Peover Superior Primary School

Care, Aspire, Believe

Computing

Intent:

At Peover Superior, we aim to provide children with high-quality Computing which prepares them for their present and future life in the digital world. Now more than ever, it is vital that children become digitally literate so that they can use and create a range of programs, systems and content. We intend to champion, promote and maintain a high profile for Computing so that our pupils recognise the importance of being confident and competent with a range of technologies as well as using it responsibly and creatively. Furthermore, we ensure children receive regular and current lessons for online safety so that they can recognise the benefits and risks of using technology; confidently explain how they should conduct themselves; outline how they can protect themselves from inappropriate content; identify how to deal with unwanted contact and identify the dangers of online commerce. We aim to make effective links between Computing and other areas of the curriculum such as Mathematics, Science and Design and Technology so that other areas of children's learning can be applied and deepened. Through high-quality Computing from Early Years to Year 6, we aim to develop children's logical thinking, problem-solving and analytical skills which are transferable to other areas of the curriculum and valuable for adult life.

Design:

Our curriculum is designed to:

- Provide children with at least one hour of Computing each week and utilise technology in other areas of the curriculum so children have opportunities to further develop and apply their computational skills.

- Utilise Microsoft Teams for a blended-learning approach so that children's Computing skills can be applied and they are provided with opportunities for collaboration, commenting and communicating via video call and the written word.
- Ensure children's computational knowledge and skills are built upon progressively each year and provide opportunities for repetition and overlapping of skills in multiple Computing units to ensure children are secure at the end of each stage.
- Deliver a broad and varied Computing curriculum which provides opportunities for children to develop as communicators, coders, data collectors and Internet users from EYFS to Year 6. Children's coding and communication skills are prioritised in EYFS and Key Stage One with two coding units per year as well as two units focusing on communication through various forms media, such as: creating images, creating music, bloggings, creating digital stories and creating animations. In Key Stage Two, coding features four times during the two-yearly cycles and communicating through media and connecting through the Internet are covered on three occasions during the two-year cycles.
- Ensure Online Safety is regularly taught and revisited throughout all Computing units. This ensures staff respond to current trends and incidents that have been logged on CPOMs and our pupils become responsible, confident and competent users of technology. Additionally, through stand-alone 'To Connect' units during the first spring half term of each year, there are opportunities for children to develop a deep and secure knowledge of Online Safety.
- Utilise events such as Safer Internet Day and Anti-bullying Week to maintain a high profile for Online Safety.
- Involve the Junior Safety Officers and Digital Leaders in promoting Online Safety as well as the uses and benefits of technology. The Junior Safety Officers and Digital Leaders are involved in leading assemblies, supporting staff with software and setting up equipment, communicating with parents about Online Safety issues and current focuses of Computing lessons and organising Computing competitions.
- Provide information sessions for parents regarding Online Safety, ensuring that content is relevant and current. Through the involvement of our local Police Community Support Officer in these sessions, parents grasp the severity and importance of tackling Online Safety matters with their children.
- Assess children's Computing skills through formative assessment within lessons as well as looking at and providing feedback for tasks submitted via Purple Mash. Use of the Data Dashboard informs teachers which children require further challenge as well as children who require additional support within Computing lessons to meet the expectations of their key stage. Children's work completed on Purple Mash is stored in their pupil folders and work completed outside of this can be found on their pupil areas for Key Stage Two or

class area for EYFS and Key Stage One. This enables staff to easily find children's work and ascertain whether objectives have been met.

Computing in EYFS

In EYFS, children are given regular and varied opportunities to develop their Computing skills. Within the classroom environment, there are a range of ICT tools such as Beebots, Talk Tins, iPads and Tuff-Cams for children to explore and be creative with. Additionally, children have Computing sessions in small groups which develop their early Computing skills, such as: clicking, dragging, dropping, drawing onscreen, typing short words and phrases, taking photographs and pressing buttons to program a floor robot.

