CURRICULUM COVERAGE AND OVERIEW: **SUBJECT: COMPUTING**

KEY STAGE 1 NATIONAL CURRICULUM:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

KEY STAGE 2 NATIONAL CURRICULUM:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

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

Computing curriculum at a glance:

Delivered with support of Teach Computing Curriculum: Curriculum teaching resources (teachcomputing.org)

Delivered with support of Discovery Coding: Discovery Education Coding | Discovery Education UK

	Autumn Term 1	Autumn 2/Spring 1	Spring 2	Summer 1 and 2	Computing skills focus*
Year 1	Computing Systems and Networks: Technology Around Us	Computer Science: Coding – On the Move	Computer Science: Coding: Simple Inputs	Media Creation: Computer Art	Digital writing
Year 2	Computing Systems and Networks: Information Technology Around Us	Computer Science: Coding – Different Sorts of Inputs	Computer Science: Coding – Buttons and Instructions	Media Creation: Digital Photography	Typing School
Year 3	Computing Systems and Networks: Computing Systems and networks – Connecting Computers	Computer Science: Coding - Sequence and Animation	Computer Science: Coding – Conditional Event	Media creation: Stop-frame animation	Desktop Publishing (MS Publisher)
Year 4	Computing Systems and Networks: The Internet	Computer Science: Coding – Introduction to Variables	Computer Science: Coding – Repetition and Loops	Media Creation: Photo Editing	Word Processing (MS Word)
Year 5	Computing Systems and Networks: Systems and Searching	Computer Science: Coding – Speed, Direction and Co-Ordinates	Computer Science: Coding - Random Numbers and Simulations	Media Creation: Video Production	Presentation Skills (MS Powerpoint)
Year 6	Computing Systems and Networks: Communication and Collaboration	Computer Science: Coding – Object Properties	Computer Science: Coding – More Complex Variables	Media Creation: Website creation	Introduction to Spreadsheets (MS Excel)

*Skills Focus will be incorporated into units of work in other subjects. Teach Computing Curriculum units will be used to support this work.

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION
Y1 Au1	Computing Systems and Networks: Technology around us	Learners will develop their understanding of technology and how it can help them in their everyday lives. They will start to become familiar with the different components of a computer by developing their keyboard and trackpad (or mouse) skills. Learners will also consider how to use technology responsibly. 1 **Identify Technology:** Explain technology as something that helps us, locate examples of technology in the classroom, explain how these technology examples help us 2. **Identify a computer and its main parts** Name the main parts of a computer, switch on and log into a computer, use a trackpad to click and drag 3. **Use a trackpad (or mouse) in different ways:** Use a trackpad to open a program, click and drag to make objects on a screen, use a trackpad (or mouse) to create a picture 4. **Use a keyboard to type on a computer.** Say what a keyboard is for, type own name on a computer, save work to a file. 5. **Use a keyboard to edit text:** Open work from a file, use arrow keys to move the cursor, delete letters. 6. (unplugged, e-safety focus) **To create rules for using technology responsibly:** identify rules to keep us safe and healthy when we are using technology in and beyond the home, give examples of some of these rules, discuss how we benefit from these rules	**National curriculum links** • Recognise common uses of information technology beyond school • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies. **Education for a Connected World links** **Health, well-being and lifestyle** • I can identify rules that help keep us safe and healthy in and beyond the home when using technology • I can give some simple examples **Copyright and ownership** • I know that the work I create belongs to me • I can name my work so that others know it belongs to me

5 Key things to know:

- Give examples of technology
- Name some parts of a computer
- Describe how to use a trackpad
- Explain how to use a keyboard to edit text
- Give one rule for using technology safely

KEY VOCABULARY: Technology, computer, laptop, desktop computer, tablet, keyboard, trackpad

ENGLISH LINKS: Children to work on alphabet us, letter sounds and letter names and matching capitals and lowercase letters

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y1 Aut 2/Spr1	Computer Science - Coding: On the Move	• Give instructions to make objects move around a screen • Learn how to make objects move when they are clicked. • Use coding to make things move when they are clicked. • Program something to happen when a program starts. • Program something to happen when something is clicked. 1. Make things Move 2. Fairy Stories 3. Click and Go 4. Another Planet 5. Your own App (start) 6. Tour own App (click)	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Use logical reasoning to predict the behaviour of simple programs.

