appropriate loop.
To program an animation.	• I can decompose a project. • I can remix a project. • I can select the correct blocks to achieve my goals.
To program a story.	• I can choose appropriate blocks. • I can continue someone else's program. • I can debug my own program.
To program a game.	• I can explain the purpose of an algorithm. • I can decompose a problem. • I can use an algorithm to code a program.

Year B

Unit 1B: Computing systems and networks: Networks and the internet

Introduction to the concept of networks, learning how devices communicate. From identifying components, learn how information is shared and deepen this understanding by exploring examples of real-world networks

Outcomes:

- ✓ 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 saved 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.

Learning Objective	Learning Outcome
To recognise what a network is.	• I can explain the purpose of a network. • I can name the key parts of a network. • I can explain the difference between a wired and wireless connection. • I can identify which components can be connected.
To demonstrate how information moves around a network.	• I can discuss the journey of a file. • I can explain parts of a network. • I can identify real-world networks.
To demonstrate how a website works.	• I can recognise that the internet is a network. • I can list the parts of a network needed for a website to work. • I can recognise the role of the cloud.
To explore the role of a router.	• I can recognise the role that a router plays in a network. • I can give examples of how a router is used. • I can explain what a router does.
To identify the role of packet data.	• I can recognise that data is transferred across the internet. • I can explain that routers connect to send information. • I can demonstrate that data can be too big to send whole.

Unit 2B: Data handling: Comparison cards databases

Using the theme of a 'Comparison card game' to understand what a database is. Learning the meanings of records, fields and data. Further exploration will lead to the development of the ideas of sorting and filtering.

Outcomes:

- ✓ Explain what is meant by 'field,' 'record,' and 'data.'
- ✓ Compare paper and computerised databases.
- ✓ Put values into a spreadsheet.
- ✓ Sort, filter and interpret data in a spreadsheet.
- ✓ Create a graph on Google Sheets.
- ✓ Explain the purpose of visual representations of data.

Learning Objective	Learning Outcome
To understand the terminology around databases.	• I know what field, record and data mean. • I can compare numbers. • I can scan a record for relevant information.

To compare paper and computerised databases.	• I understand what a paper database is and can name examples. • I understand what a computerised database is. • I can compare the advantages and disadvantages of paper and computerised databases.
To sort, filter and interpret data.	• I can input data into a database. • I know how to sort data. • I can filter data by a particular value. • I can create questions that can be answered using information from a database. • I can interpret information.
To represent data in different ways.	• I can create a graph and chart in Google Sheets. • I can name different types of charts. • I understand the purpose of visual representations of data.
To sort data for a purpose.	• I understand that databases are used for different purposes. • I know how to sort and filter data. • I can explain what information is useful in an online database.

Unit 3B: Computing systems and networks: Journey inside a computer

Assuming the role of computer parts and creating paper versions of computers helps to consolidate an understanding of how a computer works, as well as identifying similarities and differences between various models.

Outcomes:

- ✓ Recognise inputs and outputs and that the computer sends and receives 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 computers.

Learning Objective	Learning Outcome
To recognise basic inputs and outputs.	• I can identify some inputs and outputs. • I can recall that a computer follows instructions. • I can explain what the computer is doing.
To decompose a laptop.	• I can suggest a laptop's inputs and outputs. • I can recall that a laptop is made up of many parts. • I can use logic to explain the purpose of some parts.
To understand the purpose of computer parts.	• I can explain that a computer is made up of many parts. • I can suggest the purpose of each part. • I can follow an algorithm.

To understand the purpose of computer parts.	• I can explain that a computer is made up of many parts. • I can suggest the purpose of each part. • I can use a QR code.
To decompose a tablet computer.	• I can recall that a tablet is a computer. • I can compare similarities and differences across different types of computers. • I can use logic to suggest what's inside a computer.

Upper Key Stage 2

Year A

Unit 1A: Data Handling – Mars Rover 1

Identifying some of the types of data that the Mars Rover collects and explaining how the Mars Rover transmits the data back to Earth. Children will read binary numbers, and understand binary addition as well as identifying input, processing and output on the Mars Rovers.

Outcomes:

- ✓ Identify some of the types of data that the Mars Rover could collect (for example, photos).
- ✓ Explain how the Mars Rover transmits the data back to Earth and the challenges involved in this.
- ✓ 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.

Learning Objective	Learning Outcome
To identify how and why data is collected from space.	• I can recall the meanings of 'data' and 'transmit'. • I can identify a type of data that the Mars Rover may transmit back to Earth. • I can identify the challenges of transmitting data over large distances. • I can explain why data is being collected from the Mars Rover.
To read and calculate numbers using binary code.	• I can identify binary as the most basic way that computers communicate. • I can read binary numbers up to eight characters. • I can recall that each number (one or zero) is referred to as a bit. • I can calculate binary numbers, knowing each digit is worth double the one that precedes it.

To identify the computer architecture of the Mars Rovers.	• I can identify sensors. • I can identify the difference between computer input and output. • I can explain how the size of random-access memory (RAM) affects the processing of data (CPU).
To use simple operations to calculate bit patterns.	• I can recall how binary is used to represent numbers up to 255. • I can recall that computers use binary mathematically to calculate data. • I can carry out binary addition.
To represent binary as text.	• I can recall that binary is the main means of all data transfer. • I can identify that data transfer needs a common language. • I can use binary to create a written message.

Unit 2A: Online Safety (Year 6)

Learning how to navigate the internet in an informed, safe and respectful way.

