Grange Primary Academy
The best in everyone™
Part of United Learning

Primary Computing & e-Safety

Primary Computing & e-Safety

Intent

Within an ever changing and technological world, Grange Primary Academy understands and values the importance of teaching Computing from a young age. We acknowledge that future generations will rely heavily on their computational confidence and digital skills in order to support their progress within their chosen career paths.

Therefore, it is our school's aim to equip children with the relevant skills and knowledge that is required to understand the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) and to offer a broad and balanced approach to providing quality first teaching of this subject.

Computing is an integral part to a child's education and everyday life. Consequently, we intend to support our pupils to access and understand the core principles of this subject through engaging and activities. Whilst ensuring they understand the advantages and disadvantages associated with online experiences, we want children to develop as respectful, responsible and confident users of technology, aware of measures that can be taken to keep themselves and others safe online.

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Implementation

We follow a broad and balanced Computing curriculum (based upon the National Curriculum) that builds on previous learning and provides both support and challenge for learners.

Computing at Grange Primary Academy at Key Stage 1 and 2 is taught across six units in each year group with the intention that each unit is taught over a half term. In EYFS, it is taught through by using technology to solve problems and produce creative outcomes. We follow the Teach Computing scheme of work.

All lessons at Grange Primary Academy are crafted around Rosenshine's Ten Principals of Instruction and these inform the structure of each lesson in the United Learning Curriculum for Computing. We believe in the importance of co-operative learning and use Kagan structures to enable this. Our methods of teaching and learning are chosen to support the development of lively and enquiring minds, which critique and question.

The school uses the commercial scheme 'Teach Computing'. This was selected because long term plans detail the' Powerful Knowledge' that is taught and ensure that there is a clear progression in key skills, both across a year and from year to year. Each unit provides opportunities for developing computational thinking concepts by using approaches including tinkering. Learning sequences also provide opportunities to develop creativity and solving problems within a meaningful context for applying what is learnt. This scheme also provides opportunities to develop pupil's conceptual understanding alongside opportunities for them to be creative and to apply taught skills, as they become digitally literate. Learning through experimentation, discussion and making are at the core of the scheme. This 'hands on', practical approach supports the development of long term memory and gives pupils with limited technical English a context in which to learn and use new vocabulary

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Computing National curriculum expectations

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental 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

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Pupils should be taught to:

- Communication and language development. Which involves giving children opportunities to experience a rich language environment; to develop their confidence and skills in expressing themselves; and to speak and listen in a range of situations

- Personal, social and emotional development. Which involves helping children to develop a positive sense of themselves, and others; to form positive relationships and develop respect for others; to develop social skills and learn how to manage their feelings; to understand appropriate behaviour in groups; and to have confidence in their own abilities

- Mathematics. Which involves providing children with opportunities to develop and improve their skills in counting, understanding and using numbers, calculating simple addition and subtraction problems; and to describe shapes, spaces, and measure

- Understanding the world. Which involves guiding children to make sense of their physical world and their community through opportunities to explore, observe and find out about people, places, technology and the environment

- Expressive arts and design. Which involves enabling children to explore and play with a wide range of media and materials, as well as providing opportunities and encouragement for sharing their thoughts, ideas and feelings through a variety of activities in art, music, movement, dance, role-play, and design and technology

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National Curriculum Subject content Subject content KS1 (Years 1 and 2)

Pupils should be taught to:

- 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

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National Curriculum Subject content Subject content KS2 (Years 3, 4, 5 and 6)

Pupils should be taught to:

- 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

National Curriculum Subject content Subject content KS3

Pupils should be taught to:

- design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems

- • understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem

- • use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions

- • understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]

- • understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems

- • understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

- • undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users

- • create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability

- • understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

Primary Computing & e-Safety

This document is built upon:

- **Computing:** The '[Teach Computing](#)' Curriculum
- **E-Safety:** Education for a Connected World and [Project Evolve](#),

The document includes:

- [Overview](#)
- [EYFS](#) (e-Safety only)
- [Year 1](#)
- [Year 2](#)
- [Year 3](#)
- [Year 4](#)
- [Year 5](#)
- [Year 6](#)
- [Resources required](#)

United Curriculum: Computing (Teach Computing)

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn 1	Computing systems and networks **Technology around us**	Computing systems and networks **IT around us**	Computing systems and networks **Connecting computers**	Computing systems and networks **The internet**	Computing systems and networks **Sharing information**	Computing systems and networks **Communication**
Autumn 2	Creating media **Digital painting**	Creating media **Digital photography** Art – Digital art	Creating media **Animation** Science – Plants Geography – Investigation mountains and volcanoes	Creating media **Photo editing**	Creating Media **Vector drawing**	Programming **Variables in games**
Spring 1	Programming **Moving a robot** Geography – Here I am	Programming **Robot algorithms**	Programming **Sequence in music**	Data and information **Data logging** Science – States of matter	Programming **Selection in physical computing** DT – Mechanisms	Creating Media **3D modelling** Art – Sculpture
Spring 2	Data and information **Grouping data** Science – Everyday materials	Data and information **Pictograms** Science – Living things and their habitats	Data and information **Branching databases** Science – Living organisms	Creating media **Audio editing** Science – Sound	Programming **Selection in quizzes**	Data and information **Spreadsheets**
Summer 1	Creating media **Digital writing**	Creating media **Making music** Science – Living things and their habitats	Programming **Events and actions**	Programming **Repetition in shames**	Creating media **Video editing**	Programming **Sensing** Science – Functions of the human body
Summer 2	Programming **Introduction to animation** D&T – Moving pictures	Programming **Introduction to quizzes**	Creating media **Desktop publishing** Geography – Looking at Europe	Programming **Repetition in games**	Data and information **Flat file databases** Geography – Climate across the world	Creating media **Webpage creation**

EYFS: e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self Image and Identity**	•I can recognise, online or offline, that anyone can say 'no' - 'please stop' - 'I'll tell' - 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset.
2	**Online relationships**	•I can recognise some ways in which the internet can be used to communicate. •I can give examples of how I (might) use technology to communicate with people I know
3	**Online reputation**	•I can identify ways that I can put information on the internet.
4	**Online bullying**	•I can describe ways that some people can be unkind online. •I can offer examples of how this can make others feel
5	**Managing online information**	•I can talk about how to use the internet as a way of finding information online •I can identify devices I could use to access information on the internet..

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 To identify technology	• I can explain how these technology examples help us • I can explain technology as something that helps us • I can locate examples of technology in the classroom	
2 To identify a computer and its main parts	• I can name the main parts of a computer • I can switch on and log into a computer • I can use a mouse to click and drag	• Prior to pupils logging onto the computer: I can explain that passwords are used to protect information, accounts and devices.
3 To use a mouse in different ways	• I can click and drag to make objects on a screen • I can use a mouse to create a picture • I can use a mouse to open a program	
4 To use a keyboard to type	• I can save my work to a file • I can tell you that writing on a computer is called typing • I can type my name on a computer	• I can explain why work I create using technology belongs to me • I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it''). • I can save my work under a suitable title or name so that others know it belongs to me (e.g. filename, name on content). • I understand that work created by others does not belong to me even if I save a copy
5 To use the keyboard to edit text	• I can delete letters • I can open my work from a file • I can use the arrow keys to move the cursor	
6 To create rules for using technology responsibly	• I can discuss how we benefit from these rules • I can give examples of some of these rules • I can identify rules to keep us safe and healthy when we are using technology in and beyond the home	• If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help. • I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable, worried or frightened. • I can explain rules to keep myself safe when using technology both in and beyond the home.
* Additional E Safety Lesson		• I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching. • I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke.