5 Key things to know:

- how to create instructions that have a moving object at the start of the program
- how to create instructions to make an object move
- how to create instructions that make an object disappear when clicked
- how to create instructions to make an object move when clicked
- learn simple debugging to fix an error

KEY VOCABULARY: program, code, instructions, screen, direction, action, object, apply

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS: Links to direction.

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Building on previous coding unit. Early Years children choose technology for direction. (Beebots)

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION
Y1 Spr 2	Computer Science: Coding - Simple Inputs	• Learn how to make objects disappear when clicked. • Write instructions to make things move when they are clicked. • Use coding to make things move as the program starts. • Learn to design a program by planning what will happen when the program starts and a picture is clicked. • Use what has been learned by devising a program by planning what will happen when the program starts and a picture is clicked. • Begin to learn simple debugging by fixing errors in code. 1. Burst the Bubbles 2. Catch the Fish 3. Magic Castle 4. Emergency! 5. My own App (click and start) 6. My own App (add events) 7. Debugging Exercises	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Use logical reasoning to predict the behaviour of simple programs. • Create and debug simple programs.
5 Key things to know: • how to create instructions that have a moving object at the start of the program • how to create instructions that stop an object moving • how to create instructions that move an object when clicked • how to create instructions that make an object disappear when clicked • learn simple debugging to fix an error			
KEY VOCABULARY: click, code icon, object, action, start, app share ENGLISH LINKS OPPORTUNITIES TO WRITE: instruction writing MATHS LINKS: positional direction OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: B			

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION

Y1 Sum 1&2	Media Creation: Digital Painting	Learners will develop their understanding of a range of tools used for digital painting. They then use these tools to create their own digital paintings, while gaining inspiration from a range of artists' work. The unit concludes with learners considering their preferences when painting with and without the use of digital devices. 1 How can we paint using computers? 2 Using shape and lines 3 Making careful choices 4 Why did I choose that? 5 Painting all by myself 6 Comparing computer art and painting	National curriculum links **KS1 Computing** • Use technology purposefully to create, organise, store, manipulate, and retrieve digital content **KS1 Art and Design** Pupils should be taught: • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space • About the work of a range of artists, craft makers, and designers, describing the differences and similarities between different practices and disciplines and making links to their own work

5 Things to Remember:

KEY VOCABULARY: data, property, group, label, analysis, is/is not, algorithm

ENGLISH LINKS OPPORTUNITIES TO WRITE: instructional writing to start the laptop

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION
Y2 Au 1	Information Technology around us	Learners will develop their understanding of what information technology (IT) is and will begin to identify examples. They will discuss where they have seen IT in school and beyond, in settings such as shops, hospitals, and	National curriculum links

		libraries. Learners will then investigate how IT improves our world, and they will learn about the importance of using IT responsibly. 1. What is IT? Identify examples of computers, describe some uses of computers, identify that a computer is part of IT. 2. IT in school: Identify examples if IT, sort school IT by what it's used for, identify that some IT can be used in more than one way 3. IT in the world. Find examples of information technology, sort IT by where it is found, talk about the uses of IT 4. The benefits of IT: recognise common types of IT, demonstrate how IT devices work together, say why we use IT 5. Using IT safely (e-safety); List different uses of IT, talk about different rules for using IT, Say how rules help keep us safe 6. Using IT in different ways: Identify the choices I make when using IT, use IT for different types of activities, explain the need to use IT in different ways	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Recognise common uses of information technology beyond school • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies **Education for a Connected World links** **Health, well-being, and lifestyle** • I can identify rules that help keep us safe and healthy in and beyond the home when using technology • I can give some simple examples
5 Key things to know: • Give examples of more than type of IT • Give two examples of how IT could be used • Say how to use IT safely • Give examples of IT in school • Give examples of IT at home			
KEY VOCABULARY: Information technology, ENGLISH LINKS OPPORTUNITIES TO WRITE: MATHS LINKS: OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:			
YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**

