



**Computing at
St Andrew's CE (VA)
Infant School**

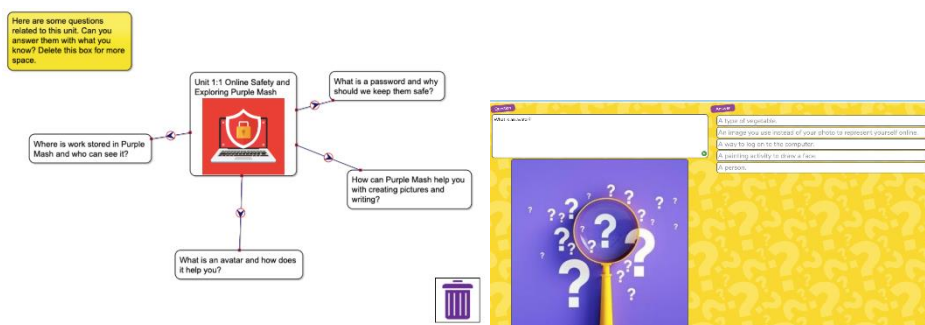
Purple Mash

Planning

The Purple Mash schemes of work is used to support the planning of computing within KS1 which is based on the **National Curriculum**. Pupils are taught to master key skills over the year to help them achieve skills in **computer science, information technology and digital literacy** which pupils complete primarily on computers. Pupils have access to their own log in details and have access to this information within school and in pupils home-school record. Throughout the year pupils are taught about online safety and learn about key influences in Computing. Discrete lessons are taught in the computing suite which has computer/internet access and pupils are given allotted time to be able to complete their lessons with Charlene Kerry (HLTA). We are determined to provide the children with opportunities to develop their computing skills when working in other areas of the curriculum.

- Knowledge organisers added to the blog

- Keywords and key questions key images key vocabulary- added to the blog (pre-learning)



Mind maps are used at the beginning of the topic to understand pupils' previous knowledge. Quizzes can be used throughout the topic to check pupils understanding. Pupils work is saved on the Purple Mash system and is being displayed within the topic big book.

The children use a wide range of computing skills including:

- Word processing to write stories, poems or letters
- Databases to record information, e.g., minibeasts databases
- IWB screens to pose mathematical problems and to model work
- Desktop publishing to design posters, leaflets or cards
- Multimedia presentations to present text, pictures and sound
- Drawing programs to create pictures and designs
- Using search engines to find information
- Cameras/ iPads to record what they have done in class or on a visit
- Using Purple Mash to produce a range of work showcasing their understanding in different subjects including- newspaper reports, animations and whole class mind maps.
- Playing educational games online to support learning
- Videos to enhance learning experiences
- Simulations to explore real and imaginary situations

Teachers have a clear success criterion, and this enables any pre-teaching of specific vocabulary or any misconceptions to be addressed before/during/after the lesson. The lesson plan gives details on the types of activities that will happen during the lesson and any resources that will be required (usually the

resources/pictures will be linked in). The Purple Mash PowerPoints show the lesson objective and instructions on how to gain the skills and knowledge needed to complete the activity. Purple Mash knowledge organisers that are shared with the pupils and displayed throughout the lesson. The lesson plans set out a clear sequence to the lesson to show what a “typical” lesson should look like and shows follow up challenges.

The image displays three Purple Mash resources. On the left is a lesson plan for 'Unit 1.1 - Online Safety - Lesson 1', which includes steps for children to create an avatar, log in, and create a password. In the center is a 'Purple Mash Computing Scheme of Work - Knowledge Organiser' for 'Unit 1.2 - Technology Outside School', featuring sections for Key Learning, Key Vocabulary, Key Resources, and Key Questions. On the right is a PowerPoint for 'Lesson 1 - Safe Logins', detailing objectives, success criteria, resources, and activities for safe login practices.