Year 1: Autumn 2

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain what a given command will do	• I can match a command to an outcome • I can predict the outcome of a command on a device • I can run a command on a device	
2	To act out a given word	• I can follow an instruction • I can give directions • I can recall words that can be acted out	
3	To combine forwards and backwards commands to make a sequence	• I can compare forwards and backwards movements • I can predict the outcome of a sequence involving forwards and backwards commands • I can start a sequence from the same place	
4	To combine four direction commands to make sequences	• I can compare left and right turns • I can experiment with turn and move commands to move a robot • I can predict the outcome of a sequence involving up to four commands	
5	To plan a simple program	• I can choose the order of commands in a sequence • I can debug my program • I can explain what my program should do	
6	To find more than one solution to a problem	• I can identify several possible solutions • I can plan two programs • I can use two different programs to get to the same place	

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 To describe what different freehand tools do	• I can draw lines on a screen and explain which tools I used • I can make marks on a screen and explain which tools I used • I can use the paint tools to draw a picture	
2 To use the shape tool and the line tools	• I can make marks with the square and line tools • I can use the shape and line tools effectively • I can use the shape and line tools to recreate the work of an artist	
3 To make careful choices when painting a digital picture	• I can choose appropriate shapes • I can create a picture in the style of an artist • I can make appropriate colour choices	
4 To explain why I chose the tools I used	• I can choose appropriate paint tools and colours to recreate the work of an artist • I can say which tools were helpful and why • I know that different paint tools do different jobs	
5 To use a computer on my own to paint a picture	• I can change the colour and brush sizes • I can make dots of colour on the page • I can use dots of colour to create a picture in the style of an artist on my own	
6 To compare painting a picture on a computer and on paper	• I can explain that pictures can be made in lots of different ways • I can say whether I prefer painting using a computer or using paper • I can spot the differences between painting on a computer and on paper	

Year 1: Spring 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To label objects	• I can describe objects using labels • I can identify the label for a group of objects • I can match objects to groups	
2	To identify that objects can be counted	• I can count a group of objects • I can count objects • I can group objects	
3	To describe objects in different ways	• I can describe a property of an object • I can describe an object • I can find objects with similar properties	
4	To count objects with the same properties	• I can count how many objects share a property • I can group objects in more than one way • I can group similar objects	
5	To compare groups of objects	• I can choose how to group objects • I can describe groups of objects • I can record how many objects are in a group	
6	To answer questions about groups of objects	• I can compare groups of objects • I can decide how to group objects to answer a question • I can record and share what I have found	

Introduction to animation

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To choose a command for a given purpose	• I can compare different programming tools • I can find which commands move a sprite • I can use commands to move a sprite	
2	To show that a series of commands can be joined together	• I can run my program • I can use a start block in a program • I can use more than one block by joining them together	
3	To identify the effect of changing a value	• I can change the value • I can find blocks which have numbers • I can say what happens when I change a value	
4	To explain that each sprite has its own instructions	• I can add blocks to each of my sprites • I can delete a sprite • I can show that a project can include more than one sprite	
5	To design the parts of a project	• I can choose appropriate artwork for my project • I can create an algorithm for each sprite • I can decide how each sprite will move	
6	To use my algorithm to create a program	• I can add programming blocks based on my algorithm • I can test the programs I have created • I can use sprites which match my design	

Year 1: Summer 1

Year 1: Summer 2

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To use a computer to write	• I can identify and find keys on a keyboard • I can open a word processor • I can recognise keys on a keyboard	
2	To add and remove text on a computer	• I can enter text into a computer • I can use backspace to remove text • I can use letter, number, and space keys	
3	To identify that the look of text can be changed on a computer	• I can explain what the keys that I have learnt about already do • I can identify the toolbar and use bold, italic, and underline • I can type capital letters	
4	To make careful choices when changing text	• I can change the font • I can select a word by double-clicking • I can select all of the text by clicking and dragging	
5	To explain why I used the tools that I chose	• I can decide if my changes have improved my writing • I can say what tool I used to change the text • I can use 'undo' to remove changes	
6	To compare writing on a computer with writing on paper	• I can compare using a computer with using a pencil and paper • I can say which method I like best • I can write a message on a computer and on paper	

Year 1: Summer 2

Year 1: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can recognise that there may be people online who could make someone feel sad, embarrassed or upset
2	**Online relationships**	• I can give examples of when I should ask permission to do something online and explain why this is important • I can use the internet with adult support to communicate with people I know (e.g. video call apps or services).. • I can explain why it is important to be considerate and kind to people online and to respect their choices. • I can explain why things one person finds funny or sad online may not always be seen in the same way by others.
3	**Online reputation**	• I can recognise that information can stay online and could be copied • I can describe what information I should not put online without asking a trusted adult first..
4	**Online bullying**	• I can describe how to behave online in ways that do not upset others and can give examples.
5	**Privacy and security**	• I can recognise more detailed examples of information that is personal to someone (e.g where someone lives and goes to school, family names). • I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others.

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To recognise the uses and features of information technology	• I can describe some uses of computers • I can identify examples of computers • I can identify that a computer is a part of information technology	
2	To identify information technology in the home	• I can explain the purpose of information technology in the home • I can move and resize images • I can open a file	• Prior to pupils logging onto the computer: I can explain how passwords can be used to protect information, accounts and devices.
3	To identify information technology beyond school	• I can compare types of information technology • I can find examples of information technology • I can talk about uses of information technology	• I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).
4	To explain how information technology benefits us	• I can demonstrate how information technology is used in a shop • I can explain how information technology helps people • I can recognise that information technology can be connected	• I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment.
5	To show how to use information technology safely	• I can list different uses of information technology • I can recognise how to use information technology responsibly • I can say how those rules/guides can help me	• I can say how those rules / guides can help anyone accessing online technologies
6	To recognise that choices are made when using information technology	• I can enjoy a variety of activities • I can explain simple guidance for using information technology in different environments and settings • I can identify the choices that I make when using information technology	
*	**Additional e-Safety lesson**	*Online relationships*	• I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country). • I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. • I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. • I can identify who can help me if something happens online without my consent. • I can explain how it may make others feel if I do not ask their permission or ignore their answers before sharing something about them online. • I can explain why I should always ask a trusted adult before clicking 'yes', 'agree' or 'accept' online

Year 2: Autumn 2

Robot algorithms

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To describe a series of instructions as a sequence	• I can choose a series of words that can be enacted as a sequence • I can follow instructions given by someone else • I can give clear and unambiguous instructions	
2	To explain what happens when we change the order of instructions	• I can create different algorithms for a range of sequences (using the same commands) • I can show the difference in outcomes between two sequences that consist of the same commands • I can use an algorithm to program a sequence on a floor robot	
3	To use logical reasoning to predict the outcome of a program (series of commands)	• I can compare my prediction to the program outcome • I can follow a sequence • I can predict the outcome of a sequence	
4	To explain that programming projects can have code and artwork	• I can explain the choices I made for my mat design • I can identify different routes around my mat • I can test my mat to make sure that it is usable	
5	To design an algorithm	• I can create an algorithm to meet my goal • I can explain what my algorithm should achieve • I can use my algorithm to create a program	
6	To create and debug a program that I have written	• I can plan algorithms for different parts of a task • I can put together the different parts of my program • I can test and debug each part of the program	