During their time in EYFS, children have two coding units which provide them with opportunities to make things happen through the touch of buttons as well as beginning to predict the outcome. By the end of EYFS, it is expected that children can instruct a floor robot to act upon a series of instructions and reach a chosen target. Additionally, children have two units which focus on communicating through media. They begin by using one form of media separately such as creating music or images and this is progressed to combining different types of media by the end of EYFS so that children are ready to begin Key Stage One. In EYFS, children also have opportunities to collect data about themselves, each other and the world around them and present this in simple pictograms.

Children in EYFS have regular discussions about keeping themselves safe online. They participate in discussions about how to respond to anything that worrying content; how their online behaviour should mirror their kindness and politeness in the real world and the time restrictions which are advised for using technology. This ensures that even from an early age, our pupils understand the risks posed by technology and how they can reduce these risks by following simple rules.

EYFS Yearly Cycle

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Communicate
Development Matters	30-50 months Knows how to operate simple equipment, e.g. turns on CD player and uses remote control 40-60 months Completes a simple program on a computer 40-60 months Uses ICT hardware to interact with age-appropriate computer software	30-50 months Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. 30-50 months Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. 30-50 months Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. 40-60 months Uses ICT hardware to interact with age-	30-50 months Knows that information can be retrieved from computers 40-60 months Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	30-50 months Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. 30-50 months Uses ICT hardware to interact with age-appropriate computer software. 40-60 months Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	30-50 months Knows how to operate simple equipment, e.g. turns on CD player and uses remote control. 30-50 months Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. 40-60 months Uses ICT hardware to interact with age-appropriate computer software. 40-60 months Completes a simple program on a computer 40-60 months	30-50 months Knows how to operate simple equipment, e.g. turns on CD player and uses remote control 40-60 months Completes a simple program on a computer 40-60 months Uses ICT hardware to interact with age-appropriate computer software

		appropriate computer software. 40-60 months Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.			Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	
Objectives (ELGs)	Current ELGs: • To select and use technology for particular purposes.	Current ELGs: • To select and use technology for particular purposes.	Current ELGs: • To recognise that a range of technology is used in places such as homes and schools.	Current ELGs: • To select and use technology for particular purposes.	Current ELGs: • To select and use technology for particular purposes.	Current ELGs: • To select and use technology for particular purposes.
Key Skills	• Create shapes and patterns on screen using a mouse, trackpad or touchscreen • Use technology to record sounds and videos • Use technology to take photographs	• Make a floor robot move • Make choices about the buttons and icons to press • Make a floor robot reach a target	• Talk about technology that is used at home and at school • Talk about the amount of time spent using technology • Know that it is important to be careful with devices • Ask an adult when using the Internet • Tell an adult when something worrying or	• Use simple equipment, e.g. a digital camera or iPad • Talk about different kinds of information • Add information to a pictogram	• Make a floor robot move (by entering a series of commands) • Use simple software to make something happen	• Create text on screen by using a keyboard • Combine text and images • Use technology to show learning

			unexpected happens whilst using the Internet			
Programs & Resources	• Mini Mash/Simple City • Purple Mash – 2Paint, 2Paint a Picture, Paint Projects, 2Create a Story, Mashcams • Paint on Interactive Whiteboard	• Mini Mash/Simple City • Purple Mash- 2Go, Simple City, 2Create a Story • BeeBots & mats • Kodable and Daisy the Dinosaur apps	• Mini Mash/Simple City • Purple Mash – Mashcams, 2Create a Story, Mini Mash slideshows, Talking Stories • Kidsmart – Smartie the Penguin • www.safesearchkids.com	• Mini Mash/Simple City • Purple Mash – 2Count, 2Quiz and Maths City • iPads	• Mini Mash/Simple City • Purple Mash (2Code, 2Go) • Beebots • Purple Mash – 2Email, Talking Stories, Maths City, 2DIY and 2Design and Make	• Mini Mash/Simple City • Purple Mash – 2Create a Story, 2Beat, 2Explore, 2Design and Make, 2Paint a Picture, Paint Projects, 2Connect. Slideshow Creator (Mini Mash), • iPads – voice recorder, camera
Purple Mash units	Understanding the World: People and Communities Expressive Arts/ Communication and Language: Being Imaginative Personal, Social and Emotional Development: Self-	Personal Development: Health and Self-care Communication and Language: Understanding	Understanding the World: Technology Communication and Language: Listening and Attention Communication and Language: Speaking	Personal, Social and Emotional Development: Making relationships Mathematics: Numbers	Literacy: Reading Literacy: Writing Mathematics: Shape, Space and Measure	Expressive Arts: Exploring and Using Media Understanding the World: The World