SEND & Pupil premium

Pupils all learn at different rates and with have a range of learning styles, lessons are adapted to reflect the needs of the class and individuals in class so that everyone can succeed. The computing class teacher will adapt resources as needed. Pupils who are working towards the expected level may be provided with extra computing sessions and after school clubs to support them within their progression.

EYFS

Despite computing not being explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework, which focuses on the learning and development of children from birth to age five, there are many opportunities for young children to use technology to solve problems and produce creative outcomes. Many areas of the framework provide opportunities for pupils to develop their ability to use computational thinking effectively, such as through undertaking projects involving the concepts and approaches suggested by Computing at School's (CAS) Barefoot Computing resources and within the Purple Mash schemes of work (this will be evidenced in the big book and Seesaw. Pupils will then have basic information technology, digital literacy and computer science skills which can be built on when progressing to KS1.

The image is a composite of three educational resources for EYFS. On the left is a poster titled 'AWESOME AUTUMN' for ages 4-6 years, listing curriculum links (Early Years) and concepts & approaches (Creating, Pattern, Logic, Algorithms, Decomposition, Collaborating). In the center is an illustration of a classroom where children are engaged in various activities like reading, playing with blocks, and using a computer. On the right is a 'Communication and Language' activity box with an 'Early Learning' goal for 'Speaking', which includes instructions for children to participate in small group discussions, offer explanations for why things happen, and express their ideas using full sentences.

Teachers show children how to access age-appropriate games/apps and use it for a purpose on computers, laptops, IWB and tablets etc. Children are shown how to use a mouse and keyboard to access age-appropriate activities during continuous provision during Autumn and Spring term. Purple Mash has age-appropriate games for EYFS children to access “Mini Mash”. This section of the program looks like a classroom, and it gives younger pupils an opportunity to access simple games and activities. In the Summer term, children are taught to log on and access other features of Purple Mash in order to prepare them for KS1. Staff use the Barefoot computing resources to develop pupil's computer science thinking and develop problem solving skills this is done in the classroom and outdoor area.

Understanding the world

Classrooms could contain a role play area with a range of technology, both functioning and model / broken devices, or a variety of electronic toys, such as remote-controlled cars, walkie-talkies and interactive pets, as part of continuous provision. Further technology could be included in conjunction with other activities, such as digital cameras for pupils to photograph their own learning, although children should ideally be given the opportunity to select and use technology for a certain purpose, rather than simply being given a device. The pedagogical approaches used in this age group should also be carefully considered, which includes the need to tinker, or play, with a device, in order to discover how it functions.

Literacy

Bee Bots continue to be extremely popular in both EYFS and Key Stage 1 and provide several opportunities to develop pupils’ computing knowledge within literacy sessions. Children could create a story about the Bee Bot’s journey, such as around a local area or a country being studied, or they could sequence events within a story being studied. For example, children could guide the Bee Bot between different locations, characters and locations within Little Red Riding Hood. Should devices not be available, the Barefoot website has Fake Bots available, which children can use instead of a digital device. I

Physical development

Many children entering Early Years settings are already familiar with tablet devices, although their ability to use a keyboard and mouse is often limited. This has recently become a more significant issue, due to the prevalence of tablet devices in the home. It is therefore important that children are given opportunities to become familiar with a range of input devices, including the keyboard and mouse, in order to develop the required fine motor skills. Usage could be linked to phonics sessions, such as using drill and practice games, including Dance Mat Typing or the Animal Typing app, or more creative outcomes, as described when examining the areas below.

Communication and language

Unplugged activities, or those away from the machine, give children an opportunity to develop their understanding of technology without the need for expensive devices. Children could be asked to give precise instructions verbally, such as through giving instructions to a sandwich making robot, with links made to the importance of using the correct vocabulary, along with speaking clearly and precisely. Giving instructions could also form part of sessions linked to physical development activities, such as determining rules for certain playground games.