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To say how music can make us feel	• I can describe how music makes me feel, e.g. happy or sad • I can identify simple differences in pieces of music • I can listen with concentration to a range of music (links to the Music curriculum)	
2	To identify that there are patterns in music	• I can create a rhythm pattern • I can explain that music is created and played by humans • I can play an instrument following a rhythm pattern	
3	To describe how music can be used in different ways	• I can connect images with sounds • I can relate an idea to a piece of music • I can use a computer to experiment with pitch and duration	
4	To show how music is made from a series of notes	• I can identify that music is a sequence of notes • I can refine my musical pattern on a computer • I can use a computer to create a musical pattern using three notes	
5	To create music for a purpose	• I can describe an animal using sounds • I can explain my choices • I can save my work	
6	To review and refine our computer work	• I can explain how I made my work better • I can listen to music and describe how it makes me feel • I can reopen my work	

Year 2: Spring 1

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 To recognise that we can count and compare objects using tally charts	• I can compare totals in a tally chart • I can record data in a tally chart • I can represent a tally count as a total	
2 To recognise that objects can be represented as pictures	• I can enter data onto a computer • I can use a computer to view data in a different format • I can use pictograms to answer simple questions about objects	
3 To create a pictogram	• I can explain what the pictogram shows • I can organise data in a tally chart • I can use a tally chart to create a pictogram	
4 To select objects by attribute and make comparisons	• I can answer 'more than'/'less than' and 'most/least' questions about an attribute • I can create a pictogram to arrange objects by an attribute • I can tally objects using a common attribute	
5 To recognise that people can be described by attributes	• I can choose a suitable attribute to compare people • I can collect the data I need • I can create a pictogram and draw conclusions from it	
6 To explain that we can present information using a computer	• I can give simple examples of why information should not be shared • I can share what I have found out using a computer • I can use a computer program to present information in different ways	

Digital photography

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To know what devices can be used to take photographs	• I can capture digital photos and talk about my experience • I can sort devices into old and new • I can talk about how to take a photograph	
2	To use a digital device to take a photograph	• I can explain the process of taking a good photograph • I can explain why a photo looks better in portrait or landscape format • I can take photos in both landscape and portrait format	
3	To describe what makes a good photograph	• I can discuss how to take a good photograph • I can identify what is wrong with a photograph • I can improve a photograph by retaking it	
4	To decide how photographs can be improved	• I can experiment with different light sources • I can explore the effect that light has on a photo • I can focus on an object	
5	To use tools to change an image	• I can explain my choices • I can recognise that images can be changed • I can use a tool to achieve a desired effect	
6	To recognise that images can be changed	• I can apply a range of photography skills to capture a photo • I can identify which images are real and which have been changed • I can recognise which images have been changed	• I can explain how other people may look and act differently online and offline.
*	**Additional E Safety Lesson**	*Copyright and ownership*	• I can recognise that content on the internet may belong to other people. • I can describe why other people's work belongs to them

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain that a sequence of commands has a start	• I can identify that a program needs to be started • I can identify the start of a sequence • I can show how to run my program	
2	To explain that a sequence of commands has an outcome	• I can change the outcome of a sequence of commands • I can match two sequences with the same outcome • I can predict the outcome of a sequence of commands	
3	To create a program using a given design	• I can build the sequences of blocks I need • I can decide which blocks to use to meet the design • I can tell the actions of a sprite in an algorithm	
4	To change a given design	• I can choose backgrounds for the design • I can choose characters for the design • I can create a program based on the new design	
5	To create a program using my own design	• I can build sequences of blocks to match my design • I can choose the images for my own design • I can create an algorithm	
6	To decide how my project can be improved	• I can compare my project to my design • I can debug • I can improve my project by adding features	

Year 2: Summer 2

Year 2: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened; I can give examples of how they might get help.
2	**Online relationships**	• I can explain who I should ask before sharing things about myself or others online.
3	**Online reputation**	• I can explain how information put online about someone can last for a long time. • I can describe how anyone's online information could be seen by others. • I know who to talk to if something has been put online without consent or if it is incorrect.
4	**Online bullying**	• I can explain what bullying is, how people may bully others and how bullying can make someone feel. • I can explain why anyone who experiences bullying is not to blame • I can talk about how anyone experiencing bullying can get help.
5	**Managing online information**	• I can use simple keywords in search engines • I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). • I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri). • I can explain the difference between things that are imaginary, 'made up' or 'make believe' and things that are 'true' or 'real' • I can explain why some information I find online may not be real or true.
6	**Privacy and security**	• I can explain and give examples of what is meant by 'private' and 'keeping things private'. • I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords).

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain how digital devices function	• I can explain that digital devices accept inputs • I can explain that digital devices produce outputs • I can follow a process	Link to simple logging on input with a password • I can describe simple strategies for creating and keeping passwords private
2	To identify input and output devices	• I can classify input and output devices • I can design a digital device • I can model a simple process	
3	To recognise how digital devices can change the way we work	• I can explain how I use digital devices for different activities • I can recognise similarities between using digital devices and non-digital tools • I can suggest differences between using digital devices and non-digital tools	
4	To explain how a computer network can be used to share information	• I can discuss why we need a network switch • I can explain how messages are passed through multiple connections • I can recognise different connections	• I can give reasons why someone should only share information with people they choose to and can trust. I can explain that if they are not sure or feel pressured then they should tell a trusted adult.
5	To explore how digital devices can be connected	• I can demonstrate how information can be passed between devices • I can explain the role of a switch, server, and wireless access point in a network • I can recognise that a computer network is made up of a number of devices	• I can describe how connected devices can collect and share anyone's information with others.
6	To recognise the physical components of a network	• I can identify how devices in a network are connected with one another • I can identify networked devices around me • I can identify the benefits of computer networks	
*	**Additional e-Safety lesson**	*Online reputation – Follow up work on how networks can share information by introducing the concept of online reputation*	• I can explain how to search for information about others online. • I can give examples of what anyone may or may not be willing to share about themselves online. I can explain the need to be careful before sharing anything personal. • I can explain who someone can ask if they are unsure about putting something online.

Year 3: Autumn 2

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explore a new programming environment	• I can identify the objects in a Scratch project (sprites, backdrops) • I can explain that objects in Scratch have attributes (linked to) • I can recognise that commands in Scratch are represented as blocks	
2	To identify that commands have an outcome	• I can identify that each sprite is controlled by the commands I choose • I can choose a word which describes an on-screen action for my design • I can create a program following a design	
3	To explain that a program has a start	• I can start a program in different ways • I can create a sequence of connected commands • I can explain that the objects in my project will respond exactly to the code	
4	To recognise that a sequence of commands can have an order	• I can explain what a sequence is • I can combine sound commands • I can order notes into a sequence	
5	To change the appearance of my project	• I can build a sequence of commands • I can decide the actions for each sprite in a program • I can make design choices for my artwork	
6	To create a project from a task description	• I can identify and name the objects I will need for a project • I can relate a task description to a design • I can implement my algorithm as code	

Branching databases

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To create questions with yes/no answers	• I can investigate questions with yes/no answers • I can make up a yes/no question about a collection of objects • I can create two groups of objects separated by one attribute	
2	To identify the object attributes needed to collect relevant data	• I can select an attribute to separate objects into groups • I can create a group of objects within an existing group • I can arrange objects into a tree structure	
3	To create a branching database	• I can select objects to arrange in a branching database • I can group objects using my own yes/no questions • I can prove my branching database works	
4	To explain why it is helpful for a database to be well structured	• I can create yes/no questions using given attributes • I can explain that questions need to be ordered carefully to split objects into similarly sized groups • I can compare two branching database structures	
5	To identify objects using a branching database	• I can select a theme and choose a variety of objects • I can create questions and apply them to a tree structure • I can use my branching database to answer questions	
6	To compare the information shown in a pictogram with a branching database	• I can explain what a pictogram tells me • I can explain what a branching database tells me • I can compare two ways of presenting information	

Year 3: Spring 1

Stop–frame Animation

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain that animation is a sequence of drawings or photographs	• I can create an effective flip book-style animation • I can draw a sequence of pictures • can explain how an animation/flip book works"	
2	To relate animated movement with a sequence of images	• I can explain that each element added to a vector drawing is an object • I can identify the shapes used to make a vector drawing • I can move, resize, and rotate objects I have duplicated	
3	To plan an animation	• I can break down a story into settings, characters and events • I can create a storyboard • I can describe an animation that is achievable on screen	
4	To identify the need to work consistently and carefully	• I can use onion skinning to help me make small changes between frames • I can review a sequence of frames to check my work • I can evaluate the quality of my animation	
5	To review and improve an animation	• I can explain ways to make my animation better • I can evaluate another learner's animation • I can improve my animation based on feedback	
6	To evaluate the impact of adding other media to an animation	• I can add other media to my animation • I can explain why I added other media to my animation • I can evaluate my final film	

Note: The Objectives column header reads "Objectives [& Teach Computing resources]" and the Additional column header reads "Additional e-Safety success criteria [& Project Evolve resources]".