	confidence and Self-awareness					

Computing in Key Stage One

During their two years in Key Stage One, children build upon the basic Computing skills they developed in EYFS. There are many opportunities for repetition built into the Key Stage One cycles to ensure that children recap, revisit and deepen their understanding of coding, communicating, collecting data and using technology safely. Purple Mash's units are used by teaching staff to support them in planning high-quality and engaging lessons for learners but they are not used prescriptively; staff are encouraged to tweak units according to the needs of their children.

In Years 1 and 2, children have four coding units which provide them with opportunities to sequence instructions carefully to make achieve a certain goal and begin to debug errors in their algorithms. Children's coding skills are developed first through the use of floor robots and then their learning is applied to simple coding software such as 2Go, 2Code and Kodu. Additionally, children have four units which focus on communicating through media. Children are given opportunities to combine a range of media such as sounds, images, text and animations. Furthermore, children begin to share their work digitally with others through the use of Microsoft Teams. During the two-yearly cycle, children have two units in which they collect, use, sort and present data in pictograms and simple spreadsheets.

Children in Key Stage One have regular opportunities to consider how to keep themselves safe online. They identify what is meant by 'personal information'; begin to consider what makes a strong password; discuss how to respond to unexpected and worrying instances online; begin to consider what is on their digital footprint and search the World Wide Web for particular purposes.

Key Stage One(Cycle A)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Communicate
Objectives	To use technology purposefully to create, organise, store, manipulate and retrieve digital content	• To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To use logical reasoning to predict the behaviour of simple programs • To create and debug simple programs	To 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.	• To use technology purposefully to create, organise, store, manipulate and retrieve digital content • To recognise common uses of information technology beyond school	• To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To use logical reasoning to predict the behaviour of simple programs • To create and debug simple programs	To use technology purposefully to create, organise, store, manipulate and retrieve digital content

| Key Skills | • Use different drawing tools to create a picture
• Add text to a page and change the colour, font and size of text
• Save work and any changes made
• Open my saved work
• Add an animation to pictures
• Add sounds to pages, including voice recordings
• Create music to add to pages
• Copy and paste pages
• Share work digitally with others | • Understand the important of giving clear instructions
• Know that an algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective
• Know that computers need precise instructions to follow
• Understand how the order in which steps are presented affects the outcome
• Organise instructions carefully
• Debug errors in an algorithm | • Identify examples of technology
• Login safely
• Find saved work
• Share work digitally
• Use the Purple Mash search tool
• Keep passwords and other personal data private
• Tell an adult when something unexpected or worrying happens online
• Talk about why it's important to be kind online
• Open and send simple emails
• Understand what a digital footprint is | • Sort items using a range of criteria physically and on the computer
• Collect data and use illustrations to create a simple pictogram
• Represent results as a pictogram and talk about findings | • Predict what will happen when giving a floor robot a series of instructions
• Explain what coding means
• Build one and two-step instructions
• Create and design simple programs
• Add characters and make a background on a program
• Write a program that controls how a character will move
• Program a character to move given a variety of input events
• Add sounds to programs | • Explore, edit and combine sounds
• Add sounds to a tune already created
• Upload a sound from a bank of sounds
• Record sounds and upload it
• Create music using a range of sounds
• Save their work and retrieve it
• Use technology to create and present ideas, including printing a document |

