

Computing at Holy Trinity CE Primary

“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is the most adaptable to change.” *Charles Darwin*

Our curriculum **intent for Computing** is that every child will:



- be inspired and enthused by the creative possibilities technology offers
- know how to use technology safely, respectfully and responsibly,
- understand and apply the fundamental principles and concepts of computer science
- gain practical experience of writing computer programs in order to solve problems.
- gain a wide range of experiences in technology in order to prepare pupils for their next phase in life

Holy Trinity is committed to ensuring all children have full access to a high-quality computing education. We have a range of excellent resources to support children in their learning across the whole curriculum as well as in their discrete computing lessons. The school makes good use of shared resources such as iPads, laptops and other technical resources which can be used within lessons or as part of group work.

Implementation of the Computing Curriculum at Holy Trinity

The Curriculum is largely focused around 3 key areas:

- **Digital Literacy:** using IT purposefully, creatively and safely.
- **Computer Science:** developing computational thinking and programming skills.
- **Information Technology:** understanding how computers, networks and the web function.

We aim to develop meaningful links across other curriculum subjects for pupils to be able to apply and practice their computing skills.

At Holy Trinity pupils and teachers use a variety of hardware such as iPads, laptops, Beebots, Micro Bits digital microscopes etc.

Pupils use:

- [Purple Mash](#) coding and Scratch to create and de-bug programmes.
- Microsoft software including Word, PowerPoint and Excel to present information
- Purple Mash to create and manipulate images and documents
- Create blogs using our school blog and school email to communicate with their peers
- Create films using iMovie and Purple Mash 2Animate
- Use hardware to search the internet for research purposes linked to topics

The safe use of technology and the internet underpins our curriculum. We have a focus on Internet Safety in each year group. We subscribe to [National Online Safety](#) to provide staff and parents with up-to-date information about gaming and apps available. This platform also provides a bank of age-appropriate resources to be used with the pupils. In our ever-changing technological world, we aim to ensure all our pupils have the skills and knowledge to stay safe and behaviour appropriately on-line.

Pupils use Teams to upload assignments and access homework. Along with a variety of on-line platforms. Our Digital Leaders support other children with a variety of skills and share their expertise when needed.

The Impact of the Computing Curriculum at Holy Trinity

Holy Trinity pupils have experience of a range of software and developed their computing skills during their time with us. They are prepared for using Teams for blended learning at secondary school and have developed their independence to be able to access and upload assignments set.

In teaching our pupils how to behave appropriately on-line and how to report a problem, we have given them transferrable skills to prepare them for whatever future technology awaits them.

'I know that there is nothing better for people than to be happy and to do good while they live.' Ecclesiastes 3:12
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How does Computing fit into our School Vision?



Computing links/actions:

- Ensure online safety is planned and delivered effectively and regularly in every year group
- Offer Internet Safety advice to parents through our website, newsletter and parents' information evenings in order for them to support their child being safe online
- Use Digital Leaders in school to support their peers and instil confidence in their computing abilities
- Provide CPD for staff in computing National Curriculum using Purple Mash scheme of work
- Provide CPD for staff in personal computing skills for use in the classroom
- Ensure hardware (including internet access and staff laptops) is off a high standard to enable staff to undertake their job effectively and efficiently
- Explore ways that technology can reduce staff workload and enhance efficient working
- Ensure pupils have access to high quality hardware
- Ensure pupils have access to high quality learning platforms online
- Ensure pupils have access to a secure, safe internet that allows them to access information they need to support their learning but in a very controlled, safe environment
- Be aware of new technologies that would engage and inspire pupils
- Research apps to install to support learning
- Approach local companies to offer sponsorship/funding for the purchase of new hardware
- Link with Charters and St. George's to enquire about support from students/with resources and learning
- Forge links with other Computing subject leaders across the local cluster