Personal, social and emotional development

Voice recorders, or the microphone built into a tablet device, could be used to record how pupils are feeling, or to discuss their relationships with others. This could be extended through pupils creating their own videos, which could also link to children giving online safety guidance to their peers on appropriate

use of technology and what to do if they feel worried or concerned when using a device. A range of age-appropriate books are now available for young children to examine online safety, such as [Chicken Clicking](#), [Goldilocks \(A hashtag cautionary tale\)](#) and the free [Smartie the Penguin](#). Using voice and video recorders also allows children to self evaluate their own speaking.

Expressive arts and design

The use of painting and graphics applications can further develop pupils' keyboard and mouse skills, whilst a range of tablet based apps are also available, such as the free [Doodle Buddy](#). Creative outcomes can be produced, which allows pupils to take ownership of their work and could even be part of an extended project. Outputs produced could be linked to other uses of technology, such as producing mats for Bee Beets to travel around, whilst other physical computing devices, such as [Spheros](#), can even be put into paint and controlled using a tablet device to produce images. Outfits for a device to wear, such as Bee Bot head dresses or Sphero paper cup people, could also be developed.

Mathematics

Controlling devices provides an excellent opportunity to develop pupils' understanding of left and right, along with directional language. Pupils could be asked to guide a device around a shape, or even use activities from computing related websites, such as [code.org](#), to develop their understanding further. However, whilst such activities can effectively engage pupils in programming tasks, their usage should be carefully considered to ensure they have a purpose.

KS1

In Key Stage 1, pupils are primarily taught through the Purple Mash units, which links directly to National Curriculum statements. Each of the lessons are designed to be interactive; each 'aim' per lesson is linked to key objectives and the resources are attached within the Purple Mash program. The subject leader and computing teacher will discuss the long-term plan at the start of the academic year to discuss any edits to the units.

Source: [www.computing-lessons.co.uk/primary/level-1/level-1.html](#)

Year 1 Whole Year Overview

Week	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	Unit 1.1 Online Safety & Exploring Purple Mash				Unit 1.2 Grouping & Sorting			Unit 1.3 Pictograms			Unit 1.4 Lego Builders			Unit 1.5 Maze Explorers			Unit 1.6 Animated Story Books			Unit 1.7 Coding			Unit 1.8 Spreadsheets			Unit 1.9 Technology outside school					
YEAR 1	Number of Weeks - 4				Weeks - 2			Weeks - 3			Weeks - 3			Weeks - 3			Weeks - 5			Weeks - 6			Weeks - 3			Weeks - 2			Weeks - 2		
	Tools Used -				2Quiz			Programs - 2Count			Programs - 2Connect			Programs - 2Go			Programs - 2Create A Story			Programs - 2Code			Programs - 2Calculate			Programs - Writing Templates					
	Paint Projects										Paint Projects																				
	Writing Templates																														
	2Count (Photograms)																														
2Explore (Music)																															

Computing Progression N.C. Statements KS1 Year 1



	Computer Science			Information Technology	Digital Literacy	
Statement	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Create and debug simple programs.	Use logical reasoning to predict the behaviour of simple programs.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Recognise common uses of information technology beyond school.	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
Outcome	Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand	Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. Bubbles activity in 2Code.	When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program.	Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash <u>2Quiz</u> example (sorting shapes), <u>2Code</u> design mode (manipulating backgrounds) or using pictogram software such as <u>2Count</u> .	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.

Computing Progression N.C. Statements KS1 Year 2



	Computer Science			Information Technology	Digital Literacy	
Statement	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Create and debug simple programs.	Use logical reasoning to predict the behaviour of simple programs.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	Recognise common uses of information technology beyond school.	Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
Outcome	Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code.	Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps.	Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	Children demonstrate an ability to organise data using, for example, a database such as <u>2Investigate</u> and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within <u>2Sequence</u> . Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.	Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. <u>2Publish example template</u> . Children make links between technology they see around them, coding and multimedia work they do in school e.g. <u>animations</u> , <u>interactive code</u> and <u>programs</u> .	Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using <u>2Respond</u> activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.