Programs & Resources	• Purple Mash – 2Create a Story • Microsoft Teams	• Purple Mash – Paint Projects, Wrong Sandwich activity, recipe sequencing games • Kodu	• www.safesearchkids.com • Think U Know – Hector's World • Purple Mash – 2Respond (2Email), 2Connect • iPads to take photographs of technology • Microsoft Teams	• Purple Mash – grouping activities, 2Connect, 2Count • 3D shapes • Toys • Dice	• Beebots • Purple Mash – 2Code Chimp activities, 2Code Free Code Chimp	• Purple Mash – 2Sequence • Microsoft Word • Microsoft PowerPoint • Microsoft Teams
Purple Mash Units	Unit 1:6 Animated Stories	Unit 1:4 Lego Builders (Additional lessons on Kodu)	Unit 1:9 Technology Outside School Unit 1:1 Online Safety and Exploring Purple Mash (Lessons 1 and 2) Unit 2:2 Online Safety	Unit 1:2 Grouping and Sorting Unit 1:3 Pictograms Unit 2:4 Questioning	Unit 1:7 Coding	Unit 2:7 Making Music

Key Stage One(Cycle B)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Communicate
Objectives	To use technology purposefully to create, organise, store, manipulate and retrieve digital content	• To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To use logical reasoning to predict the behaviour of simple programs • To create and debug simple programs	To 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.	• To use technology purposefully to create, organise, store, manipulate and retrieve digital content • To recognise common uses of information technology beyond school	• To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • To use logical reasoning to predict the behaviour of simple programs • To create and debug simple programs	To use technology purposefully to create, organise, store, manipulate and retrieve digital content

| Key Skills | • Save documents into their work folder
• Open saved documents and edit them
• Use the keyboard to add text
• Add images by using clipart or drawing a picture
• Use technology to present ideas
• Be creative with different technology tools | • Know how to rectify errors when creating an algorithm
• Use direction keys
• Create progressively more sophisticated algorithms
• Debug an algorithm
• Change background images
• Begin to predict what will happen for a short sequence of instructions | • Keep passwords and other personal data private
• Tell an adult when something unexpected or worrying happens online
• Talk about why it's important to be kind online
• Identify basic parts of a web search engine page
• Read search results | • Navigate around a spreadsheet, explaining what rows and columns are
• Save, open and edit spreadsheets
• Enter data into spreadsheets
• Find and add images to spreadsheets
• Move and lock images in spreadsheets
• Give images values in spreadsheets and use the count tool
• Use copy and pasting in spreadsheets
• Total rows and columns in spreadsheets
• Create a table of data on a spreadsheet | • Describe the algorithm created
• Create a computer program using simple algorithms, progressing onto more complex algorithms
• Use the repeat and timer commands
• Debug simple programs
• Predict what objects will do in programs | • Create art digitally
• Combine more than one effect
• Add drawings and clipart to artwork
• Open, save and edit work
• Share work digitally with others
• Add text and images to a slideshow |

Programs & Resources	• Purple Mash – 2Connect, 2Quiz, 2Publish, 2Create a Story • Microsoft Teams	• Purple Mash – 2Go • Kodu	• www.safesearchkids.com • Think U Know – Lee and Kim's Adventures • Purple Mash – Introduction to the Internet presentation, Internet Quiz, Effective Search presentation, 2PublishPlus • https://duckduckgo.com/ • https://digital-literacy.org.uk/curriculum-overview/fs-year1/fs-year1-sol-(1).aspx/ • https://digital-literacy.org.uk/curriculum-overview/year2/year-2-sol-(1).aspx/	• Purplemash – 2Calculate	• Purple Mash – 2Code Chimp activities, 2Code Free Code Chimp, • Storyboards	• Purple Mash – 2 Paint a Picture, 2Publish • Microsoft PowerPoint • Microsoft Teams
Purple Mash Units	Unit 2:8 Presenting Ideas	Unit 1:5 Maze Explorers (Additional lessons on Kodu)	Unit 2:5 Effective Searching (Additional Online Safety work using Digital Literacy org website)	Unit 1:8 Spreadsheets Unit 2:3 Spreadsheets	Unit 2:1 Coding	Unit 2:6 Creating Pictures