Holy Trinity CE Primary Computing overview

	Autumn	Spring	Summer
EYFS	ELG (Technology): There are no early learning goals that directly relate to computing objectives, though it is still expected that children will be introduced to appropriate technology and use it within provision. - Learning how to log onto Purple Mash and use age-appropriate software eg 2 Paint and set 2dos related to our topic work - We will become more independent using ICT equipment in the classroom eg taking photos for Tapestry, timers - We will use the internet to help find out facts to support our classroom work - Use some simple programs on the iPads that are cross curricular and support our learning, 'Bugs and Buttons' 'Pre-Motor Dexteria' Internet Safety - In our PSHE lessons we will use the SCARF program to look at 'Keeping Safe on-line' and talking about ways to stay safe when using technology.		
Year 1	Information Technology Purple Mash Unit 1.3: Pictograms (2Count) National Curriculum Objectives: Pupils should be taught to: - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: - To understand that data can be represented in picture format. - To contribute to a class pictogram. To use a pictogram to record the results of an experiment. Key Vocabulary: - Collect Data, Compare Data, Pictogram, Record, Results, Title. Digital Literacy (includes Internet Safety) Purple Mash Unit 1.1: Online Safety and Exploring Purple Mash National Curriculum Objectives: Pupils should be taught to:	Computer Science Purple Mash Unit 1.5 – Maze Explorers (2Go) National Curriculum Objectives: 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 Pupils will know how: - To understand the functionality of the direction keys. To understand how to create and debug a set of instructions (algorithm). - To use the additional direction keys as part of an algorithm. - To understand how to change and extend the algorithm list. - To create a longer algorithm for an activity. - To set challenges for peers. - To access peer challenges set by the teacher as 2Dos. Key Vocabulary:	Computer Science Purple Mash Unit 1.7 – Coding (2Code) National Curriculum Objectives: 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 Pupils will know how: - To understand what instructions are and predict what might happen when they are followed. To use code to make a computer program. - To understand what object and actions are. - To understand what an event is. - To use an event to control an object. - To begin to understand how code executes when a program is run. - To understand what backgrounds and objects are. To plan and make a computer program. Key Vocabulary:

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- 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. Pupils will know how: To log in safely. To learn how to find saved work in the Online Work area and find teacher comments. - To learn how to search Purple Mash to find resources. - To become familiar with the icons and types of resources available in the Topics section. - To start to add pictures and text to work. - To explore the Tools and Games section of Purple Mash. To learn how to open, save and print. To understand the importance of logging out. Key Vocabulary: Button, Alert, Avatar, Device, File, Name, Icon, Log in, Log out, Menu, Notification, My Work Area, Private, Password, Purple Mash Tools, Saving, Search.	Algorithm, Direction, Route, Challenge, Instruction, Undo, Command, Left and Right, Unit. Information Technology Purple Mash Unit 1.6 – Animated Story Books (2CreateAStory) National Curriculum Objectives: Pupils should be taught to: - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: - To introduce e-books and the 2Create a Story tool. To add animation to a story. - To add sound to a story, including voice recording and music the children have composed. - To work on a more complex story, including adding backgrounds and copying and pasting pages. - To share e-books on a class display board Key Vocabulary: Animation, Background, Clip-art, Gallery, E-book, Edit, Font, Sound, Sound Effect, Text. Digital Literacy (includes Internet Safety) National Safer Internet Day 'All Fun and Games? Exploring respect and relationships online' National Curriculum Objectives: Pupils should be taught 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. Pupils will know how: - how to stay safe on-line how to behave respectfully when they are on-line what private information to keep off line	Action, Code, Algorithm, Coding, Background, Command, Execute, Debug/ Debugging, Event, Instruction, Object, Output, Plan, Programmer, Properties, Run Information Technology Purple Mash – Unit 1.8 Spreadsheets (2Calculate) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: - To know what a spreadsheet program looks like. - To locate 2Calculate in Purple Mash. To enter data into spreadsheet cells. - To use 2Calculate image tools to add clipart to cells. - To use 2Calculate control tools: lock, move cell, speak and count. Key Vocabulary: Button, Calculations, Cell, Clip-art, Column, Count tool, Data, Delete, Image, Lock cell, Move cell, Row, Speak tool, Spreadsheet, Value Digital Literacy (includes Internet Safety) Purple Mash Unit 1.9 Technology Outside School National Curriculum Objectives: Pupils should be taught to - recognise common uses of information technology beyond school Pupils will know how: - To walk around the local community and find examples of where technology is used. - To record examples of technology outside school. Key Vocabulary:
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		what to do if they feel unsafe or concerned Key Vocabulary: Personal information, Safety, online, report a concern, respectful behaviour	Technology, Computer
Year 2	Information Technology Purple Mash Unit 2.5 – Effective Searching (Google) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: - To understand the terminology associated with searching. To gain a better understanding of searching on the Internet. - To create a leaflet to help someone search for information on the Internet. Key Vocabulary: Digital, Footprint, Network, Web, Page, Domain, Search Engine, World Wide Web, Internet, Web Address, Web Site Purple Mash Unit 2.6 Creating Pictures (2PaintAPicture) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: To learn the functions of the 2Paint a Picture tool. - To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). - To recreate Pointillist art and look at the work of pointillist artists such as Seurat. - To learn about the work of Piet Mondrian and recreate the style using the lines template.	Computer Science Purple Mash Unit 2.1 – Coding (2Code) National Curriculum Objectives: 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 Pupils will know how: - To understand what an algorithm is. To create a computer program using an algorithm. - To create a program using a given design. - To understand the collision detection event. To understand that algorithms follow a sequence. - To design an algorithm that follows a timed sequence. - To understand that different objects have different properties. - To understand what different events do in code. - To understand the function of buttons in a program. To understand and debug simple programs. Key Vocabulary: Action, Algorithm, Background, Bug, Button, Click events, Collision detection, Command, Debug / Debugging, Event, Execute, Implement, Instructions, Interaction, Interval, Object, Output, Properties, Run.	Information Technology Purple Mash Unit 2.3 – Spreadsheets (2Calculate) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: - To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. - To learn how to copy and paste in 2Calculate. - To use the totalling tools. - To use a spreadsheet for money calculations. - To use the 2Calculate equals tool to check calculations. To use 2Calculate to collect data and produce a graph Key Vocabulary: Block, Graph, Cell, Column, Copy, Count tool, Data, Drag, Equals, Equals tool, Row, Label, Speak tool, Total, Table Purple Mash Unit 2.4 – Questioning (2Investigate & 2Question) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content