Year 3: Spring 2

Events and actions

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain how a sprite moves in an existing project	• I can choose a character for my project • I can choose a suitable size for a character in a maze • I can program movement	
2	To create a program to move a sprite in four directions	• I can choose which field to sort data by to answer a given question • I can explain what a 'field' and a 'record' is in a database • I can navigate a flat-file database to compare different views of information	
3	To adapt a program to a new context	• I can use a programming extension • I can consider the real world when making design choices • I can choose blocks to set up my program	
4	To develop my program by adding features	• I can identify additional features (from a given set of blocks) • I can choose suitable keys to turn on additional features • I can build more sequences of commands to make my design work	
5	To identify and fix bugs in a program	• I can test a program against a given design • I can match a piece of code to an outcome • I can modify a program using a design	
6	To design and create a maze-based challenge	• I can make design choices and justify them • I can implement my design • I can evaluate my project	

Desktop publishing

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To recognise how text and images convey information	• I can explain the difference between text and images • I can recognise that text and images can communicate messages clearly • I can identify the advantages and disadvantages of using text and images	
2	To recognise that text and layout can be edited:	• I can change font style, size, and colours for a given purpose • I can edit text • I can explain that text can be changed to communicate more clearly	
3	To choose appropriate page settings	• I can define the term 'page orientation' • I can recognise placeholders and say why they are important • I can create a template for a particular purpose	
4	To add content to a desktop publishing publication	• I can choose the best locations for my content • I can paste text and images to create a magazine cover • I can make changes to content after I've added it	• Link to pasting activity I can explain why copying someone else's work from the internet without permission isn't fair and can explain what problems this might cause.
5	To consider how different layouts can suit different purposes	• I can identify different layouts • I can match a layout to a purpose • I can choose a suitable layout for a given purpose	
6	To consider the benefits of desktop publishing	• I can identify the uses of desktop publishing in the real world • I can say why desktop publishing might be helpful • I can compare work made on desktop publishing to work created by hand	
*	**Additional e-Safety lesson**	*Managing online information– Follow up work looking at examples of publishing on the web.*	• I can demonstrate how to use key phrases in search engines to gather accurate information online. • I can explain what autocomplete is and how to choose the best suggestion. • I can explain how the internet can be used to sell and buy things. • I can explain the difference between a 'belief', an 'opinion' and a 'fact.' • I can explain that not all opinions shared may be accepted as true or fair by others (e.g. monsters under the bed). • I can describe and demonstrate how we can get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.

Year 3: Summer 2

Year 3: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can explain what is meant by the term 'identity'. • I can explain how people can represent themselves in different ways online. • I can explain ways in which someone might change their identity depending on what they are doing online (e.g. gaming; using an avatar; social media) and why.
2	**Online relationships 1**	• I can describe ways people who have similar likes and interests can get together online. • I can explain what it means to 'know someone' online and why this might be different from knowing someone offline. • I can explain what is meant by 'trusting someone online', why this is different from 'liking someone online', and why it is important to be careful about who to trust online including what information and content they are trusted with.
3	**Online relationships 2**	• I can explain why someone may change their mind about trusting anyone with something if they feel nervous, uncomfortable or worried. • I can explain how someone's feelings can be hurt by what is said or written online. • I can explain the importance of giving and gaining permission before sharing things online; how the principles of sharing online is the same as sharing offline e.g. sharing images and videos.
4	**Online bullying**	• I can describe appropriate ways to behave towards other people online and why this is important. . • I can give examples of how bullying behaviour could appear online and how someone can get support.
5	**Health and wellbeing**	• I can explain why spending too much time using technology can sometimes have a negative impact on anyone; I can give some examples of both positive and negative activities where it is easy to spend a lot of time engaged • I can explain why some online activities have age restrictions, why it is important to follow them and know who I can talk to if others pressure me to watch or do something online that makes me feel uncomfortable (e.g. age restricted gaming or web sites).

Year 4: Autumn 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To describe how networks physically connect to other networks	• I can describe the internet as a network of networks • I can demonstrate how information is shared across the internet • I can discuss why a network needs protecting	
2	To recognise how networked devices make up the internet	• I can describe networked devices and how they connect • I can explain that the internet is used to provide many services • I can recognise that the World Wide Web contains websites and web pages	
3	To outline how websites can be shared via the World Wide Web (WWW)	• I can explain the types of media that can be shared on the WWW • I can describe where websites are stored when uploaded to the WWW • I can describe how to access websites on the WWW	
4	To describe how content can be added and accessed on the World Wide Web (WWW)	• I can explain what media can be found on websites • I can recognise that I can add content to the WWW • I can explain that internet services can be used to create content online	
5	To recognise how the content of the WWW is created by people	• I can explain that websites and their content are created by people • I can suggest who owns the content on websites • I can explain that there are rules to protect content	Copyright and ownership • 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 of content which I must not use without permission from the owner, e.g. videos, music, images.
6	To evaluate the consequences of unreliable content	• I can explain that not everything on the World Wide Web is true • I can explain why some information I find online may not be honest, accurate, or legal • I can explain why I need to think carefully before I share or reshare content	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 describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy
*	**Additional e-Safety lesson** *Managing online information* **Fake News**	*Follow up to themes explored in lesson 6 above*	Managing online information • I can describe some of the methods used to encourage people to buy things online • I can explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. • I can explain that technology can be designed to act like or impersonate living things (bots) and describe what the benefits and the risks might be. • 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.