Staff are offered technical support during 'webinar' training as well as contacting the Computing Co-ordinator and other teachers. Any technology issues that cannot be resolved within school should be reported to Sophie Clayton (office) to be transferred to Calderdale ICT support

All classrooms have a minimum of two computers so that technology can be seen as an important part of our daily lives. All teachers have access to Purple Mash and can set up '2dos' for pupils in their class this might be as a lesson starter, catch up or to embed knowledge or skills further.

Assessment

Pupils receive feedback at different points within the lesson, two pupils will be chosen as the weekly 'Computing Star Workers.' They will receive a star displaying their achievements, which is added to the computing blog and is shared with parents.



The computing teacher (Charlene Kerry) will complete the assessment document which is designed to be filled in at the end of each unit and then the end of the academic year. Unless stated it is assumed that the children are working at the expected outcomes for each unit. Only children not achieving the expected outcomes or those digging deeper need to be listed. This information is then added to Target Tracker. This assessment information highlights any missing skills which is used to provide pupils with opportunities to practice skills, within the classroom, integrated within future lessons or at an additional club. The computing teacher will set end of unit quizzes that test pupils skills and knowledge on what they have learnt. The teacher will set previous unit quizzes or extra "to dos" at different points within the year to ensure that pupils are retaining knowledge and skills within their long term memory.

The unit overview for Year 1 contains details of national curricula mapped to the Purple Mash Units. The following information is an exemplar of what a child at an expected level would be able to demonstrate when completing this unit with additional exemplars to demonstrate how this would vary for a child with emerging or exceeding achievements.

Assessment Guidance	
Emerging	With support, children can save and open sheets (Unit 1.8 Lesson 1), enter a limited quantity of data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2).
Expected	Using the 2Calculate spreadsheet, children can save and open sheets (Unit 1.8 Lesson 1). Most Children will be able to save their 2Calculate files, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later. They can enter data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2).
Exceeding	Using the 2Calculate spreadsheet, children can save and open sheets (Unit 1.8 Lesson 1), enter data into cells (Unit 1.8 Lesson 1), manipulate data using the 'move cell' tool (Unit 1.8 Lesson 2) and use the image toolbox to add clipart (Unit 1.8 Lesson 2).

Teachers can set tasks for pupils to complete based on topics throughout the year which is set as an alert called a '2 dos' on Purple Mash. Teachers and support staff can comment on how well the task has been completed and offer suggestions to improve their work.

Resources & safety

ICT equipment is mainly found within the ICT suite which consists of desktop computers, IWB, cameras and Beebots. The equipment is kept in well ventilated areas, away from any liquids and is kept in either locked cupboards or rooms to ensure security. Classroom ICT equipment is kept locked to comply with GDPR regulations if not in use. Any issues with equipment should be shared with the office staff so that Calderdale ICT can be notified.

Pupils are educated on the importance of Online Safety in all computing lessons. In KS1 there are computing displays that support children in practicing computer skills safely. There are displays around school explaining to pupils what they should do if they see something they do not like. We celebrate Safer Internet Day, in which pupils are educated on keeping safe online.

Parents and carers have an opportunity to access a computing session with the computing teacher which discuss the main components of the computing lessons, Purple Mash and how they can support pupils at home.

IPADS

St Andrew's Infant School is committed to using educational technology to improve further the learning experiences and achievements of all our pupils. iPad technology provides us with opportunities to inspire and motivate our young people to achieve their full potential and engage them fully in their learning.

We believe that the use of an iPad will enhance everyday learning and teaching and in particular will:

- Raise educational attainment

- Create a pupil centred curriculum which will provide engaging pupil centred lessons
- Enable pupils access to the most up to date educational resources
- Raise levels of engagement, motivation and interaction
- Improve facilitation of different learning styles

This policy applies to all pupil users of iPad hardware and software technology in St Andrew's. It applies to all iPads used by our pupils, wherever they are physically located. It is intended to compliment the school's wider E Safety policy and Behaviour and Sanctions Framework. Due to the changeable nature of information and communications technology this policy will undergo periodic review and as such the school reserves the right to amend any sections or wording at any time. The following details define the proper use of the device in school and out of school hours.