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- To learn about the work of William Morris and recreate the style using the patterns template. - To explore surrealism and eCollage. Key Vocabulary: Surrealism, Art, Fill, Impressionism, Palette, Pointillism, Style Digital Literacy (includes Internet Safety) Purple Mash Unit 2.2 Online Safety National Curriculum Objectives: Pupils should be taught to - 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. Pupils will know how: - To know how to refine searches using the Search tool. - To use digital technology to share work on Purple Mash to communicate and connect with others locally. - To have some knowledge and understanding about sharing more globally on the Internet. To introduce Email as a communication tool using 2Respond simulations. - To understand how we should talk to others in an online situation. To open and send simple online communications in the form of email. To understand that information put online leaves a digital footprint or trail. To identify the steps that can be taken to keep personal data and hardware secure. Key Vocabulary: Attachment, Filter, Digital footprint, Internet, Email, Personal information, Secure, Internet, Private information, Search, Sharing	Information Technology Purple Mash Unit 2.8 – Presenting Ideas (2Quiz, 2Connect + various software) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: To explore how a story can be presented in different ways. - To make a quiz about a story or class topic. - To make a fact file on a non-fiction topic. - To make a presentation to the class. Key Vocabulary: E-book, Fact file, Fiction, Mind map, Node, Non-fiction, Presentation, Quiz. Digital Literacy (includes Internet Safety) National Safer Internet Day 'All Fun and Games. Exploring respect and relationships online' National Curriculum Objectives: Pupils should be taught 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. Pupils will know how: - how to stay safe on-line how to behave respectfully when they are on-line what private information to keep offline what to do if they feel unsafe or concerned Cross Curricular Links/outcomes: - RE Nativity Story - PSHE:- Keeping Safe	Pupils will know how: - To learn about data handling tools that can give more information than pictograms. - To use yes/no questions to separate information. To construct a binary tree to identify items. To use 2Question (a binary tree database) to answer questions. - To use a database to answer more complex search questions. - To use the Search tool to find information Key Vocabulary: Binary, Tree, Data, Database, Field, Pictogram, Question, Record, Search, Sort. Purple Mash Unit 2.7 – Making Music (2Sequence) National Curriculum Objectives: Pupils should be taught to - use technology purposefully to create, organise, store, manipulate and retrieve digital content Pupils will know how: To make music digitally using 2Sequence. - To explore, edit and combine sounds using 2Sequence. - To edit and refine composed music. - To think about how music can be used to express feelings and create tunes which depict feelings. - To upload a sound from a bank of sounds into the Sounds section. - To record and upload environmental sounds into Purple Mash. - To use these sounds to create tunes in 2Sequence. Key Vocabulary: Beat, Compose, Note, Tune, Sound Effect, Soundtrack, Speed, Tempo, Volume.
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	Cross Curricular Links/outcomes: - Purple Mash to study a famous artist (Piet Mondrian) and create own surrealist picture using 2PaintAPicture - Link to English – Book Reviews - PSHE- Keeping Safe		Cross Curricular Links/outcomes: link to maths when creating spreadsheets
Year 3	Information Technology Purple Mash Unit 3.8 Graphing (2Graph) National Curriculum Objectives Pupils should be taught to: - 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 Pupils will know how: - To enter data into a graph and answer questions. - To solve an investigation and present the results in graphic form. Key Vocabulary: Axis, Chart, Column, Data, Graph, Investigation, Row, Sorting, Tally Chart. Purple Mash Unit 3.3 Spreadsheets (2Calculate) National Curriculum Objectives Pupils should be taught to: - 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 Pupils will know how:	Information Technology Purple Mash Unit 3.4 Touch Typing (2Type) National Curriculum Objectives Pupils should be taught to: - 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 Pupils will know how: - To introduce typing terminology. - To understand the correct way to sit at the keyboard. - To learn how to use the home, top and bottom row keys. - To practise typing with the left and right hand. Key Vocabulary: Typing, Posture, Keys, Space bar. Purple Mash Unit 3.7 Simulations (2Simulate, 2Publish) National Curriculum Objectives Pupils should be taught to: - 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,	Computer Science Purple Mash Unit 3.1 Coding (2Code) National Curriculum Objectives 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 Pupils will know how: - To understand what a flowchart is and how flowcharts are used in computer programming. - To understand that there are different types of timers and select the right type for purpose. - To understand how to use the repeat command. - To understand the importance of nesting. - To design and create an interactive scene. Key Vocabulary: Background, Bug, Button, Click, Even, Code, Collision Detection, Event, Command, Debug/Debugging, Event Flowchart, Implement, Input, Interval, Nesting Object,