Y2 Sp 1	Coding - Different Sorts of Inputs	• Learn how to make an object do simple things when keys are pressed on the keyboard. • Learn how to code an object to move around the screen when keys are pressed. • Learn how to move an object on an iPad / tablet screen using 'swipes'. • Learn how to code an object to change direction when different keys are pressed on a keyboard. • Learn how to change an object's direction on an iPad / tablet screen using 'swipes'. • Learn to make your own app or game. • Add your own pictures, and learn to add your own events too. 1. Using the Keyboard 2. Red Riding Hood 3. Snow White 4. Up in the Air 5. Shark Attack 6. Your own App	• Use logical reasoning to predict the behaviour of simple programs. • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Use logical reasoning to predict the behaviour of simple programs.
5 Key things to know: • Know what an algorithm is. • Know how to follow and input simple instructions into Espresso coding. • Be able to follow and input simple instructions into as bee bot. • Write a simple program for the bee bot/ Espresso Coding in answer to a problem posed eg Write a list of instructions to get from one destination to another on a map drawn in a Geography lesson. • Be able to review a list of instructions when they are inputted to bee bot or expresso coding.			
KEY VOCABULARY: ENGLISH LINKS OPPORTUNITIES TO WRITE: MATHS LINKS: OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:			
Y2 Sp 2	Coding - Buttons & Instructions	• Learn how to program buttons to move another object around. • Learn how to program buttons to move another object around, so you can create a simple game.	• Use logical reasoning to predict the behaviour of simple programs.

		• Learn how to give instructions to make objects on the screen move when the program starts. • Learn how to program buttons to move a monster around the screen, seeking items of fruit • Learn to make your own app or game, using click and start events • Learn to make your own app or game, programming objects logically with clear instructions and debugging code when there is a problem **BEE BOTS** • Write a program for BEE Bots around a route. 1. Fly a Helicopter 2. Find Princess Preetha's Necklace 3. Find my Cat! 4. Hungry Migbod 5. Your own App 6. Your own App (choose events) 7. Debugging Exercises	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Use logical reasoning to predict the behaviour of simple programs. •

5 Key things to know:

- Know what an algorithm is.
- Know how to follow and input simple instructions into Espresso coding.
- Be able to follow and input simple instructions into as bee bot.
- Write a simple program for the bee bot/ Espresso Coding in answer to a problem posed eg Write a list of instructions to get from one destination to another on a map drawn in a Geography lesson.
- Be able to review a list of instructions when they are inputted to bee bot or expresso coding.

KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y2 Su 1	Digital photography	Learners will learn to recognise that different devices can be used to capture photographs and will gain experience capturing, editing, and	**National curriculum computing links** **Computing**

	(digital literacy)	improving photos. Finally, they will use this knowledge to recognise that images they see may not be real. It is recommended that you use digital cameras to take photographs in these lessons, so that learners can experience a range of devices. However, tablets or other devices with cameras will also work. This unit uses screenshots from the website https://pixlr.com/x/, but you could also use the Pixlr app if you're using tablets. 1. Taking photographs: recognise what devices can be used to take photographs, talk about how to take a photograph, explain what they did to make a photograph 2. Landscape or portrait? Explain the process of taking a good photograph, take photos in both landscape and portrait format, explain why a photo looks better in landscape or portrait 3. What makes a good photograph? Identify what is wrong with a photograph, discuss how to take a good photograph, improve a photograph by retaking it 4. Lighting. Explore the effect lighting has on a photo, experiment with different light sources, explain why a picture might be unclear 5. Effects. Recognise that images can be changed, use a tool to achieve a desired effect, explain my choices 6, Is it real? Apply range of skills to capture a photo, recognise which photos have been changed, identify which photos are real and which have been changed.	• Use technology purposefully to create, organise, store, manipulate, and retrieve digital content • Recognise common uses of information technology beyond school • Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies **Further national curriculum links** **Art and design** • To develop a wide range of art and design techniques in using colour, pattern, texture, line, shape, form, and space **Education for a Connected World links** • To identify that some images are not real (fake)
		•	•

5 Key things to know:

- Name a device that can be used to take photographs
- Say if a picture is landscape or portrait
- Say why lighting is important when taking photographs
- Name an effect that can be applied to a photograph
- Explain one way in which a photograph could be identified as unreal

KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: More advanced photography in Year 4