- iPads must never be left unattended or in any unsupervised area.
- A protective case must be used with the iPad and have sufficient padding to protect the iPad from normal treatment and provide a suitable means for carrying the device within the school. iPads should always be within the protective iPad case when carried.
- The screens are particularly sensitive to damage from excessive pressure on the screen. Avoid placing too much pressure and/or weight (such as folders and workbooks) on the iPad screen. The iPad screens can be damaged if subjected to rough treatment.

Computing legends

We aim to equip pupils with the knowledge and cultural capital they need to succeed in life. We introduce the children to 'Computing Legends' which are people who have made a significant difference within technology.

EYFS- Walt Disney

Year 1- Elon Musk

Year 2- Ada Lovelace

Useful websites

Parents receive notifications through homework, newsletters and in-house workshops on useful and educational websites that pupils can access at home.

Phonics

Oxford Owl- <https://home.oxfordowl.co.uk/>

in Phase 2 and 3. Watch on You Tube- https://www.youtube.com/results?search_query=geraldine+the+giraffe

Alphablocks (a BBC children's show aimed at developing phonics)-

<http://www.bbc.co.uk/cbeebies/shows/alphablocks>

Maths

Maths games- <https://www.topmarks.co.uk/maths-games/3-5-years/counting>

Ten ways to help your child with maths- <http://www.bbc.co.uk/cbeebies/joinin/numberblocks-help-your-child-with-maths>

Numberblocks (a BBC children's show designed to help development of number)- <http://www.bbc.co.uk/iplayer/cbeebies/episode/b08r41qb/numberblocks>

The Big Number Song (Helps children count to 100 in

1s) https://www.google.co.uk/search?q=the+big+number+song&rlz=1C1VFKB_enGB709GB709&oq=the+big+number+song&aqs=chrome..69i57.4440j0j4&sourceid=chrome&ie=UTF-8

Count by 2s- <https://www.youtube.com/watch?v=GvTcpfSnOMQ>

Count by 5s- <https://www.youtube.com/watch?v=EemjeA2Djjw>

Count by 10s- <https://www.youtube.com/watch?v=Ftati8iGQcs>

General

Topmarks <https://www.topmarks.co.uk/>

Education City www.educationcity.co.uk

Cbeebies <https://www.bbc.co.uk/cbeebies>

Cbbc <https://www.bbc.co.uk/cbbc>

ICT Games <http://www.ictgames.com/>

Twinkl www.twinkl.co.uk

Useful Apps

BBC Bitesize



		REC	Year 1	Year 2
Computer science		Beebot buttons instructions forwards backwards direction move go	Sorting Criteria Instruction Algorithm Computer Program Direction Challenge Arrow Undo Rewind Forward Backwards Left turn Debug	Action Algorithm Button Debug/debugging Event Nesting
Digital Literacy		Website Safe Password Tools Trays Share Print Create Alert	Unit 1.1 online safety and exploring Purple log in Username Log out Save Password	Unit 2.2 online safety Unit 2.5 effective searching Search Internet Sharing Email Attachment Digital footprint Search engine
Information Technology		Technology Internet Mini mash Games	Unit 1:3 pictograms Unit 1.6 animated story books Unit 1.8 Spreadsheets Pictogram Data Collate Animation E-book Font File Sound effect Display board Arrow keys Backspace key Cursor Columns Cells Clipart Count Delete key Image toolbox Row Spreadsheet	Unit 2:3 pictograms Unit 2.4 questioning Unit 2.6 creating pictures Unit 2.7 making music Unit 2.8 presenting ideas Backspace key Copy and paste Columns Cells Count tool Delete key Equals tool Lock tool Rows Spreadsheets Pictogram Question Data Collate Binary tree Avatar Database Impressionism Palette Pointillism Share Surrealism Template Bmp Composition Digitally Tempo Volume Concept Node Animated Quiz Non-fiction Presentation Narrative Audience