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• To use the symbols more than, less than and equal to, to compare values. • To use 2Calculate to collect data and produce a variety of graphs. • To use the advanced mode of 2Calculate to learn about cell references. Key Vocabulary: Advance mode, Bar graph, Equals, Data, Cell, Address, Rows, Columns, Less Than, More Than, More than, Less than & Equal Tool, Pie Chart, Quiz Tool, Spin Tool, Spreadsheet, Table. Cross Curricular Links/outcomes: • Maths link in 'Spreadsheets' & 'Graphing' units Digital Literacy (Including Internet Safety) Purple Mash Unit 3.2 Online Safety (Various software) National Curriculum Objectives Pupils should be taught to: • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Pupils will know how: • To know what makes a safe password. • To learn methods for keeping passwords safe. • To understand how the Internet can be used in effective communication. • To understand how a blog can be used to communicate with a wider audience. • To consider the truth of the content of websites. • To learn about the meaning of age restrictions symbols on digital media and devices. Key Vocabulary: Appropriate, Blog, Inappropriate, Internet, Personal Information, Password, Spoof, Reputable source, Permission, Reliable Source, Verify, Vlog, Website.	including collecting, analysing, evaluating and presenting data and information Pupils will know how: • To consider what simulations are. • To explore a simulation. • To analyse and evaluate a simulation. Key Vocabulary: Modelling, Analysis, Simulation, Evaluation, Decision. Digital Literacy (includes Internet Safety) National Safer Internet Day 'All Fun and Games? Exploring respect and relationships online' National Curriculum Objectives Pupils should be taught to: • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Computer Science & Digital Literacy (Including Internet Safety) Purple Mash Unit 3.5 Email (2Email, 2Connect, 2DIY) National Curriculum Objectives 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,	Predict, Properties, Repeat, Run, Scene, Sequence, Test, Timer, Turtle Object. Information Technology Purple Mash Unit 3.6 Branching Databases (2Question) National Curriculum Objectives Pupils should be taught to: • 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 Pupils will know how: • To sort objects using just 'yes' or 'no' questions. • To complete a branching database using 2Question. • To create a branching database of the children's choice. Key Vocabulary: Binary, Tree, Database, Branching database, Data, Debugging. Cross Curricular Links/outcomes: • Science link to Skeletons to Branching databases • Science link to flowering plants and DT link to Microbits in Coding
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		such as the World Wide Web, and the opportunities they offer for communication and collaboration • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Pupils will know how: • To think about different methods of communication. • To open and respond to an email using an address book. • To learn how to use email safely. • To add an attachment to an email. • To explore a simulated email scenario. Key Vocabulary: Address book, Attachment, BC, CC, Communication, Compose, Email, Inbox, Password, Personal Information, Save to draft, Trusted Contact.	
Year 4	Computer Science National Curriculum Objectives 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	Computer Science Purple Mash Unit 4.7 Effective Searching (Google) National Curriculum Objectives Pupils should be taught to: • 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 Pupils will know how: • To locate information on the search results page. • To use search effectively to find out information. • To assess whether an information source is true and reliable. Key Vocabulary: Balanced View, Internet, Key words, Reliability, Results page, Search engine.	Computer Science Purple Mash Unit 4.5 Logo (Logo) National Curriculum Objectives 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 Pupils will know how: • To learn the structure of the coding language of Logo. • To input simple instructions in Logo.