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain that digital images can be changed	• I can identify changes that we can make to an image • I can explore how images can be changed in real life • I can explain the effect that editing can have on an image	
2	To change the composition of an image	• I can explain what has changed in an edited image • I can change the composition of an image by selecting parts of it • I can consider why someone might want to change the composition of an image	
3	To describe how images can be changed for different uses	• I can talk about changes made to images • I can choose effects to make my image fit a scenario • I can explain why my choices fit a scenario	
4	To make good choices when selecting different tools	• I can identify how an image has been retouched • I can give examples of positive and negative effects that retouching can have on an image • I can choose appropriate tools to retouch an image	
5	To recognise that not all images are real	• I can sort images into 'fake' or 'real' and explain my choices • I can combine parts of images to create new images • I can talk about fake images around me	
6	To evaluate how changes can improve an image	• I can consider the effect of adding other elements to my work • I can compare the original image with my completed publication • I can evaluate the impact of my publication on others through feedback	

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain that data gathered over time can be used to answer questions	• I can choose a data set to answer a given question • I can suggest questions that can be answered using a given data set • I can identify data that can be gathered over time	
2	To use a digital device to collect data automatically	• I can explain that sensors are input devices • I can use data from a sensor to answer a given question • I can identify that data from sensors can be recorded	
3	To explain that a data logger collects 'data points' from sensors over time	• I can identify a suitable place to collect data • I can identify the intervals used to collect data • I can talk about the data that I have captured	
4	To use data collected over a long duration to find information	• I can import a data set • I can use a computer to view data in different ways • I can use a computer program to sort data	
5	To identify the data needed to answer questions	• I can propose a question that can be answered using logged data • I can plan how to collect data using a data logger • I can use a data logger to collect data	
6	To use collected data to answer questions	• I can interpret data that has been collected using a data logger • I can draw conclusions from the data that I have collected • I can explain the benefits of using a data logger	

Year 4: Spring 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To identify that sound can be digitally recorded	• I can identify digital devices that can record sound and play it back • I can identify the inputs and outputs required to play audio or record sound • I can recognise the range of sounds that can be recorded	
2	To use a digital device to record sound	• I can use a device to record audio and play back sound • I can suggest how to improve my recording • I can discuss what other people include when recording sound for a podcast	
3	To explain that a digital recording is stored as a file	• I can plan and write the content for a podcast • I can discuss why it is useful to be able to save digital recordings • I can save a digital recording as a file	
4	To explain that audio can be changed through editing	• I can open a digital recording from a file • I can discuss ways in which audio recordings can be altered • I can edit sections of an audio recording	
5	To show that different types of audio can be combined and played together	• I can discuss sounds that other people combine • I can choose suitable sounds to include in a podcast • I can use editing tools to arrange sections of audio	
6	To evaluate editing choices made	• I can explain that digital recordings need to be exported to share them • I can discuss the features of a digital recording I like • I can suggest improvements to a digital recording	

Repetition in shapes

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 To identify that accuracy in programming is important	• I can program a computer by typing commands • I can explain the effect of changing a value of a command • I can create a code snippet for a given purpose	
2 To create a program in a text-based language	• I can use a template to create a design for my program • I can write an algorithm to produce a given outcome • I can test my algorithm in a text-based language	
3 To explain what 'repeat' means	• I can identify everyday tasks that include repetition as part of a sequence, e.g. brushing teeth, dance moves • I can identify patterns in a sequence, e.g. 'step 3 times' means the same as 'step, step, step' • I can use a count-controlled loop to produce a given outcome	
4 To modify a count-controlled loop to produce a given outcome	• I can identify the effect of changing the number of times a task is repeated • I can predict the outcome of a program containing a count-controlled loop • I can choose which values to change in a loop	
5 To decompose a program into parts	• I can identify 'chunks' of actions in the real world • I can use a procedure in a program • I can explain that a computer can repeatedly call a procedure	
6 To create a program that uses count-controlled loops to produce a given outcome	• I can design a program that includes count-controlled loops • I can make use of my design to write a program • I can develop my program by debugging it	

Year 4: Summer 1

Year 4: Summer 2

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To develop the use of count-controlled loops in a different programming environment	• I can list an everyday task as a set of instructions including repetition • I can predict the outcome of a snippet of code • I can modify a snippet of code to create a given outcome	
2	To explain that in programming there are infinite loops and count controlled loops	• I can modify loops to produce a given outcome • I can choose when to use a count-controlled and an infinite loop • I can recognise that some programming languages enable more than one process to be run at once	
3	To develop a design that includes two or more loops which run at the same time	• I can choose which action will be repeated for each object • I can explain what the outcome of the repeated action should be • I can evaluate the effectiveness of the repeated sequences used in my program	
4	To modify an infinite loop in a given program	• I can identify which parts of a loop can be changed • I can explain the effect of my changes • I can re-use existing code snippets on new sprites	
5	To design a project that includes repetition	• I can evaluate the use of repetition in a project • I can select key parts of a given project to use in my own design • I can develop my own design explaining what my project will do	
6	To create a project that includes repetition	• I can refine the algorithm in my design • I can build a program that follows my design • I can evaluate the steps I followed when building my project	

Year 4: Summer 2

Year 4: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can explain how my online identity can be different to my offline identity. • I can describe positive ways for someone to interact with others online and understand how this will positively impact on how others perceive them. • I can explain that others online can pretend to be someone else, including my friends, and can suggest reasons why they might do this.
2	**Online relationships**	• I can describe strategies for safe and fun experiences in a range of online social environments (e.g. livestreaming, gaming platforms) • I can give examples of how to be respectful to others online and describe how to recognise healthy and unhealthy online behaviours. • I can explain how content shared online may feel unimportant to one person but may be important to other people's thoughts feelings and beliefs.
3	**Online reputation**	• I can describe how to find out information about others by searching online. • I can explain ways that some of the information about anyone online could have been created, copied or shared by others.
4	**Online bullying**	• I can recognise when someone is upset, hurt or angry online. • I can describe ways people can be bullied through a range of media (e.g. image, video, text, chat). • I can explain why people need to think carefully about how content they post might affect others, their feelings and how it may affect how others feel about them (their reputation).
5	**Health and wellbeing**	• I can explain how using technology can be a distraction from other things, in both a positive and negative way. • I can identify times or situations when someone may need to limit the amount of time they use technology e.g. I can suggest strategies to help with limiting this time.
	Privacy and Security	• I can describe strategies for keeping personal information private, depending on context. • I can explain that internet use is never fully private and is monitored, e.g. adult supervision. • I can describe how some online services may seek consent to store information about me; I know how to respond appropriately and who I can ask if I am not sure. • I know what the digital age of consent is and the impact this has on online services asking for consent.

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To explain that computers can be connected together to form systems	- I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can explain that systems are built using a number of parts	• Prior to pupils logging onto the computer: I can explain what a strong password is and demonstrate how to create one.
2	To recognise the role of computer systems in our lives	- I can explain the benefits of a given computer system - I can identify tasks that are managed by computer systems - I can identify the human elements of a computer system	
3	To recognise how information is transferred over the internet	- I can explain that data is transferred over networks in packets - I can explain that networked digital devices have unique addresses - I can recognise that data is transferred using agreed methods	
4	To explain how sharing information online lets people in different places work together	- I can explain that the internet allows different media to be shared - I can recognise that connected digital devices can allow us to access shared files stored online - I can send information over the internet in different ways	• I can search for information about an individual online and summarise the information found. • I can describe ways that information about anyone online can be used by others to make judgments about an individual and why these may be incorrect • I can explain the benefits and limitations of using different types of search technologies e.g. voice-activation search engine. I can explain how some technology can limit the information I am presented with. • I can explain how many free apps or services may read and share private information (e.g. friends, contacts, likes, images, videos, voice, messages, geolocation) with others.
5	To contribute to a shared project online	- I can compare working online with working offline - I can make thoughtful suggestions on my group's work - I can suggest strategies to ensure successful group work	
6	To evaluate different ways of working together online	- I can explain how the internet enables effective collaboration - I can identify different ways of working together online - I can recognise that working together on the internet can be public or private	
	Additional E Safety Lesson	*Online relationships*	• I can give examples of technology-specific forms of communication (e.g. emojis, memes and GIFs). • I can explain that there are some people I communicate with online who may want to do me or my friends harm. I can recognise that this is not my / our fault. • I can describe some of the ways people may be involved in online communities and describe how they might collaborate constructively with others and make positive contributions. (e.g. gaming communities or social media groups). • I can explain how someone can get help if they are having problems and identify when to tell a trusted adult. • I can demonstrate how to support others (including those who are having difficulties) online.