Outcomes:

- ✓ Discuss a range of 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 can describe how content can still be shared online even if it is set to private.
- ✓ Explain what a 'digital reputation' is and what it can consist of.
- ✓ Understand the importance of capturing evidence of online bullying and can 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 if 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.

Learning Objective	Learning Outcome
To describe online issues that give us negative feelings and know how to get help.	• I can describe scenarios that could make someone feel sad, worried, uncomfortable or frightened. • I can give examples of how to get help online and offline. • I can explain the importance of asking for help.
To explore the impact and consequences of sharing online.	• I can describe how to be kind and show respect for others online.

	• I can identify the risks of sharing things online, even if they are sent privately.
To know how to create a positive online reputation.	• I can describe what a positive online reputation is. • I can explain strategies to create a positive online reputation.
To be able to describe how to capture bullying content as evidence	• I know a range of strategies to collect evidence • I know who to share evidence with to help me
To manage personal passwords effectively	• I know how to create a strong password • I know a range of strategies for managing my passwords • I can explain what to do if my password is shared, lost or stolen
To be aware of strategies to help be protected online	• I can describe simple ways to increase my privacy settings • I can explain why I should keep my software updated • I can describe strategies to identify scams

Unit 3A: Programming – Micro:bit

Clipping blocks together in a program and predicting what will happen while making connections with previously used programming interfaces. Children create animations, recognise inputs/outputs, choose appropriate blocks, and break programs down into smaller steps.

Outcomes:

- ✓ Clip blocks together and predict what will happen. Make connections with previous programming interfaces they've used, e.g. Scratch.
- ✓ Create their own images to make the animation and recognise the difference between 'on start' and 'forever'.
- ✓ Recognise blocks they've used previously, identifying inputs and outputs used and make predictions about how variables work.
- ✓ Choose appropriate blocks to complete the program and attempt the challenges independently.
- ✓ Break a program down into smaller steps, suggesting appropriate blocks and match the algorithm to the program.

Leaning Objectives	Learning Outcomes
To tinker with a new piece of software.	• I can predict what I think something new will do. • I can explore something independently. • I can explain what I found.
To program an animation.	• I can decompose an animation into a series of images. • I can explain the difference between 'on start' and 'forever' blocks. • I can choose the blocks I need for my program.

To recognise coding structures.	• I can identify some code blocks. • I can predict what a block or program does. • I can explain how and why a program works.
To create a program for a specific task.	• I can recognise code blocks. • I can decompose a program. • I can debug a program.
To create a program.	• I can decompose a program. • I can write an algorithm. • I can debug a program.

Year B

Unit 1B: Programming – Music

Applying programming skills to create sounds and melodies leading to a battle of the band's performance.

Outcomes:

- ✓ Iterate ideas, testing and changing throughout the lesson.
- ✓ Explain what the basic commands do: 'play', 'sleep, '2. times 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 live loop and explain its function. Use samples effectively 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.

Leaning Objectives	Learning Outcomes
To tinker with a new piece of software.	• I can predict what I think something new will do. • I can explore something independently. • I can explain what I found.
To create a program that plays themed music.	• I can use Sonic Pi's basic commands. • I can include a loop in my program. • I can debug simple errors in my code.
To plan a soundtrack program.	• I can decompose the story. • I can plan my program. • I can explain how my program will add to the story.
To program a soundtrack.	• I can work from a plan. • I can use a range of programming commands. • I can explain how my program enhances the scene.
To program music for a specific purpose.	• I can combine known commands. • I can code music with a purpose.

	• I can use repetition in a program. • I can use various forms of output [sound].

Unit 2B: Creating Media – Stop Motion Animation

Storyboarding ideas, taking photographs and editing to create a video animation.

Outcomes:

- ✓ 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.

Leaning Objectives	Learning Outcomes
To understand what animation is	• I understand and can explain what 'animation' means • I can explain the history of animation • I can create my own 19th century animation toy
To understand what stop motion animation is	• I understand and can explain what 'stop motion' means • I understand how to create a short animation • I understand what onion skinning is • I can make small changes to my object to make my animation smoother •
To plan my stop motion video, thinking about the characters I want to use	• I can work collaboratively with others to plan a storyboard for an animation • I can keep my animation idea simple • I can design and create a character that can be used in my animation • I can decompose my story into smaller parts
To create a stop motion animation	• I can create a simple animation following my storyboard plan • I can change my plan to recognise when something is too difficult to animate • I understand the importance of keeping the camera still and making small movements between shots
To edit and assess my stop motion animation	• I can make small changes to my models to make my animation smoother • I can delete frames • I can assess my animation

Unit 3B: Computing Systems and Networks – Search Engines

Research skills and finding accurate information

Outcomes:

- ✓ 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 recognise what to check for.
- ✓ Explain why keywords 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 between book searching and internet searching, explaining the role of web crawlers and recognising that results are rated to decide rank.

Leaning Objectives	Learning Outcomes
To understand what a search engine is and how to use it.	• I can explain what a search engine is. • I can use a search engine to navigate the web. • I can suggest keywords for searching.
To be aware that not everything online is true.	• I can recognise that not everything online is true. • I can understand anyone can create a website. • I can suggest ways of checking validity.
To search effectively.	• I can understand the importance of keywords. • I can use the acronym TASK. • I can use my search skills to answer focused questions.
To create an informative poster.	• I can include a title and at least five facts. • I can choose appropriate pictures, colours and designs. • I can consider fair use. • I can credit people for information, images and videos I use.
To understand how search engines work.	• I can understand the role of a web index. • I can explain what web crawlers are. • I can discuss page rank.