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Purple Mash Unit 4.2 Online Safety (Various software)

National Curriculum Objectives Pupils should be taught to:

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

Pupils will know how:

- To understand how children can protect themselves from online identity theft.
- To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.
- To identify the risks and benefits of installing software including apps.
- To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.
- To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.
- To identify the positive and negative influences of technology on health and the environment.
- To understand the importance of balancing game and screen time with other parts of their lives

Key Vocabulary:

AdFly, Attachment, Citation, Collaborate, Cookies, Copyright, Digital footprint, Malware, Phishing, Plagiarism, Ransomware, SMART rules, Spam, Virus, Watermark.

Purple Mash Unit 4.8 Hardware Investigators

Pupils will know how:

- To understand the different parts that make up a computer.
- To recall the different parts that make up a computer.

Information Technology

National Curriculum Objectives Pupils should be taught to:

- 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

Purple Mash Unit 4.1 Coding (2Code)

Pupils will know how:

- To begin to understand selection in computer programming.
- To understand how an IF statement works.
- To understand how to use co-ordinates in computer programming.
- To understand the 'repeat until' command.
- To understand how an IF/ELSE statement works.
- To understand what a variable is in programming.
- To use a number variable.
- To create a playable game.

Key Vocabulary:

Code blocks, Command, Debug/Debugging, Design, Execute, Event, Flowchart, 'If' Statement, 'If/Else' Statement, Input, Nest, Object, Prompt, Implement, Repeat until, Predict, Repeat, Prompt, Run, Properties, Selection, Sequence, Timer, Variable.

Purple Mash Unit 4.6 Animation (2Animate)

Pupils will know how:

- To discuss what makes a good animated film or cartoon.
- To learn how animations are created by hand.
- To find out how animation can be created in a similar way using the computer.

- Using 2Logo to create letter shapes.
- To use the Repeat function in Logo to create shapes.
- To use and build procedures in Logo

Key Vocabulary:

Debugging, Grid, LOGO, LOGO Commands (e.g FD, BK, RT, LT), Multi Line, Mode, Pen Down, Prediction, Procedure, Pen Up, Repeat, Run, Speed, SETPC, SETPS.

Information Technology

National Curriculum Objectives Pupils should be taught to:

- 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

Purple Mash Unit 4.3 Spreadsheets (2Calculate)

Pupils will know how:

- To format cells as currency, percentage, decimal to different decimal places or fraction.
- To use the formula wizard to calculate averages.
- To combine tools to make spreadsheet activities such as timed times tables tests.
- To use a spreadsheet to model a real life situation.
- To add a formula to a cell to automatically make a calculation in that cell.