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To identify that drawing tools can be used to produce different outcomes	• I can discuss how a vector drawing is different from paper-based drawing • I can identify the main drawing tools • I can recognise that vector drawings are made using shapes	
2	To create a vector drawing by combining shapes	• I can explain that each element added to a vector drawing is an object • I can identify the shapes used to make a vector drawing • I can move, resize, and rotate objects I have duplicated	
3	To use tools to achieve a desired effect	• I can explain how alignment grids and resize handles can be used to improve consistency • I can modify objects to create different effects • I can use the zoom tool to help me add detail to my drawings	
4	To recognise that vector drawings consist of layers	• I can change the order of layers in a vector drawing • I can identify that each added object creates a new layer in the drawing • I can identify which objects are in the front layer or in the back layer of a drawing	
5	To group objects to make them easier to work with	• I can copy part of a drawing by duplicating several objects • I can group to create a single object • I can reuse a group of objects to further develop my vector drawing	
6	To evaluate my vector drawing	• I can apply what I have learned about vector drawings • I can suggest improvements to a vector drawing • I create alternatives to vector drawings	

Selection in physical computing

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To control a simple circuit connected to a computer	• I can build a simple circuit to connect a microcontroller to a computer • I can explain why I used an infinite loop • I can program a microcontroller to light an LED	
2	To write a program that includes count-controlled loops	• I can connect more than one output device to a microcontroller • I can decide which output devices I control with a count-controlled loop • I can design sequences for given output devices	
3	To explain that a loop can stop when a condition is met, eg number of times	• I can experiment with a 'do until' loop • I can explain that a condition is something that can either be true or false (eg whether a value is more than 10, or whether a button has been pressed) • I can program a microcontroller to respond to an input	
4	To conclude that a loop can be used to repeatedly check whether a condition has been met	• I can explain that a condition being met can start an action • I can identify a condition and an action in my project • I can use selection (an 'if... then...' statement) to direct the flow of a program	
5	To design a physical project that includes selection	• I can create a detailed drawing of my project • I can describe what my project will do (the task) • I can identify a condition to start an action (real world)	
6	To create a controllable system that includes selection	• I can test and debug my project • I can use selection to produce an intended outcome • I can write an algorithm to control lights and a motor	

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 — To explain how selection is used in computer programs	• I can identify conditions in a program • I can modify a condition in a program • I can recall how conditions are used in selection	
2 — To relate that a conditional statement connects a condition to an outcome	• I can create a program with different outcomes using selection • I can identify the condition and outcomes in an 'if… then… else…' statement • I can use selection in an infinite loop to check a condition	
3 — To explain how selection directs the flow of a program	• I can design the flow of a program which contains 'if… then… else…' • I can explain that program flow can branch according to a condition • I can show that a condition can direct program flow in one of two ways	
4 — To design a program which uses selection	• I can identify the outcome of user input in an algorithm • I can outline a given task • I can use a design format to outline my project	
5 — To create a program which uses selection	• I can implement my algorithm to create the first section of my program • I can share my program with others • I can test my program	
6 — To evaluate my program	• I can extend my program further • I can identify ways the program could be improved • I can identify what setup code my project needs	

Year 5: Spring 2

Video editing

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 To recognise video as moving pictures, which can include audio	• I can explain that a video can include both visual and audio media • I can explain the benefits of adding audio to a video • I can plan a video project using a storyboard	
2 To identify digital devices that can record video	• I can choose the most suitable digital device for recording my project • I can identify and name digital devices that can record video and sound • I can locate and identify the working features of a digital device that can record video	
3 To capture video using a digital device	• I can demonstrate suitable methods of using a digital device to capture my video • I can demonstrate the safe use and handling of devices • I can select a suitable device and software to capture my video	
4 To recognise the features of an effective video	• I can explain why lighting and angle are important in creating an effective video • I can list some of the features of an effective video • I can record a video that demonstrates some of the features of an effective video	
5 To identify that video can be improved through reshooting and editing	• I can explain how to improve a video by reshooting and editing • I can select the correct tools to make edits to my video • I can store, retrieve, and export my recording to a computer	
6 To consider the impact of the choices made when making and sharing a video	• I can evaluate my video and share my opinions • I can make edits to my video and improve the final outcome • I can recognise that my choices when making a video will impact on the quality of the final outcome	

Year 5: Summer 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To use a form to record information	• I can create multiple questions about the same field • I can explain how information can be recorded • I can order, sort, and group my data cards	
2	To compare paper and computer-based databases	• I can choose which field to sort data by to answer a given question • I can explain what a 'field' and a 'record' is in a database • I can navigate a flat-file database to compare different views of information	
3	To outline how grouping and then sorting data allows us to answer questions	• I can combine grouping and sorting to answer more specific questions • I can explain how information can be grouped • I can group information to answer questions	
4	To explain that tools can be used to select specific data	• I can choose multiple criteria to answer a given question • I can choose which field and value are required to answer a given question • I can outline how 'AND' and 'OR' can be used to refine data selection	
5	To explain that computer programs can be used to compare data visually	• I can explain the benefits of using a computer to create graphs • I can refine a chart by selecting a particular filter • I can select an appropriate chart to visually compare data	
6	To apply my knowledge of a database to ask and answer real-world questions	• I can ask questions that will need more than one field to answer • I can present my findings to a group • I can refine a search in a real-world context	

Year 5: Summer 2

Year 5: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can explain how identity online can be copied, modified or altered. • I can demonstrate how to make responsible choices about having an online identity, depending on context.
2	**Online bullying**	• I can recognise online bullying can be different to bullying in the physical world and can describe some of those differences. • I can describe how what one person perceives as playful joking and teasing (including 'banter') might be experienced by others as bullying. • I can explain how anyone can get help if they are being bullied online and identify when to tell a trusted adult. • I can identify a range of ways to report concerns and access support both in school and at home about online bullying. • I can explain how to block abusive users. • I can describe the helpline services which can help people experiencing bullying, and how to access them (e.g. Childline or The Mix).
3	**Managing online information**	• I can explain what is meant by 'being sceptical'; I can give examples of when and why it is important to be 'sceptical'. • I can evaluate digital content and can explain how to make choices about what is trustworthy e.g. differentiating between adverts and search results • I can explain key concepts including: information, reviews, fact, opinion, belief, validity, reliability and evidence.. • I can identify ways the internet can draw us to information for different agendas, e.g. website notifications, pop-ups, targeted ads • 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, influencers). • I can explain what is meant by the term 'stereotype', how 'stereotypes' are amplified and reinforced online, and why accepting 'stereotypes' may influence how people think about others. • I can describe how fake news may affect someone's emotions and behaviour, and explain why this may be harmful • I can explain what is meant by a 'hoax'. I can explain why someone would need to think carefully before they share.
4	**Health and wellbeing**	• I can describe ways technology can affect health and well-being both positively (e.g. mindfulness apps) and negatively. • I can describe some strategies, tips or advice to promote health and wellbeing with regards to technology. • I recognise the benefits and risks of accessing information about health and well-being online and how we should balance this with talking to trusted adults and professionals. • I can explain how and why some apps and games may request or take payment for additional content (e.g. in-app purchases, lootboxes) and explain the importance of seeking permission from a trusted adult before purchasing.
5	**Privacy and security**	• I can explain what app permissions are and can give some examples.
6	**Copyright and ownership**	• 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 and know how this content can be found online.

