



Year 4 Computing Autumn 1 Computing systems and networks: Collaborative learning	
Previous learning	
<p>Before starting this unit, you might want to check that children can recall:</p> <p>Touch typing is the fastest way to type. Computers often work together. That 'log in and log out' means to begin and end a connection with a computer. Creating something on a computer can be more easily saved and shared than a paper version.</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
<p>By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.</p>	<p>Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.</p>
Lesson 1	Teamwork
	<p>To understand that software can be used to work online collaboratively.</p> <p>I understand I can work with a partner without being in the same room. I can contribute to teamwork sensibly and responsibly. I can recognise what behaviour is appropriate when collaborating online.</p>
Lesson 2	Sharing a document
	<p>To understand how to contribute to someone else's work effectively.</p> <p>I can share my work with other people and access documents shared with me. I can understand that it is important to be positive and supportive of my classmates. I can use collaborative word processing software to make suggestions or comments on someone else's work.</p>
Lesson 3	Slide presentations
	<p>To understand how to create effective presentations.</p> <p>I can understand how to use presentation software. I can include images and text in my slides. I can use transitions and animations to make my slides more interesting.</p>
Lesson 4	Google Forms
	<p>To understand how to create and share Google Forms.</p> <p>I can understand how to create a Google Form. I can understand why a survey might be useful. I can share a form with my class.</p>
Lesson 5	Shared spreadsheets
	<p>To understand how to use a shared spreadsheet to explore data.</p> <p>I can export data to a spreadsheet.</p>

	<p>I can highlight data using conditional formatting.</p> <p>I can use a spreadsheet to calculate averages and sums of numbers.</p>
Vocabulary	
<p>Animations, Average, Bar chart, Collaboration, Comment, Contribution, Data, Edited, Email account, Format, Freeze, Icon, Images, Insert, Link, Multiple choice, Numerical data, Pie chart, Presentations, Resolved, Reviewing comments, Share, Slides, Software, Spreadsheets, Suggestions, Survey, Teamwork, Themes, Transitions</p>	

<p>Year 4 Computing Autumn 2 Programming 1: Further coding with Scratch</p>	
Previous learning	
<p>Before starting this unit, you might want to check that the children can recall:</p> <p>An 'algorithm' is a series of instructions put in an exact order. 'Decomposition' means breaking a problem into manageable chunks. A 'loop' is a code tool to repeat something in a program. Scratch is a block programming language.</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
<p>By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.</p>	<p>Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.</p>
Lesson 1	Scratch reminder
	<p>To recall the key features of Scratch.</p> <p>I can name the main areas of Scratch. I can recognise how to adjust my sprite's orientation in Scratch. I can create a simple script for a new sprite to my stage.</p>
Lesson 2	Identifying what code does
	<p>To understand how a Scratch game works by using decomposition to identify key features.</p> <p>I can recognise that a sprite may contain more than one script. I can identify the parts of a Scratch game. I can explain the term 'decomposition'.</p>
Lesson 3	Introduction to variables
	<p>To recognise what a variable is.</p> <p>I can use the 'ask' block in Scratch. I can understand what variable means. I can create a variable in Scratch to store an answer.</p>
Lesson 4	Making a variable
	<p>To understand how to make a variable in Scratch.</p> <p>I can create a variable and use it to store information. I can 'call' a variable within my program. I can recognise that variables can be words or numbers.</p>

Lesson 5	Times tables project
	<p>To create a quiz using variables.</p> <p>I can create a range of questions. I can use the 'if/else' block to check whether an answer is correct. I can use the 'score' variable to calculate the total number of correct answers. I can make my quiz engaging and exciting.</p>
Vocabulary	
code block, conditional statement, coordinates, decompose, feature, information, negative number, orientation, position, program, project, script, sprite, stage, tinker, variable	

Year 4 Computing Spring 1 Creating media: Website design	
Previous learning	
<p>Before starting this unit, you might want to check that children can recall:</p> <p>Can you remember and demonstrate how to login to your email account? (type username and password then click sign in.) Can you remember how to make text bold, italic or underlined? (use the icons in the toolbar.) What is the easiest way to copy and paste on a document? (CTRL C + CTRL V.) Can you name any software that can be used to create a presentation? (Google Slides, Microsoft Powerpoint.)</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.	Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.
Lesson 1	Getting to know Google Sites
	<p>To explore the features of Google Sites.</p> <p>I can create a webpage using Google Sites. I can add content to a webpage. I can use a range of features in Google Sites and record my progress.</p>
Lesson 2	Book review webpage
	<p>To plan content for a collaborative webpage.</p> <p>I can plan the content for my webpage. I can use different features on Google sites. I can work collaboratively.</p>
Lesson 3	Creating a webpage
	<p>To create a webpage as part of a collaborative class website.</p> <p>I can build a webpage. I can include many features of Google Sites. I can make my page informative and interactive.</p>
Lesson 4	Planning my website

	<p>To plan and create a website.</p> <p>I can plan a website in detail, considering the Google Sites features that I will include. I can start to build a website based on my designs. I can consider information that other people would find useful and interesting.</p>
Lesson 5	Creating my website
	<p>To create and evaluate a website.</p> <p>I can build a website with four web pages. I can use a range of features on Google Sites. I can evaluate a website.</p>
Vocabulary	
<p>Assessment, Audience, Checklist, Collaboration, Content, Contribution, Create, Design, Embed, Evaluate, Features, Google Sites, Hobby, Homepage, Hyperlinks, Images, Insert, Online, Plan, Progress, Published, Record, Review, Style, Subpage, Tab, Theme, Web page, Website, World Wide Web</p>	