Key Vocabulary:

Row, Column, Spreadsheet, Formula, Average, Budget, Chart, Data, Decimal place, Equals tool, Format, Cell, Formula, Wizard, Line graph, Percentage, Place value, Random, Number, Too, Timer, Place value, Spin Tool.

	Key Vocabulary: Components, CPU, Graphics, Card ,Hard Drive, Input, Motherboard, Network, Card, Output, Peripherals, RAM Software. Digital Literacy (Including Internet Safety) Purple Mash Unit 4.4 Writing For Different Audiences (2Email, 2Connect & 2DIY) Pupils will know how: - To explore how font size and style can affect the impact of a text. - To use a simulated scenario to produce a news report. - To use a simulated scenario to write for a community campaign. Key Vocabulary: Campaign, Format, Font, Genre, Opinion, Reporter, Viewpoint. Digital Literacy (includes Internet Safety) National Safer Internet Day 'All Fun and Games? Exploring respect and relationships online' National Curriculum Objectives Pupils should be taught to: - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	- To learn about onion skinning in animation. - To add backgrounds and sounds to animations. - To be introduced to 'stop motion' animation. - To share animation on the class display board and by blogging. Key Vocabulary: Animation, FPS (Frames Per Second), Frame, Onion Skinning, Pause, Stop motion.	
Year 5	Information Technology National Curriculum Objectives Pupils should be taught to: 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,	Information Technology National Curriculum Objectives Pupils should be taught to: 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,	Computer Science National Curriculum Objectives 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

including collecting, analysing, evaluating and presenting data and information Purple Mash Unit 5.7 Concept Maps (2Connect) End of task - Mayan Concept Map Pupils will know how: - To understand the need for visual representation when generating and discussing complex ideas. - To understand the uses of a 'concept map'. - To understand and use the correct vocabulary when creating a concept map. To create a concept map. - To understand how a concept map can be used to retell stories and information. To create a collaborative concept map and present this to an audience. Key Vocabulary: Concept, Concept Map, Connection, Collaborate, Node, Presentation, Mode, Story Mode. Purple Mash Unit 5.4 Databases (2Investigate & 2Question) Maths link Pupils will know how: To learn how to search for information in a database. - To contribute to a class database. To create a database around a chosen topic Key Vocabulary: Arrange, Avatar, Char, Collaborative, Data, Database, Field, Group, Record, Database, Report, Sort, Statistics, Search. Digital Literacy (Including Internet Safety) Purple Mash Unit 5.2 Online Safety National Curriculum Objectives Pupils should be taught to:	including collecting, analysing, evaluating and presenting data and information Purple Mash Unit 5.3 Spreadsheets (2Calculate and Microsoft Excel) Maths link – perimeter / area Pupils will know how: - To use formulae within a spreadsheet to convert measurements of length and distance. - To use the count tool to answer hypotheses about common letters in use. To use a spreadsheet to model a real-life problem. To use formulae to calculate area and perimeter of shapes. - To create formulae that use text variables. - To use a spreadsheet to help plan a school bake sale. Key Vocabulary: Variable, Rows, Spreadsheet, Columns, Data, Format, Formula, Advance mode, Formula Bar, Formula Wizard, 'How Many?' Tool, Totalling tool. Purple Mash Unit 5.6 3D Modelling (2Design) Pupils will know how: - To be introduced to 2Design and Make and the skills of computer aided design. - To explore the effect of moving points when designing. To design a 3D Model to fit certain criteria. - To refine and print