Computing in Lower Key Stage Two

During Years 3 and 4, children become confident users of Information and Communication Technology. As they did in Key Stage One, learners have several opportunities to revisit and strengthen their understanding of coding, communicating, using data and connecting with others online. Purple Mash units continue to be used by teaching staff to ensure lessons are progressive and high-quality but staff use their discretion to alter units according to the children they are teaching and the software they believe will best teach National Curriculum objectives.

In Lower Key Stage Two, children have four coding units in which they further their competency with creating and debugging algorithms, as well as setting and changing variables; using if and else statements and repeating commands. Children still have opportunities to use floor robots, as well as using screen-based software such as 2Code, Logo, Scratch and a variety of simulations. Additionally, children have three units which focus on communicating through media. Children are given opportunities to combine a range of media such as sounds, images, text and animations. Furthermore, children have opportunities to touch-type and apply their knowledge of media to programs such as Microsoft PowerPoint. Children in Years 3 and 4 continue to make use of Microsoft Teams to share their work digitally with their peers, as well as connecting with others through Purple Mash's 2Email and 2Blog software. During the two-yearly cycle, children have two units in which they collect, enter, sort and present data in branching databases, spreadsheets and graphs.

Children in Key Stage Two become confident users of the Internet through regular discussion about Online Safety as well as 'To Connect' units which focus on: the benefits and risks of software; their digital footprint; identity theft; devising strong passwords; plagiarism; reliability of information on the World Wide Web and online bullying.

Lower Key Stage Two (Cycle A)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Communicate

| Objectives | 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 | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts | Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Use technology safely, respectfully and responsibly; recognise acceptable/unaccep table behaviour; identify a range of ways to report concerns about content and contact. | 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** | 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 | 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 |
|---|---|---|---|---|---|---|
| **Key Skills** | • Use the Onion Skin tool to create an animated image
• Use backgrounds and sounds to make complex and imaginative animations | • Use a simulation to try out different options and test predictions
• Recognise patterns within simulations and make and test predictions | • Understand how protect themselves from online identity theft
• Know what a digital footprint is
• Identify risks and benefits of | • Contribute to a class database
• Create a branching database
• Know how to use and debug a branching database | • Create code for a design of their own
• Create if/else statements in programs
• Set and change variable values
• Create a program with | • Use two hands to type letters on the keyboard
• Know where different letters, numbers and symbols appear on a keyboard |

	• Know what 'stop motion' animation is and recreate this in their own animations • Share animations and comment on other children's work using display boards and blogs • Create simple rhythms and melodic patterns using Busy Beats and 2Sequence		• installing software • Understand what plagiarism is • Identify appropriate behaviour when contributing to collaborative online projects • Identify positive and negative influence of technology on health • Structure search queries to locate specific information • Analyse contents of a webpage for clues about the credibility of information	• Set up a graph and enter data • Present results in a range of formats	• repeated actions • Make a character respond to user keyboard input • Use an algorithm when making a simulation	• Open an email and respond to it • Attach work to an email • Know what CC means and how to use it
Programs & Resources	• Purple Mash – 2Animate, 2Blog, display boards, Busy Beats, 2Sequence, Music review sheet, 2Quiz Musical Elements, Musical Definitions Quiz	• Purple Mash – Simulations Photo Prompts, About Simulations Writing Template, 2Simulate Locked Out simulation, Equipment Requisition	• Purple Mash – 2Resond SPAM activity, 2Respond Downloading Software activity, Malware Slideshow, 2Connect, Tim Berners Lee writing	• Purple Mash – Classifying Fruit, 2Question, 2Graph, Favourite Colours graph, 2Blog,	• Purple Mash – 2Code, Free Code Gibbon, Gibbon Night and Day activity, Repeat and Sequence example activity, Video of UK traffic light sequence	• Purple Mash – 2Type, 2Connect, 2Email, Email Safety Slide Show, Email Safety Quiz, 2DIY Quiz Tool, 2Email 2Respond Creator