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y3 Au 1	Computing Systems and networks – Connecting Computers	Learners will develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. They will also compare digital and non-digital devices. Next, learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches. Finally, learners will discover the benefits of connecting devices in a network. You will need digital devices for learners to interact with during this unit. Lesson 3 requires digital devices with a painting application. Lesson 6 includes a 'network tour', which involves learners identifying key parts of your school network. You will therefore need access to your school's server, switch, and wireless access points. 1 How does a digital device work? 2 What parts make up a digital device? 3 How do digital devices help us? 4 How am I connected? 5 How are computers connected? 6 What does our school network look like? This unit progresses learners' knowledge and understanding of technology by focusing on digital and non-digital devices, and introducing the concept of computers connected together as a network. Following this unit, learners will explore the internet as a network of networks.	National curriculum links **Computing** • use sequence, selection, and repetition in programs; work with variables and various forms of input and output • understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration • select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information **Maths (Lesson 1)**

			• **Number and place value:** solve number problems and practical problems involving these ideas. **Art (Lesson 3)** • to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]

5 Key things to know:

- Explain the term digital device
- Give one way a digital device can help us
- Explain one way in which they themselves are connected
- Explain the role of a component of a network (eg switch, server, wireless access point)
- Locate key parts of the school network

KEY VOCABULARY: digital, device, internet, network, switch, server, wireless access point

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:
OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

Computing

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web; and the opportunities they offer for communication and collaboration
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

Maths (Lesson 1)

- **Number and place value:** solve number problems and practical problems involving these ideas.

Art (Lesson 3)

- to improve their mastery of art and design techniques, including drawing, painting and sculpture with a range of materials [for example, pencil, charcoal, paint, clay]

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION
Y3 Aut 2/Spr 1	Coding - Sequence and Animation	• Program a sequence of actions, making different pieces of code execute at different times. • Program a sequence of objects to appear and disappear at specific times to simulate a physical system. • Practise using time to program a sequence of actions and make simple animation. • Design, write and debug your own app; practise using time in code to create an animation. • Design, write and debug your own app; add different events to make things happen and program actions in a sequence. 1. Alien Sequences 2. Space Travel 3. Traffic Lights 4. Bugs in the Garden 5. Your Own App 6. Your Own App (advanced)	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

5 Key things to know:

- how to log into Discovery Coding.
- how to follow onscreen instructions carefully to complete a task.
- how to advise and help their partner once they have completed the task.
- how to use knowledge from previous tasks for basic skills when tasks become more advanced.
- be able to evaluate a task they have completed.

KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y3 Spr2	Coding - Conditional Event	• Use conditional 'if' statements to program a maze game. • Use conditional 'if' statements to program a maze game; learn to use the tip function to move the ball when the tablet/iPad tips. • Use conditional 'if' statements to program a simple game; use 'if hit' statements to check if objects have collided. • Practise using conditional 'if' statements to program a simple game on a tablet/iPad; use 'if…hit'. statements to check whether objects have collided. • Design and make your own app; practise using conditional events in code and debugging code when there is a problem. • Design and make your own app. Practise using conditional events in code and debugging code when there is a problem. 1. That's Amazing 2. That's Amazing (iPad) 3. Hungry Snake 4. Hungry Octopus 5. Your Own App 6. Your Own App (advanced) 7. Debugging Exercises	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

5 Key things to know:

- how to log into Discovery Coding.
- how to follow onscreen instructions carefully to complete a task.
- how to advise and help their partner once they have completed the task.
- how to use knowledge from previous tasks for basic skills when tasks become more advanced.
- be able to evaluate a task they have completed.

KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**

Y3 Sum	Media Creation: Stop-frame animation	Learners will use a range of techniques to create a stop-frame animation using tablets. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text. It is recommended that you use a tablet for this unit as this makes it simpler for learners to take the photos and do the editing. However, you could use stop-frame animation software on a desktop or laptop if this is what you have available. This unit uses screenshots from iMotion which is an iPad app, but you could also try Stop Motion Studio if you have Android tablets. 1 Can a picture move? 2 Frame by frame 3 What's the story? 4 Picture perfect 5 Evaluate and make it great! 6 Lights, camera, action!	**National curriculum computing links** **Computing** ● Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information ● use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Further national curriculum links** **Literacy links** ● Pupils should be taught to: draft and write by: in narratives, creating settings, characters and plot ● Pupils should be taught to: proof-read for spelling and punctuation errors **History** ● The Roman Empire and its impact on Britain