a model. Key Vocabulary: 2D, 3D, 3D Printing, CAD – Computer aided Design, Design Brief, Pattern, Fill, Points, Net, Template. Purple Mash Unit 5.8 Word Processing (Microsoft Word)	- 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 Purple Mash Unit 5.5 Game Creator (2DIY 3D) Pupils will know how: - To plan a game. - To design and create the game environment. To design and create the game quest. - To finish and share the game. - To self and peer evaluate. Key Vocabulary: Evaluation, Feedback, Image, Instructions, Promotion, Quest, Screenshot, Texture, Scene, Theme. Coding on Scratch or Purple Mash Unit 5.1 Coding (2Code) Pupils will know how: - To begin to simplify code. - To create a playable game. - To understand what a simulation is. To program a simulation using 2Code. - To know what decomposition and abstraction are in computer science. - To take a real-life situation, decompose it and think about the level of abstraction. - To understand how to use friction in code. To begin to understand what a function is and how functions work in code. - To understand what the different variables types are and how they are used differently. To understand how to create a string. - To understand what concatenation is and how it works. Key Vocabulary:
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	- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Pupils will know how: - To gain a greater understanding of the impact that sharing digital content can have. - To review sources of support when using technology and children's responsibility to one another in their online behaviour. To know how to maintain secure passwords. - To understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. - To learn about how to reference sources in their work. - To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. To ensure reliability through using different methods of communication. Key Vocabulary: Citation, Collaborate, Communication, Copyright, Creative Commons Licence, Encrypt, Identity theft, Ownership, PEGI ratings, Malware, Phishing, Password, Personal information, Reliable source, SMART rules, Spoof, Validity.	Pupils will know how: - To know what a word processing tool is for. To add and edit images to a word document. - To know how to use word wrap with images and text. To change the look of text within a document. - To add features to a document to enhance its look and usability. - To use the sharing capabilities in Google Docs. To use tables within text to present information. - To find and use to templates. Key Vocabulary: Bulleted lists, Caps Lock, Captions, Copy and Paste, Copyright, Creative Commons, Cursor, Document, Font, Hyperlink, Formatting, Merge cells, Page, Orientation, Word Processing tool, Text wrapping, Readability, Word Art. Digital Literacy (includes Internet Safety) National Safer Internet Day 'All Fun and Games? Exploring respect and relationships online' National Curriculum Objectives Pupils should be taught to: - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	Abstraction, Action, Algorithm, Concatenation, Debug\ Debugging, Decomposition, Efficient, Flowchart, Event, Function, Input, Object, Nesting, Output, Repeat, Properties, Physical System, Selection Sequence, Simplify, Timer, Variable.
Year 6	Computer Science Purple Mash Unit 6.6 Networks National Curriculum Objectives Pupils should be taught to: understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the	Computer Science Coding on Scratch or Purple Mash Unit 6.1 Coding (2Code) National Curriculum Objectives Pupils should be taught to: design, write and debug programs that accomplish specific goals, including controlling	Computer Science Purple Mash Unit 6.8 Understanding Binary (2Code) National Curriculum Objectives Pupils should be taught to: design, write and debug programs that accomplish specific goals, including controlling