	- Post-it notes - Flickbooks - https://wallaceandgromit.com/films/cracking-contraptions - Percussion instruments		template, Plagiarism quiz, 2Invesitgate Screen Time Database, Finding Answers Slideshow, Internet Recap Quiz - Screen time record cards (printable from Purple Mash) - Wikipedia - Google - Identify theft resources - ICO			
Purple Mash Units	Unit 4:6 Animation Unit 4:9 Making Music	Unit 3:7 Simulations	Unit 4:2 Online Safety Unit 4: 7 Effective Searching	Unit 3:6 Branching Databases Unit 3:8 Graphing	Unit 4:1 Coding	Unit 3:4 Typing Unit 3:5 Email

Lower Key Stage Two (Cycle B)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Connect

Objectives	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	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	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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**	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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
Key Skills	• Open PowerPoint • Add text and format it • Insert shapes and pictures • Edit pictures • Change slide design	• Design and write a program • Make use of the X and Y properties of objects in coding • Create an if statement in a program	• Understand what makes a good password. • Contribute to a class blog. • Search the Internet and think critically about the	• Use a spreadsheet program to create charts and graphs • Use different tools on spreadsheets to compare numbers and	• Input simple instructions in Logo • Understand pu and pd commands • Use the repeat function	• Name the different parts of a desktop computer • Know the functions of different parts of a computer • Identify inputs and outputs for

	• Insert new slides • Insert video and audio • Use animations and transitions in a presentation • Add timings to a presentation • Share PowerPoints with other children on Teams	• Use a timer and if statement to introduce selection in a program • Create a variable in a program • Set/change the variable values appropriately to create a timer • Debug simple programs • Save work after each version of a program	results that are returned. • Share work on a class display board. • Explain strategies for dealing with online bullying	work out solutions • Describe a cell location • Use the timer, random number and spin button tools • Use currency formatting • Allocate values to images	• Predict the outcome of an algorithm • Use and build procedures in Logo • Draw shapes on Logo and Scratch • Input simple instructions in Scratch	some applications and programs • Explain what a network is • Identify parts of a computer network and the functions of hardware within it • Consider the benefits of applications and programs
Programs & Resources	• Microsoft PowerPoint • Microsoft Teams	• Purple Mash – 2Code Freecode Gibbon, 2Chart, Knights Castle Flowchart, Debug Challenge Gibbon, 2Connect	• Purple Mash – 2Connect, 2Blog, 2Publish webpage, Purple Mash display board, PEGI ratings PDF, Appropriate Content Quiz, 2Write • https://www.allaboutexplorers.com/ • http://www.thedogisland.com/ • https://www.thinkuknow.co.uk/8_10/watch/	• Purple Mash – 2Calculate	• Purple Mash – Logo • Lesson worksheets (printable from Purple Mash) • Scratch • Squared paper • Protractors	• Purple Mash – Parts of a Computer pairs game, Computer Parts slideshow • Old computers (see Malc from RedTop) • Find resources on Staff Share > 2020-2021 > Computing > Computers and Networks • Code.org • Barefoot Computing • www.codeit.co.uk

			• https://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew • https://www.safesearchkids.com/			• Quickstart Computing
Purple Mash Units	Unit 3:9 Presenting (MS PowerPoint)	Unit 3:1 Coding	Unit 3:2 Online Safety	Unit 3:3 Spreadsheets Unit 4:3 Spreadsheets	Unit 4:5 Logo 4 lessons (Additional lessons on Scratch)	Unit 4:8 Hardware Investigators

Computing in Upper Key Stage Two

During Years 3 and 4, children become confident users of Information and Communication Technology. As they did in Key Stage One, learners have several opportunities to revisit and strengthen their understanding of coding, communicating, using data and connecting with others online. Purple Mash units continue to be used by teaching staff to ensure lessons are progressive and high-quality but staff use their discretion to alter units according to the children they are teaching and the software they believe will best teach National Curriculum objectives.