			<u>Education for a Connected World links</u> **Managing online information** ● I can use key phrases in search engines. ● I can use search technologies effectively. **Copyright and ownership** ● I can explain why copying someone else's work from the internet without permission can cause problems. ● I can give examples of what those problems might be. ● When searching on the internet for content to use, I can explain why I need to consider who owns it and whether I have the right to reuse it. ● I can give some simple examples. ● I can give examples of content that is permitted to be reused. ● I can demonstrate the use of search tools to find and access online content which can be reused by others.
5 Key things to know: • Explain that animations are still images stitched together • Explain that a frame is one of these images			

- Explain the importance of keeping the camera still
- Name a piece of video editing software
- Explain one way to make an effective stop-frame animation

KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y4 Au 1	Computing systems and networks – the Internet	Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. They will learn that the World Wide Web is part of the internet, and will be given opportunities to explore the World Wide Web for themselves in order to learn about who owns content and what they can access, add, and create. Finally, they will evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. This unit requires devices with an internet connection. Chrome Music Lab is used in one lesson to demonstrate content which can be produced on the World Wide Web. 1 Connecting networks 2 What is the internet made of? 3 Sharing information 4 What is a website? 5 Who owns the web? 6 Can I believe what I read?	National curriculum links **Computing** • Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs,

			systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **PSHE (Lesson 6)** • Evaluating content for honesty and accuracy Education for a Connected World links **Managing online information** • I can analyse information to make a judgement about probable accuracy, and I understand why it is important to make my own decisions regarding content and that my decisions are respected by others. • I can explain what is meant by fake news, e.g. why some people will create stories or alter photographs and put them online to pretend something is true when it isn't. • I can describe ways of identifying

			when online content has been commercially sponsored or boosted, (e.g. by commercial companies or by vloggers, content creators, or influencers). • I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful.

KEY VOCABULARY: Internet, search, world wide web

ENGLISH LINKS OPPORTUNITIES TO WRITE: Various opportunities to type up, edit and correct sentences in a word document.

MATHS LINKS: Creating tables

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Y1 & Y3 –National curriculum links

5 key things to know

- Describe one way in which the World Wide Web and the Internet are the same
- Describe one way in which the World Wide Web and the Internet are different
- Explain how to search the World Wide Web
- Explain how to add to the WWW
- Give one way in which to tell that information on the WWW may be untrue

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y4 Sp 1	Coding – Introduction to variables	• Learn how to make variables to keep track of the score in a game. • Practise using variables to keep track of the score in a game. • Practise using conditional events in your code.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by

		• Learn how to count and total up objects and prices, simulating a shop till. • Practise using variables to keep track of the score in a game designed for an iPad/tablet. • Use what has been learnt so far to make your own app or game that uses variables. • Learn how to debug by fixing the mistakes in code. 1. Pop Game 2. Catch the Coconuts 3. Shop Till 4. Pirate Gold 5. Healthy Eating 6. Your own App 7. Debugging	decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
KEY VOCABULARY: variable, condition, score, start, click, place, time ENGLISH LINKS OPPORTUNITIES TO WRITE: To orally explain their apps to the class. MATHS LINKS: Position and direction, calculation, time, variables. OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Y1 – Y3 Coding			
5 key things to know • Code is made up of algorithms • A variable is something within code that can be changed • Variables are contained with different types of block code • Conditional events are triggered by users • Conditional events can be used to keep scores			
YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y4 Sp2	Coding – Repetition and Loops	• Learn why we need loops. • Make simple loops to count up and down. • Make a stopwatch app that you can use to time things. • Make a countdown app that counts down in seconds. • Make two different space based animations that use loops.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by