opportunities they offer for communication and collaboration Pupils will know how: • To learn about what the Internet consists of. • To find out what a LAN and a WAN are. • To find out how the Internet is accessed in school. • To research and find out about the age of the Internet. • To think about what the future might hold. Key Vocabulary: Hub\Switch, Internet, Local area network (LAN), Network, World Wide Web, Router, Wi-Fi, Wide area network (WAN). Information Technology National Curriculum Objectives Pupils should be taught to: • 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 Using Search Engines (Google) Pupils will know how: • to use search engines safely • to choice vocabulary carefully when searching • to surf and sift results • choose to search images, maps, etc • copy and paste information and images safely and correctly.	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 Pupils will know how: • To design a playable game with a timer and a score. • To plan and use selection and variables. • To understand how the launch command works. • To use functions and understand why they are useful. • To understand how functions are created and called. • To use flowcharts to create and debug code. • To create a simulation of a room in which devices can be controlled. • To understand how user input can be used in a program. • To understand how 2Code can be used to make a text-adventure game. Key Vocabulary: Command, Decomposition, Event, Co-ordinates, Execute\Run, Decomposition, Debug/Debugging, Flowchart, Function, Input, Launch, Command, Output Predict, Properties, Object, Procedure, Sequence, Repeat, Repeat Until, Simulation, Selection, Tab, Timer Variable. Digital Literacy (Including Internet Safety) Purple Mash Unit 6.2 Online Safety	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 Pupils will know how: • To examine how whole numbers are used as the basis for representing all types of data in digital systems. • To recognise that digital systems represent all types of data using number codes that ultimately are patterns of 1s and 0s (called binary digits, which is why they are called digital systems). • To understand that binary represents numbers using 1s and 0s and these represent the on and off electrical states respectively in hardware and robotics. Key Vocabulary: Base 2 Bit Base, 10 Digit Integer, Transistor Switch, Words used to describe numbers of bits and the computer memory space used: Nibble - 4 bits Byte - 8 bits. Kilobyte (KB) - 1024 bytes Megabyte (MB) - 1024 KB Gigabyte (GB) - 1024 MB Tetrabyte (TB) - 1024 GB, Machine code, Switch, Variable, Terabyte (TB) Megabyte (MB) Transistor. Information Technology National Curriculum Objectives Pupils should be taught to: • 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,
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Key Vocabulary: Search engine, safe, sift, images, copy, paste Digital Literacy (Including Internet Safety) Purple Mash Unit 6.4 Blogging (2Blog) National Curriculum Objectives Pupils should be taught to: - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Pupils will know how: - To identify the purpose of writing a blog. - To identify the features of a successful blog. - To plan the theme and content for a blog. To understand how to write a blog and a blog post. - To consider the effect upon the audience of changing the visual properties of the blog. - To understand how to contribute to an existing blog. - To understand how and why blog posts are approved by the teacher. - To understand the importance of commenting on blogs. Key Vocabulary: Approval, Archive, Blog, Blog post, Collaborate, Commenting, Vlog. Cross Curricular Links/outcomes: - Christmas Card Competition (2PaintAPicture)	National Safer Internet Day 'All Fun and Games? Exploring respect and relationships online' National Curriculum Objectives Pupils should be taught to: - use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact Pupils will know how: To identify benefits and risks of mobile devices broadcasting the location of the user/device. - To identify secure sites by looking for privacy seals of approval. To identify the benefits and risks of giving personal information. - To review the meaning of a digital footprint. To have a clear idea of appropriate online behaviour. - To begin to understand how information online can persist. To understand the importance of balancing game and screen time with other parts of their lives. - To identify the positive and negative influences of technology on health and the environment Key Vocabulary: Data analysis, Digital footprint, Inappropriate, Location sharing, Password, PEGI rating, Phishing, Print Screen, Screen time, Spoof, Secure websites. Cross Curricular Links/outcomes: - Link to RHSE with safer internet use including use of images	including collecting, analysing, evaluating and presenting data and information Purple Mash Unit 6.7 Quizzing (2Quiz, 2DIY, Text Toolkit, 2Investigate) Pupils will know how: - To create a picture-based quiz for young children. - To learn how to use the question types within 2Quiz. - To explore the grammar quizzes. - To make a quiz that requires the player to search a database. - To make a quiz to test your teachers or parents. Key Vocabulary: Audience, Audio, Case-Sensitive, Clone, Cloze, Preview, Qui.z Purple Mash Unit 6.9 Spreadsheets (Microsoft Excel) Pupils will know how: - To know what a spreadsheet looks like. To navigate and enter data into cells. To introduce some basic data formulae in Excel for percentages, averages and max and min numbers. - To demonstrate how the use of Excel can save time and effort when performing calculations. - To use a spreadsheet to model a reallife situation. - To demonstrate how Excel can make complex data clear by manipulating the way it is presented. To create a variety of graphs in Excel. To apply spreadsheet skills to solving problems Key Vocabulary: Auto fit, Chart, Cell, Column, Cell Reference, Computational, Model, Conditional formatting, Data Delimiter Formula(e), Formula, Bar, Graph, Horizontal axis, Range, Row, Text Wrapping, Vertical axis, Spreadsheet.
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Cross Curricular Links/outcomes:

- Y6 Fundraiser/summer fair stalls using Excel

National Curriculum: Computing

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

Subject Content

Key Stage 1

Pupils should be taught to:

(Computer Science)

'I know that there is nothing better for people than to be happy and to do good while they live.' Ecclesiastes 3:12

Computing at Holy Trinity CE Primary School

- 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

(Information Technology)

- use technology purposefully to create, organise, store, manipulate and retrieve digital content

(Digital Literacy)

- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Key Stage 2

Pupils should be taught to:

(Computer Science)

- 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

(Information Technology)

- 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

(Digital Literacy)

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