In Upper Key Stage Two, children have four 'To Code' units in which they develop as proficient and confident coders. They use all features of coding software to create sophisticated games and consider the playability of their games. Children use a range of coding software such as 2Code, Scratch, Kodu, 2DIY 3D and 2Create A Story to achieve their desired outcomes. Additionally, children have three units which focus on communicating through media. Children are given opportunities to combine a range of media such as sounds, images, text and animations. Furthermore, children have opportunities to apply their knowledge of media to programs such as Microsoft Word as well as sharing their work with their peers through Microsoft Teams, 2Blog and Purple Mash display boards. During the two-yearly cycle, children

have two units in which they search databases, create formulae, sort data and solve problems using spreadsheets. They begin by using Purple Mash software such as 2Calculate and 2Investigate and progress to using Microsoft Excel in readiness for secondary school.

Children in Key Stage Two become responsible, competent and confident users of the Internet through regular discussion about Online Safety as well as 'To Connect' units which focus on: the long-term implications of sharing content online; the benefits and risks of sharing locational information; plagiarism; citation; the health implication of screen time; image permissions and editing images.

Upper Key Stage Two (Cycle A)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Communicate
Objectives	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	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	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report	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**	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	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

			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	concerns about content and contact.			
Key Skills	• Understand the key features of a blog • Work collaboratively to plan a blog • Create a blog for a specific purpose • Post comments and blog posts to an existing class blog	• Create code for a design • Select features to incorporate in a simulation • Set and change variable values • Create a game which has a timer and score pad • Use variables to control objects • Create loops using timers and if/else statements • Include buttons and objects that launch windows	• Identify benefits and risks of mobile devices broadcasting location • Identify secure sites • Identify benefits and risks of giving personal information • Understand the long-term implications of what is shared online • Identify the positive and negative influences of technology on health	• Search a database in different ways • Enter information into a database • Create a database and add records to it • Know what database fields are	• Upload images and use drawing tools to design the walls, floor and roof • Design characters and change the animations and sounds they make • Create a game, considering its playability	• Create a picture-based quiz • Use different question types in 2Quiz • Share quizzes with peers and respond to their feedback • Collaborate on a quiz • Create a quiz show quiz
Programs & Resources	• Purple Mash – 2Blog, 2Write, 2Connect,	• Purple Mash – 2Code Free Code Gorilla, Using TABs video, Example	• Purple Mash – 2DIY, 2DIY 3D, 2Code, 2DIY 3D Online Safety Game example,	• Purple Mash – 2Investigate, Alien question sheets and quizzes,	• Purple Mash – 2DIY 3D, Computer Game Planner	• Purple Mash – 2Connect, 2DIY, 2Blog, display board, 2Quiz, Text Toolkit,

		Spider Game, 2Blog, Adding buttons to open webpages video • Storyboard templates	2Investigate Applications Database, Digital Footprint Quiz, Screen-time 2Investigate Database • CEOP video - https://www.youtube.com/watch?v=_o8auwnJtqE • http://www.teachertube.com/viewVideo.php?video_id=147297 • UKCCIS – Education for a Connected World • www.net-aware.org.uk • www.internetmatters.org • www.bbc.com/ownit			Example Holiday Quiz, 2Invesigate Tool, Game Show Example
Purple Mash Units	Unit 6:4 Blogging	Unit 5:1 Coding	Unit 6:2 Online Safety	Unit 5:4 Databases	Unit 5:5 Game Creator	Unit 6:7 Quizzing

Upper Key Stage Two (Cycle B)