		• Learn to use loops to create animations that repeat infinitely. • Use what has been learnt so far to create own apps and animations. 1. Why use a Loop? 2. Stopwatch 3. Countdown Timer 4. Loops in Space 5. Animation with Loops 6. Your own App	decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
KEY VOCABULARY: variable, stop, timer, multiples, negative, repetition, loops ENGLISH LINKS OPPORTUNITIES TO WRITE: MATHS LINKS: Variable, negative numbers, loops and repetition OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Y1 – Y3 Coding			
5 things to know • Loops in code make coding more efficient • Variables are things in code that can be altered • Repetition is when code makes things happen more than once • Loops can make animations repeat • Loops, repetitions and variables can be used to drive animations			
YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y4 Sum	Media Creation: Photo Editing	Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. They will consider the impact that editing images can have, and evaluate the effectiveness of their choices. Overview of lessons 1 Changing digital images	Computing national curriculum links • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including

		2 Recolouring 3 Cloning 4 Combining 5 Creating 6 Evaluating	collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Education for a Connected World links** **Self-image and identity** • I can describe ways in which people might make themselves look different online
KEY VOCABULARY: Animation, evaluate, compare, stop-motion, software, ENGLISH LINKS OPPORTUNITIES TO WRITE: Evaluation of the different animation software and techniques. MATHS LINKS: Timing			
5 things to remember •			
YR GROUP / TERM	**TOPIC**	**KEY CONTENT KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y5 Au 2	Computing Systems and networks – Systems and searching	Learners develop their understanding of computer systems and how information is transferred between systems and devices. Learners consider small-scale systems as well as large-scale systems. They explain the input, output, and process aspects of a variety of different real-world systems. Learners discover how information is found on the	National curriculum links • Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web,

		World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. 1 Systems 2 Computer systems and us 3 Searching the web 4 Selecting search results 5 How search results are ranked 6 How are searches influenced?	and the opportunities they offer for communication and collaboration • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Education for a Connected World links • I am aware that a person's online activity, history or profile (their 'digital personality') will affect the type of information returned to them in a search or on a social media feed, and how this may be intended to influence their beliefs, actions and choices. • I can explain how search engine rankings are returned and can explain how they can be influenced (e.g. commerce, sponsored results) •

5 Key things to know:

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KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:
MATHS LINKS: It could also be a Maths topic.

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Year 4- Webpage Design.

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION
Y5 Sp 2	Coding- Speed, Direction and Co-ordinates	• Set values in code to program the speed of an object. • Change an object's direction and heading. • Learn to change its co-ordinates to move it around. • Set friction to affect the speed and movement of a car in a driving game. • Design and make your own app; practise assigning values in code to control the movement of objects. • Learn how to debug by fixing the mistakes in code. 1. Faster and Slower 2. Simple Driving Game 3. Around the World 4. Parachuting Cows (IPad/ tablet only) 5. Driving Game 6. Make Your own App	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

5 Key things to know:

- Code can be used to:
  - Change an objects speed.
  - Steer an object left and right.
  - Add obstacles for an object to encounter.
  - Make an object respond to movement.
- Code needs to be debugged if mistakes occur.

KEY VOCABULARY: numbers, debug, object, action, speed, acceleration, deceleration, angle, speed, heading, if, assign, decompose, iteratively, co-ordinates, condition, negative numbers, Y axis, X axis, friction, input, rotate

ENGLISH LINKS OPPORTUNITIES TO WRITE: N/A

MATHS LINKS: Position and direction, measurements, angles

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Coding Y1-Y4

YR GROUP / TERM	TOPIC	KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION	SKILLS ACQUISITION

Y5 Su 1	Coding- Random Numbers and Simulations	• Make and use random numbers in apps. • Code a game that uses random numbers to move objects in random directions. • Practice writing code which uses random numbers to move objects at random speeds, and then create a game. • Create a tennis game, using random directions. • Create a pinball app, using random directions. • Program your own app, choosing your own objects and events; practice using random numbers to control the movement of objects. 1. Making Random Numbers 2. Caterpillar Catcher 3. Cross the Road 4. Ping Pong 5. Pinball **6.** Make Your Own App	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

5 Key things to know:

- Code can be used to:
  - Generate random numbers.
  - Move objects in random directions.
  - Move objects at random speeds.
  - Create games with random moving objects.
- Code needs to be debugged if mistakes occur.