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To identify how to use a search engine	• I can complete a web search to find specific information • I can refine my search • I can compare results from different search engines	• I can explain how to use search technologies effectively. • I can identify, flag and report inappropriate content.
2	To describe how search engines select results	• I can explain why we need tools to find things online • I can recognise the role of web crawlers in creating an index • I can relate a search term to the search engine's index	• I can demonstrate how to analyse and evaluate the validity of 'facts' and information and I can explain why using these strategies are important.
3	To explain how search results are ranked	• I can explain that search results are ordered • I can explain that a search engine follows rules to rank relevant pages • I can suggest some of the criteria that a search engine checks to decide on the order of results	• I can explain how search engines work and how results are selected and ranked.
4	To recognise why the order of results is important, and to whom	• I can describe some of the ways that search results can be influenced • I can recognise some of the limitations of search engines • I can explain how search engines make money	• I can describe how some online information can be opinion and can offer examples. • I can explain how companies and news providers target people with online news stories they are more likely to engage with and how to recognise this.
5	To recognise how we communicate using technology	• I can explain the different ways in which people communicate • I can identify that there are a variety of ways of communicating over the internet • I can choose methods of communication to suit particular purposes	
6	To evaluate different methods of online communication	• I can compare different methods of communicating on the internet • I can decide when I should and should not share • I can explain that communication on the internet may not be private	
*	Additional e-Safety lesson	Managing online information – Online influences	• I can explain how and why some people may present 'opinions' as 'facts'; why the popularity of an opinion or the personalities of those promoting it does not necessarily make it true, fair or perhaps even legal. • I can define the terms 'influence', 'manipulation' and 'persuasion' and explain how someone might encounter these online • I understand the concept of persuasive design and how it can be used to influences peoples' choices. • I can describe the difference between online misinformation and dis-information • I can explain why information that is on a large number of sites may still be inaccurate or untrue. I can assess how this might happen

Year 6: Autumn 2

Variables in games

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To define a 'variable' as something that is changeable	• I can identify examples of information that is variable • I can explain that the way that a variable changes can be defined • I can identify that variables can hold numbers or letters	
2	To explain why a variable is used in a program	• I can identify a program variable as a placeholder in memory for a single value • I can explain that a variable has a name and a value • I can recognise that the value of a variable can be changed	
3	To choose how to improve a game by using variables	• I can decide where in a program to change a variable • I can make use of an event in a program to set a variable • I can recognise that the value of a variable can be used by a program	
4	To design a project that builds on a given example	• I can choose the artwork for my project • I can explain my design choices • I can create algorithms for my project	
5	To use my design to create a project	• I can create the artwork for my project • I can choose a name that identifies the role of a variable • I can test the code that I have written	
6	To evaluate my project	• I can identify ways that my game could be improved • I can extend my game further using more variables • I can share my game with others	

Year 6: Spring 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To use a computer to create and manipulate three-dimensional (3D) digital objects	• I can investigate questions with yes/no answers • I can make up a yes/no question about a collection of objects • I can create two groups of objects separated by one attribute	
2	To compare working digitally with 2D and 3D graphics	• I can identify how graphical objects can be modified • I can resize a 3D object • I can change the colour of a 3D object	
3	To construct a digital 3D model of a physical object	• I can rotate a 3D object • I can position 3D objects in relation to each other • I can select and duplicate multiple 3D objects	
4	To identify that physical objects can be broken down into a collection of 3D shapes	• I can identify the 3D shapes needed to create a model of a real-world object • I can create digital 3D objects of an appropriate size • I can group a digital 3D shape and a placeholder to create a hole in an object	
5	To design a digital model by combining 3D objects	• I can plan my 3D model • I can choose which 3D objects I need to construct my model • I can modify multiple 3D objects	
6	To develop and improve a digital 3D model	• I can decide how my model can be improved • I can modify my model to improve it • I can evaluate my model against a given criterion	

Year 6: Spring 1

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To identify questions which can be answered using data	• I can explain the relevance of data headings • I can answer questions from an existing data set • I can ask simple relevant questions which can be answered using data	
2	To explain that objects can be described using data	• I can explain what an item of data is • I can apply an appropriate number format to a cell • I can build a data set in a spreadsheet application	
3	To explain that formulas can be used to produce calculated data	• I can explain the relevance of a cell's data type • I can construct a formula in a spreadsheet • I can identify that changing inputs changes outputs	
4	To apply formulas to data, including duplicating	• I can recognise that data can be calculated using different operations • I can create a formula which includes a range of cells • I can apply a formula to multiple cells by duplicating it	
5	To create a spreadsheet to plan an event	• I can use a spreadsheet to answer questions • I can explain why data should be organised • I can apply a formula to calculate the data I need to answer questions	
6	To choose suitable ways to present data	• I can produce a graph • I can use a graph to show the answer to questions • I can suggest when to use a table or graph	

Year 6: Spring 2

Sensing

Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1 [To create a program to run on a controllable device](#)	• I can apply my knowledge of programming to a new environment • I can test my program on an emulator • I can transfer my program to a controllable device	
2 [To explain that selection can control the flow of a program](#)	• I can identify examples of conditions in the real world • I can use a variable in an if, then, else statement to select the flow of a program • I can determine the flow of a program using selection	
3 [To update a variable with a user input](#)	• I can use a condition to change a variable • I can experiment with different physical inputs • I can explain that if you read a variable, the value remains	
4 [To use a conditional statement to compare a variable to a value](#)	• I can explain the importance of the order of conditions in else, if statements • I can use an operand (e.g. <>=) in an if, then statement • I can modify a program to achieve a different outcome	
5 [To design a project that uses inputs and outputs on a controllable device](#)	• I can decide what variables to include in a project • I can design the algorithm for my project • I can design the program flow for my project	
6 [To develop a program to use inputs and outputs on a controllable device](#)	• I can create a program based on my design • I can test my program against my design • I can use a range of approaches to find and fix bugs	

Year 6: Summer 1

Year 6: Summer 2

Webpage creation

	Objectives [& Teach Computing resources]	Success criteria	Additional e-Safety success criteria [& Project Evolve resources]
1	To review an existing website and consider its structure	• I can explore a website • I can discuss the different types of media used on websites • I know that websites are written in HTML	
2	To plan the features of a web page	• I can recognise the common features of a web page • I can suggest media to include on my page • I can draw a web page layout that suits my purpose	
3	To consider the ownership and use of images (copyright)	• I can say why I should use copyright-free images • I can find copyright-free images • I can describe what is meant by the term 'fair use'	• 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.
4	To recognise the need to preview pages	• I can add content to my own web page • I can preview what my web page looks like • I can evaluate what my web page looks like on different devices and suggest/make edits	
5	To outline the need for a navigation path	• I can explain what a navigation path is • I can describe why navigation paths are useful • I can make multiple web pages and link them using hyperlinks	
6	To recognise the implications of linking to content owned by other people	• I can explain the implication of linking to content owned by others • I can create hyperlinks to link to other people's work • I can evaluate the user experience of a website	
*	Additional e-Safety lesson	*Online reputation – Link with webpages created in this unit*	• I can explain the ways in which anyone can develop a positive online reputation. • I can explain strategies anyone can use to protect their 'digital personality' and online reputation, including degrees of anonymity.