Term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Area	To Communicate	To Code	To Connect	To Collect	To Code	To Connect
Objectives	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	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	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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**	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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

		correct errors in algorithms and programs				
Key Skills	• Create a Word document, altering the look of the text and navigating around the document • Add images and edit them • Search for image which are permitted for reuse • Understand wrapping images and text • Format text, considering line spacing and dropping capitals • Use bullet points and numbering • Add text boxes and shapes • Use page breaks, headers and footers • Add hyperlinks	• Plan a program, anticipating variables required • Debug when things do not run as expected • Code programs that take text input from the user • Attribute variables to user input	• Think critically about information shared online • Identify trusted adults • Use SMART rules • Understand how to create secure passwords • Understand the advantages, disadvantages, permissions and purposes of altering an image digitally • Understanding the impact of sharing text, photographs and videos online • Cite sources when researching • Select keywords and search techniques to	• Create a formula to convert measurements • Use the 'how many' tool • Create formulae that use different variables • Copy, paste and use shortcuts • Use a spreadsheet to solve a problem • Use the SUM function • Sort data in an Excel document	• Create, test and debug in 2Create A Story • Use coding concepts of functions, two-way selection (if/else statements) and repetition to code a game • Make logical attempts to debug code	• Confidently distinguish between the World Wide Web and the Internet • Explain what the Internet is and how it works • Know about their school network • Explain what a LAN and a WAN are • Consider how technology has changed during their lifetime and other people's lifetimes • Explain how data is saved in binary format

			find relevant and reliable information			
	• Add tables and edit is properties, including borders, colours, merging cells, adding and removing rows and columns • Group objects • Cut and paste • Save documents					
Programs & Resources	• Microsoft Word • Microsoft Teams	• Purple Mash – 2Code Free Code Gorilla, 2Code Game Planner, Spider Catcher Game, Introduction to Tabs video, 2Code Functions Gibbon, Guess Which Alien example, Billy's Bedroom Simulation	• Purple Mash – SMART rules poster, display board, Password Quiz, 2Paint A Picture, Plagiarism Quiz, Citations Slideshow, • http://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew • Post-it notes • Webcam on laptops • CEOP video - https://www.youtube.com/watc	• Purple Mash – 2Calculate, Purple House Charity Day sheet • Microsoft Excel	• Purple Mash – Red Riding Hood Adventure Game, 2Connect, 2Create A Story, Example Y6 Text Adventure, Text Adventure Planner, • Adventure books • Scratch/Kodu	• Purple Mash – Communication Questionnaire, 2Connect, Computer Inputs file, What is Binary presentation, 2Question Branching Binary Database, Database Puzzler, Counting in Bits activity, 2Code, Binary Quiz • What is the World Wide Web? https://www.bbc.co.uk/bitesize/topics/zkcqn39/articles/z2nbgk7#zt6c4wx

			h?v=_o8auwnJtqE • http://www.teachertube.com/viewVideo.php?video_id=147297 • UKCCIS – Education for a Connected World • www.net-aware.org.uk • www.internetmatters.org • www.bbc.com/ownit			• A router, network cables, modem • Malc from RedTop if available • LAN and WAN http://www.bbc.co.uk/schools/gcsebitesize/ict/datacomm/2networksrev1.shtml • A Packet's Tale: https://www.youtube.com/watch?v=Gfoc3Cxgnpk • How does the Internet work? https://www.bbc.co.uk/bitesize/topics/z7wtb9q/articles/z3tbgk7 • How Undersea Internet Cables Carry The Internet Across The Ocean | Earth Lab - YouTube • A Journey To The Bottom Of The Internet - YouTube • Code.org

						- Barefoot Computing - www.codeit.co.uk Packet game - Quickstart Computing
Purple Mash Units	Unit 5:8 Word Processing with Microsoft Word	Unit 6:1 Coding	Unit 5:2 Online Safety	Unit 5:3 Spreadsheets Unit 6:9 Spreadsheets	Unit 6:5 Text Adventures	Unit 6:8 Binary