KEY VOCABULARY: variable, generated, random, intervals, time, simulate, random number, generate, angle, coordinates, degrees, value, condition, score, mouse move, event, match, bounce

ENGLISH LINKS OPPORTUNITIES TO WRITE: N/A

MATHS LINKS: Probability, addition, algebra, co-ordinates, calculation

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Coding Y1 – Y4

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y5 Sum	Media Creation: Video Production	Learners will learn how to create short videos by working in pairs or groups. As they progress through this unit, they will be exposed to topic-	**National Curriculum Links: Computing**

		based language and develop the skills of capturing, editing, and manipulating video. Learners are guided with step-by-step support to take their idea from conception to completion. At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video. To teach this unit, you will need video recording equipment such as video cameras or tablets with video capabilities. The recommended editing software is Microsoft Clipchamp, 1 What is video? 2 Filming techniques 3 Using a storyboard 4 Planning a video 5 Importing and editing video 6 Video evaluation	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information • Use technology safely, respectfully, and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

5 Key things to know:

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KEY VOCABULARY:

ENGLISH LINKS OPPORTUNITIES TO WRITE:

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS:

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Y6 Au 1	Computing Systems and Networks: Communication and Collaboration	In this unit learners explore how data is transferred over the internet. Learners initially focus on addressing, before they move on to the makeup and structure of data packets. Learners then look at how the internet facilitates online communication and collaboration; they complete shared projects online and evaluate different methods of communication. Finally, they learn how to communicate responsibly by considering what should and should not be shared on the internet. **Note:** Some of the content in this unit was previously included in the Year 5 – 'Computer systems and networks' unit, so some learners may have already completed similar activities. Where this is the case, the context for the activity has been changed. L1 Internet addresses L2 Data packets L3 Working together L4 Shared working L5 How we communicate L6 Communicating responsibly	**National curriculum links** • Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact **Education for a Connected World links** • I can describe and assess the benefits and the potential risks of sharing information online. • I can assess and justify when it is acceptable to use the work of others • I can give examples of content that is permitted to be reused

5 key things to know:

KEY VOCABULARY: technology, internet, website, personal safety, SMART rules, search, search engine, spam, emails, passwords, cyberbullying, personal information, confiding, secure, fake, propaganda.

ENGLISH LINKS OPPORTUNITIES TO WRITE: Design a poster to explain to LWKS2 about the dangers of going online.

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Web safety Y1 – 5.

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y6 Au	Digital Music Delivered by Musichands	• Use appropriate software. • Locate digital content. • Credit sources. • Import digital music into editing software. • Use editing software to create digital music. 1. Music Tools 2. Synthesisers 3. Intuitive Touch Technology 4. Musical Structures 5. Contemporary Music Technology	• Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.

5 keys things to know:

- **Modern musicians use a variety of apps such as Garageband and Launchpad.**
- **Garageband gives access to hundreds of different instruments.**
- **Launchpad uses beats and baselines to produce DJ style music quickly and easily.**
- **Electronic music can be changed quickly by cutting or editing.**
- **Music can be stored and shared very easily online.**

KEY VOCABULARY: Garageband, Figure, LaunchPad, Auxy, DM1, rhythm, beats, apps, genre, cut, edited, extended and software.

ENGLISH LINKS OPPORTUNITIES TO WRITE: N/A

MATHS LINKS: N/A

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Reference previous music genres in previous year groups and how these apps help them to be re-created.

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y6 Aut 1/Spr 2	Coding – Object Properties	• Design a game using swipe and touch screen. • Adapt and make changes to own game – debug. • Move an object around the screen by changing parameters. • Make a game using random numbers and object parameters. • Learn how to move an object around the screen by changing parameters. • Use what you have learnt so far to make your own app or game. 1. Sheepdog 2. Football 3. Space Travel 4. Don't feed the birds 5. Golf Game 6. Your own App	• Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

5 key things to know

- An algorithm is just a set of instructions for a computer to follow.
- Parameters are limits on an instruction i.e the ball can only go along the y axis +6 to -6
- Computers are very good at applying formulae correctly if given the correct information.
- Debugging means to fix problems.

To fix a problem, programmers must check a line of code – an instruction – at a time.

KEY VOCABULARY: parameters, variables. Formulae, code, program, app, convert, debug, loops, functions, simulating, logical, reasoning, Boolean.