<p>Year 4 Computing Spring 2 Skills showcase: HTML</p>	
Previous learning	
<p>Before starting this unit, you might want to check that children can recall:</p> <p>What does 'www' in a web address stand for? (World Wide Web.) What is the first or main page of a website called? (Homepage.) What is the text at the top of a website known as? (Header.)</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
<p>By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.</p>	<p>Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.</p>
Lesson 1	Introduction to HTML
	<p>To understand and identify examples of HTML tags.</p> <p>I can identify that web pages are built using different programming languages, and one of them is HTML. I can identify some HTML tags. I can recall that each line of code has a start tag and an end tag.</p>
Lesson 2	Remixing HTML
	<p>To change HTML code for a specific purpose.</p> <p>I can identify and remix some parts of HTML code. I can change the text size and content.</p>
Lesson 3	Changing HTML and CSS
	<p>To change the HTML and CSS to alter the appearance of an object on the web.</p> <p>I can change the size of some of the elements. I can change the colour of some of the elements.</p>

Lesson 4	Website hacking
	<p>To understand and explore complex components of a web page.</p> <p>I can use the inspect elements tool to explore the different components that make up a web page.</p> <p>I can spot and identify a fake news story on a web page.</p> <p>I can explain that the changes I have made to a web page are not permanent.</p>
Lesson 5	Replacing images
	<p>To alter key elements on a web page including text and images.</p> <p>I can find images that are permitted for reuse.</p> <p>I can use the 'Inspect Elements' tool.</p> <p>I can change the elements of a website in regard to both the text and images.</p>
Vocabulary	
Code, Component, Content, Copyright, CSS, End tag, Fake news, Hacking, Heading, Headline, Hex code, HTML, Input, Internet browser, Output, Paragraph, Permission, Remixing, Script, Start tag, Tags, Text, URL, Webpage	

Year 4 Computing Summer 1 Programming 2: Computational thinking	
Previous learning	
<p>Before starting this unit, you might want to check that children can recall:</p> <p>When programming, what is it called when you break something down into smaller chunks? (Decompose.)</p> <p>What do you call a set of instructions that tell a computer what to do? (A code.)</p> <p>When the code doesn't work, what is the process called to fix it? (Debugging.)</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.	Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.
Lesson 1	What is computational thinking?
	<p>To understand that computational thinking is made up of four key strands.</p> <p>I can identify the four strands that make up computational thinking.</p> <p>I can recall that problems can be made easier if I use computational thinking.</p>
Lesson 2	Decomposition
	<p>To understand what decomposition is and how to apply it to solve problems.</p> <p>I can decompose a problem.</p> <p>I can use decomposition to figure out what Scratch code does.</p> <p>I can decompose a problem to figure out which code blocks might have been used.</p>
Lesson 3	Abstraction and pattern recognition
	<p>To understand what pattern recognition and abstraction mean.</p> <p>I know how to recognise patterns.</p>

	I can use past experiences to understand how to solve new problems. I understand how to abstract key information.
Lesson 4	Algorithm design
	To understand how to create an algorithm and what it can be used for. I can create an algorithm for drawing a square. I can use my algorithm to write a script using Scratch. I can use pattern recognition to modify my script to draw different shapes.
Lesson 5	Applying computational thinking
	To combine computational thinking skills to solve a problem. I can apply decomposition, pattern recognition, abstraction and algorithm design to problems. I can work with a partner and discuss how to solve a problem.
Vocabulary	
Abstraction, Algorithm, Code, Computational thinking, Decomposition, Input, Logical reasoning, Output, Pattern recognition, Script, Sequence, Variable	

Year 4 Computing Summer 2 Data handling: Investigating weather	
Previous learning	
<p>Before starting this unit, you might want to check that the children can recall:</p> <p>A database is a structured and orderly collection of data. A record shows a set of information that is organised into categories. A field is a category used to organise data. Data refers to information or values, often held in a record, which may consist of text or numbers. How to sort and filter databases to retrieve information.</p>	
Substantive Knowledge in Computing	Disciplinary knowledge in Computing
By the end of KS2, children will know how different technology is used in our lives; they will have developed knowledge of Digital Literacy; they will understand the basic principles of programming and coding and they will know how to stay safe using the internet.	Our Computing curriculum will equip children not only with the skills and knowledge to learn and grow in the digital world we live in, but more importantly in a safe and secure manner. They will be able to apply the British Values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.
Lesson 1	What's the weather?
	To log data taken from online sources in a spreadsheet. I know what the weather is and what can affect it. I understand the importance of data in weather forecasting. I can search the internet for weather data. I can record this data in a spreadsheet.
Lesson 2	Weather stations
	To design a weather station. I understand what sensor data is. I know different units of measurement. I can design a device to sense and record the weather.

Lesson 3	Extreme weather
	<p>To design an automated machine to respond to sensor data.</p> <p>I know that sensor data can be used to help predict extreme weather. I can use keywords to effectively search for information on the Internet. I can write an algorithm for an automated machine which uses selection.</p>
Lesson 4	Satellites and forecasts
	<p>To understand how weather forecasts are made.</p> <p>I know how weather is predicted. I can use search engines to find information. I can record data in a spreadsheet.</p>
Lesson 5	Presenting forecasts
	<p>To use tablets or digital cameras to present a weather forecast.</p> <p>I know what information is included in a weather forecast. I can write a short script for a weather forecast. I can create a short video.</p>
Vocabulary	
<p>Accurate, Backdrop, Climate zone, Cold, Collaboration, Condensation, Cylinder, Degrees, Evaporation, Extreme weather, Forecast, Heat sensor, Lightning, Measurement, Pinwheel, Presenter, Rain, Satellite, Script, Sensitive, Sensor, data, Solar panel, Tablet/Digital camera, Temperature, Thermometer, Tornado, Warm, Weather, Weather forecast, Wind</p>	