Year 6: Summer 2

Year 6: PSHE e-Safety unit

	Lesson Title	e-Safety success criteria [& Project Evolve resources]
1	**Self image and identity**	• I can identify and critically evaluate online content relating to gender, race, religion, disability, culture and other groups, and explain why it is important to challenge and reject inappropriate representations online • I can describe issues online that could make anyone feel sad, worried, uncomfortable or frightened. I know and can give examples of how to get help, both on and offline. • I can explain the importance of asking until I get the help needed.
2	**Online relationships**	• I can explain how sharing something online may have an impact either positively or negatively • I can describe how to be kind and show respect for others online including the importance of respecting boundaries regarding what is shared about them online and how to support them if others do not. • I can describe how things shared privately online can have unintended consequences for others. e.g. screen-grabs. • I can explain that taking or sharing inappropriate images of someone (e.g. embarrassing images), even if they say it is okay, may have an impact for the sharer and others; and who can help if someone is worried about this.
3	**Online bullying**	• I can describe how to capture bullying content as evidence (e.g screen-grab, URL, profile) to share with others who can help me. • I can explain how someone would report online bullying in different contexts.
4	**Health and wellbeing**	• I can describe common systems that regulate age-related content (e.g. PEGI, BBFC, parental warnings) and describe their purpose. • I recognise and can discuss the pressures that technology can place on someone and how / when they could manage this. • I can recognise features of persuasive design and how they are used to keep users engaged (current and future use). • I can assess and action different strategies to limit the impact of technology on health (e.g. night-shift mode, regular breaks, correct posture, sleep, diet and exercise).
5	**Privacy and security 1**	• I can describe effective ways people can manage passwords (e.g. storing them securely or saving them in the browser). • I can explain what to do if a password is shared, lost or stolen. • I can describe how and why people should keep their software and apps up to date, e.g. auto updates.
6	**Privacy and security 2**	• I can describe simple ways to increase privacy on apps and services that provide privacy settings. • I can describe ways in which some online content targets people to gain money or information illegally; I can describe strategies to help me identify such content (e.g. scams, phishing). • I know that online services have terms and conditions that govern their use.

Resources required for Teach Computing

Unit	Unit Title	Hardware	Hardware Links	Software	Software Links	Estimated additional costs based on a one form entry Primary School	
1.1	Computing systems	Computer, keyboard and mouse		Paintz app. But any painting / graphics programme will do	https://paintz.app/	£ -	
1.2	Creating media - painting	PC, Chromebook or iPAd		Paintz app. But any painting / graphics programme will do	https://paintz.app/	£ -	
1.3	Creating media - writing	Any device with a keyboard		Any desktop publishing or word processor software		£ -	
1.4	Grouping data	Any device supporting drag and drop with mouse, keypad or touch screen		Desktop publishing software e.g. PowerPoint		£ -	
1.5	Moving a robot	Floor robots such as BeeBot	Beebot			£ 250.00	
1.6	Intro to Animation	iPads, Chromebooks or PC		Scratch Junior	Scratch Jr for PC	£ -	
					Scratch Jr for Chromebook	£ -	
					Scratch Jr app	£ -	
2.1	IT around us	Nothing specific		Nothing specific	Digital 5 a day	£ -	
2.2	Digital Photography	iPads or Chromebooks		Pixlr or other photo editing software	Pixlr X; iPad App	£ -	
2.3	Making music	ipads, Chromebooks or PC		Chrome music lab	Chrome music lab	£ -	
2.4	Pictograms	ipads, Chromebooks or PC		Just 2 Easy Pictograms	J2E Pictograms	£ -	
2.5	Robot algorithms	Floor robots such as BeeBot. Could be shared with Y1	Beebot			£ 250.00	Set of 6 Beebots
2.6	Introduction to quizzes	iPads, Chromebooks or PC		Scratch Junior	Scratch Jr for PC	£ -	
					Scratch Jr for Chromebook	£ -	
					Scratch Jr app	£ -	
3.1	Connecting computers	iPads, Chromebooks or PC		Painting app	https://paintz.app/	£ -	
3.2	Animation	iPads		Stop frame Animation apps	iMotion	£ -	
3.3	Desk top publishing	iPads, Chromebooks or PC		Adobe Spark suggested, but other apps like PowerPoint could be used	Adobe Spark	£ -	
3.4	Branching databases	iPads, Chromebooks or PC		J2E Data Branch	Branch	£ -	
3.5	Sequence in music	iPads, Chromebooks or PC		Scratch	Scratch	£ -	
3.6	Events and actions	iPads, Chromebooks or PC		Scratch	Scratch	£ -	
4.1	The Internet	iPads, Chromebooks or PC		Chrome Music Lab	Kandinsky	£ -	
4.2	Audio editing	PC or laptop for Audacity. External Mics and headphones useful. Chromebooks and iPad with alternative software		Audacity suggested, alternatives available. TwistedWave for Chromebooks and Garageband for iPads	Audacity	£ -	
					Twisted Wave Online	£ -	
					Garageband	£ -	
4.3	Photo editing	iPads, Chromebooks or PC		Paint.net for download to Windows or Pixlr X online	Paint.net	£ -	
					Pixlr X	£ -	
4.4	Data Logging	Data logging hardware e.g. EasySense Vu	EasySense Vu 5 pack	Software for data loggers	EasySense	£ 630.00	Classroom pack
4.5	Repetition in shapes	iPads, Chromebooks or PC		Logo style software- Hopscotch for iPad, Scratch or Turtle playground online	Turtle playground	£ -	
					Hopscotch	£ -	
					Scratch	£ -	
4.6	Repetition in games	iPads, Chromebooks or PC		Scratch	Scratch	£ -	

Wider Expectations For Teaching Computing

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Autumn	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness	Trips Visitors Events Anti bullying week World Kindness Day Display Year group displays around the theme of Online Kindness
Spring	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays	Trips Visitors Events STEM Week Safer Internet Day Display STEM Week work displays
Summer	Trips Visitors Events Hour of code Display	Trips Visitors Events Hour of code Display	Trips Visitors Events Hour of code Display	Trips Visitors Events Hour of code Display	Trips Visitors Events Hour of code Display	Trips Visitors Events Hour of code Display

Resources required for Teach Computing

Unit	Unit Title	Hardware	Hardware Links	Software	Software Links	Estimated additional costs based on a one form entry Primary School	
5.1	Sharing Information	iPads, Chromebooks or PC		Scratch & apps like PowerPoint could be used	Scratch	£ -	
5.2	Vector Drawing	iPads, Chromebooks or PC		Google Drawings	Google Drawings	£ -	
5.3	Video Editing	iPads ideally for ease of use, Chromebooks or PC could also be used		iMovie for iPads,	iMovie	£ -	
				We Video for Chromebook	wevideo	£ 275.00	Limited free version. Cost is based on 30 seats
				Microsoft Photo Editor for PC	Microsoft Photos	£ -	
5.4	Flat file databases	iPads, Chromebooks or PC		J2E Databases	J2E Databases	£ -	
5.5	Physical computing	PC, Mac or Raspberry Pi	Crumble controller	Crumble software	Crumble software for PC	£ 300.00	Based on 15 No starter kits
		iPad or Chromebook	Makey Makey	Scratch software	Scratch	£ 650.00	Makey Makey STEM pack. Unit would need adapting for Makey Makey
5.6	Selection in quizzes	iPads, Chromebooks or PC		Scratch software	Scratch	£ -	
6.1	Communication	iPads, Chromebooks or PC		Web browser and search engine		£ -	
6.2	3 D Modelling	iPads, Chromebooks or PC		TinkerCAD	TinkerCAD	£ -	
6.3	Web Page Creation	iPads, Chromebooks or PC		Google sites	Sites	£ -	Google login required
				Adobe Spark Page	Spark webpage	£ -	Adobe account required
				Microsoft Sway	Sway	£ -	Office 365 account required
6.4	Spreadsheets	iPads, Chromebooks or PC		Microsoft Excel	Excel	£ -	Office 365 account required
6.5	Variables in games	iPads, Chromebooks or PC		Scratch software	Scratch	£ -	
6.6	Sensing	iPads, Chromebooks or PC	Microbit	Make Code	Make Code Editor	£ 250.00	Based on 15 No starter kits

Estimated cost for a 1-form entry primary school to buy all necessary resources listed here:

£ 2,605.00