ENGLISH LINKS OPPORTUNITIES TO WRITE: N/A

MATHS LINKS: N/A

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Coding in Year 2 – 5.

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y6 Sp 2	Coding – More Complex Variables	• Use variables and formulae in code to create an area calculator. • Code functions which use formulae to convert one measurement into another. • Use variables in more complex ways to make a unit conversion app, converting miles to km. • Use variables and loops to solve maths challenges. • Find the current time and create clock apps. • Program an app, choosing objects and events; practise using formula in code. • Learn how to debug by fixing the mistakes in code. 1. Area Calculator 2. Unit Conversion (cm to inches) 3. Unit Conversion (miles to km) 4. Maths Challenges using Variables 5. Clock Apps 6. Your own App 7. Debugging Exercises	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

5 key things to know:

- An algorithm is just a set of instructions for a computer to follow.
- Boolean expressions show if something is true or false.

- Computers are very good at applying formulae correctly if given the correct information.
- Debugging means to fix problems.
- To fix a problem, programmers must check a line of code – an instruction – at a time.

KEY VOCABULARY: variables. Formulae, code, program, app, convert, debug, loops, functions, simulating, logical, reasoning, Boolean.

ENGLISH LINKS OPPORTUNITIES TO WRITE: N/A

MATHS LINKS: Familiar vocab such as formulae & sequence

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: Coding Year 2 – 5 and earlier unit in Year 6.

YR GROUP / TERM	**TOPIC**	**KEY CONTENT / LESSON SEQUENCE KNOWLEDGE ACQUISITION**	**SKILLS ACQUISITION**
Y6 SUM	Media Creation: Website creation	Learners will be introduced to creating websites for a chosen purpose. Learners identify what makes a good web page and use this information to design and evaluate their own website using Google Sites. Throughout the process, learners pay specific attention to copyright and fair use of media, the aesthetics of the site, and navigation paths. It is recommended that learners use laptop or desktop computers for this unit of work. The unit has been based on the use of Google Sites, which is free to use with any Google account. If your school uses the free Google Workspace for Education, your Google administrator can create accounts for pupils and also ensure that the Google Sites feature is enabled. If you don't have a school Google Workspace account, your school may choose to set one up or you may opt to create individual Google accounts for your learners to use. Whichever option you choose, it should be in line with your school's policies. 11 What makes a good website?	**National curriculum links** • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content • Select, use, and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems, and content that accomplish given goals, including collecting, analysing, evaluating, and presenting data and information. • use technology safely, respectfully, and responsibly;

		2 How would you lay out your web page? 3 Copyright or copyWRONG? 4 How does it look? 5 Follow the breadcrumbs 6 Think before you link!	recognise acceptable/unacceptable behaviour. **English links** • Writing composition: Identifying the audience for and purpose of the writing, selecting the appropriate form, and using other similar writing as models for their own. **Education for a Connected World links** **Online relationships** • I can use the internet with adult support to communicate with people I know. (EY-7) **Managing information online** • I can navigate online content, websites, or social media feeds using more sophisticated tools to get to the information I want (e.g. menus, sitemaps, breadcrumb-trails, site search functions). (11-14) **Copyright and ownership** • I can explain why copying someone else's work from the internet without permission can cause problems. • I can give examples of what those problems might be. • When searching on the internet for content to use, I can explain

			why I need to consider who owns it and whether I have the right to reuse it. • I can give some simple examples. • I can assess and justify when it is acceptable to use the work of others. • I can give examples of content that is permitted to be reused. • I can demonstrate the use of search tools to find and access online content which can be reused by others. • I can demonstrate how to make references to and acknowledge sources I have used from the internet. • I can explain the principles of fair use and apply this to case studies. (11-14)

5 key things to know:

KEY VOCABULARY: technology, internet, website, personal safety, SMART rules, search, search engine, spam, emails, passwords, cyberbullying, personal information, confiding, secure, fake, propaganda.

ENGLISH LINKS OPPORTUNITIES TO WRITE: Design a poster to explain to LWKS2 about the dangers of going online.

MATHS LINKS:

OPPORTUNITIES FOR RECAP (HOW WE ARE EMBEDDING SKILLS / KNOWLEDGE / VOCAB FROM PREVIOUS TOPICS / YEAR GROUPS: