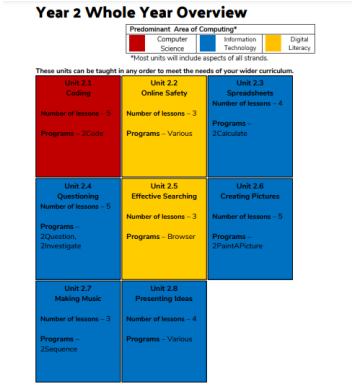
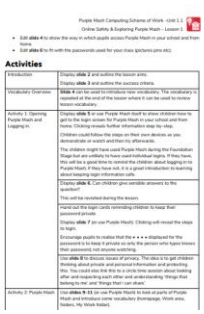
Computing at

St Andrew's CE (VA)

Infant School

Purple Mash is the selected scheme used to teach computing at St Andrews Infant CE (VA) School. In Key Stage one Purple Mash have produced schemes of work based on the **National Curriculum 2014**. The subject lead and computing teacher have carefully selected the units that will be taught to enable pupils to gain skills and knowledge in digital literacy, computer science and information technology. The scheme allows flexibility to change the sequence and content and this is determined by the class needs/topics that pupils will cover at different points in the academic year.





A range of adaptive teaching strategies are utilised within lessons to support all learners in being successful in meeting the lesson objectives. Each lesson plan has clear instructions on the aims of the lesson, success criteria and resources needed. Lessons are ordinarily taught in the ICT suite which has computer/internet access and pupils are given allotted time to be able to complete their lessons with Charlene Kerry (HLTA). The computing HLTA will use the accompanying Purple Mash slideshows within most lessons. All of the slides have the links and resources within them this enables the HLTA to utilise lesson time and focus on what pupils are doing and how they are learning. The computing HLTA aims to understand and recognise misconceptions this may be on an individual basis, group or class basis. Misconceptions are reviewed by the computing lead and computing HLTA we then reflect on how these misconceptions can be avoided and or diminished. Each classroom has a minimum of two computers that pupils have access to, it is intended demonstrate that computing is 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.

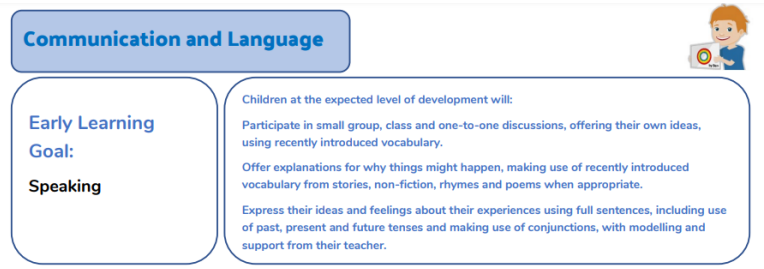
Staff are offered technical support during 'webinar' training as well as contacting the Computing Co-ordinator and other teachers. Any technology issues that cannot be resolved within school should be reported to Calderdale ICT support.

Children all receive personal Purple Mash logins in their home/school reading record. The benefit of children having their own login is that they can access '2dos', save their work and access activities at school and home. We teach children about online safety by keeping their username and passwords private. We are determined to provide the children with opportunities to develop their computing skills when working in other areas of the curriculum. 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

In Reception, children use technology in their everyday lives, pupils starting school ordinarily have some understanding of technology and how it works. Computing is not included within the EYFS Statutory Framework 2021. Computing is not taught a discrete set of lessons but it interwoven within the other areas of learning to enable pupils to gain the necessary skills to progress within Key Stage 1.



Teachers show children how to access age-appropriate games/apps and use it for a purpose on computers, laptops, interactive whiteboard and other technology-based devices. 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.

The computing HLTA will assess the pupils on their skills and knowledge on a termly basis looking at computer science, digital literacy and information technology using 'I can statements'. Assessment of pupil's skills is completed in a range of ways including; live observations, marking of completed tasks, quizzes, retrieval of essential knowledge and demonstration of computing skills. All pupils' assessment will be recorded termly onto Sonar and the computing teacher will reflect on how pupils are grasping the knowledge and skills set out on **National Curriculum**. The information recorded will be shared with the current and future class teacher during transition events to determine what pupils need recapping or to be integrated within future lessons.

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 ICT lessons. There are displays around school explaining to pupils what they should do if they see something they do not like. As a school we have a Safer Internet day. On that day children have an assembly recapping internet rules and also how to keep themselves safe online in school and at home.

Parents receive notifications through homework ,QR codes, newsletters and in-house workshops on useful and educational websites that pupils can access at home. Additionally the program Seesaw is used in Reception to share learning with parents.

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

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

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

Essential knowledge

Year 1

Unit 1.1 – Online Safety
- Knows how to log in safely.
- Knows how to navigate to a document area where saved work by child can be found.
- Knows how to use search to locate applications or resources on a platform such as Purple Mash.
- Knows how to enhance work by adding multimodal items such as text and images.
- Knows how to open, save and print work.
- Knows the importance of logging out of an account.

Unit 1.5 – Maze Explorers
- Knows the functionality of the direction keys in 2GO.
- Knows how to create and debug a set of simple instructions (algorithm).
- Knows how to use the additional direction keys within 2Go as part of an algorithm.
- Knows how to change and extend the algorithm list in 2Go.

Unit 1.2 – Grouping & Sorting
- Knows how to sort items using a range of criteria.
- Knows how to use software for grouping items such as tools within Purple Mash.
- Knows that computers need steps of instructions in order in their programs.

Unit 1.3 - Pictograms
- Knows that data can be represented in a picture format e.g. pictogram.
- Knows how to contribute to a class pictogram.
- Knows how to use a software such as 2Count to record results of an experiment into a pictogram format.

Essential Knowledge - Year 1

Unit 1.6 – Animated Story Books
- Knows what e-books are.
- Knows of software such as 2Create a Story that allows users to create interactive stories.
- Knows how to add animation to an interactive story.
- Knows how to add sound, including voice recordings and music to a story they have created using software.
- Beginning to know how to work on more complex digital stories, including adding backgrounds, copying and pasted pages.
- Knows how to share digital stories with others such as using Digital Display Boards.

Unit 1.7 – Coding
- Knows what instructions are and can predict what might happen when they are followed.
- Knows how to plan and make a simple computer program e.g. fish moves right, crab moves up.
- Knows what objects, actions and backgrounds are within a coding environment.
- Knows what an event is and knows how to use an event to control an object.
- Beginning to know how code executes when a program is run.

Unit 1.4 – Lego Builders
- Knows how to compare the effects of adhering strictly to instructions when completing tasks without complete instructions.
- Knows how to follow and create simple instructions on the computer.
- Knows that the order of instructions affects the end result for a given instructional task.

Unit 1.9 – Tech Outside School
- Knows that technology is a use of knowledge to invent new devices or tools.
- Knows that throughout history, technology has made people's lives easier.
- Knows that technology is used within school and outside of school.
- Knows where examples of technology can be found both in and out of school.

Year 2

Unit 2.1 – Coding

- Knows what an algorithm is and can explain that it is a set of instructions and that algorithms follow a sequence.
- Knows how to create a computer program using an algorithm.
- Knows how to create a computer program from a given design.
- Knows that collision detection is an event type in coding.
- Knows how to design an algorithm that follows a timed sequence.
- Knows that different objects within the coding environment have different properties.
- Knows that there are different events in coding and knows what some of these events are.
- Knows the function of buttons in the coding environment.
- Knows how to interpret and debug simple programs.

Unit 2.2 – Online Safety

- Knows how searches can be refined when searching digitally and therefore attempts refining when searching.
- Knows that digitally created work can be shared with others e.g. Purple Mash Display Boards.
- Has knowledge and understanding about sharing more globally on the Internet.
- Knows that email is a type of communication tool.
- Knows how to open and send simple online communications in the form of email e.g. 2Email (virtual email client).
- Knows that there is an appropriate way to communicate with others in an online situation.
- Knows that information put online leaves a digital footprint.
- Knows some steps that can be taken to keep personal data and hardware secure.

Essential Knowledge - Year 2

Unit 2.3 – Spreadsheets

- Knows what a spreadsheet looks like and how to describe rows and columns.
- Can add images to a spreadsheet and assign them values.
- Knows what totalling tools are and how to use them.
- Knows how to use a spreadsheet to perform calculations for purpose. For example, adding and totalling money.
- Knows how to use some tools within a spreadsheet to support calculations. For example, using the equals tool in 2Calculate to check calculations.
- Knows how to create a simple graph within a spreadsheet from data.

Unit 2.4 – Questioning

- Knows that pictograms provide limited information.
- Knows that there are other data handling tools that can give more information than pictograms.
- Knows how to use yes/no questions to separate information.
- Knows how to construct a binary tree to identify items.
- Knows how to use a binary tree database (such as 2Question), to answer questions.
- Knows how to use a database to answer more complex search questions.
- Knows how to use a search feature at a basic level when trying to locate data within a database such as 2Investigate.

Unit 2.5 – Effective Searching

- Knows the meaning of key Internet and searching terms.
- Knows the basic parts of a web search engine page.
- Knows how to navigate a web search results page.
- Knows how to search the Internet to some degree for answers to a quiz.
- Knows the premise of what effective Internet searching is.

Unit 2.6 – Creating Pictures

- Knows the purpose and benefits of painting software tools such as 2Paint a Picture.
- Knows how to recreate Impressionism, surrealism and Pointillism using features within 2Paint a Picture.
- Knows how to reproduce the style of William Morris by using repeating patterns, manipulating patterns and adding multiple effects in painting software such as 2Paint a picture.

Unit 2.7 – Making Music

- Knows how to make forms of music (digitally) using age-appropriate software such as 2Sequence.
- Knows how to edit and combine sounds using 2Sequence.
- Knows how to refine composed music.
- Knows how to upload/import and record sounds beyond the software environment.

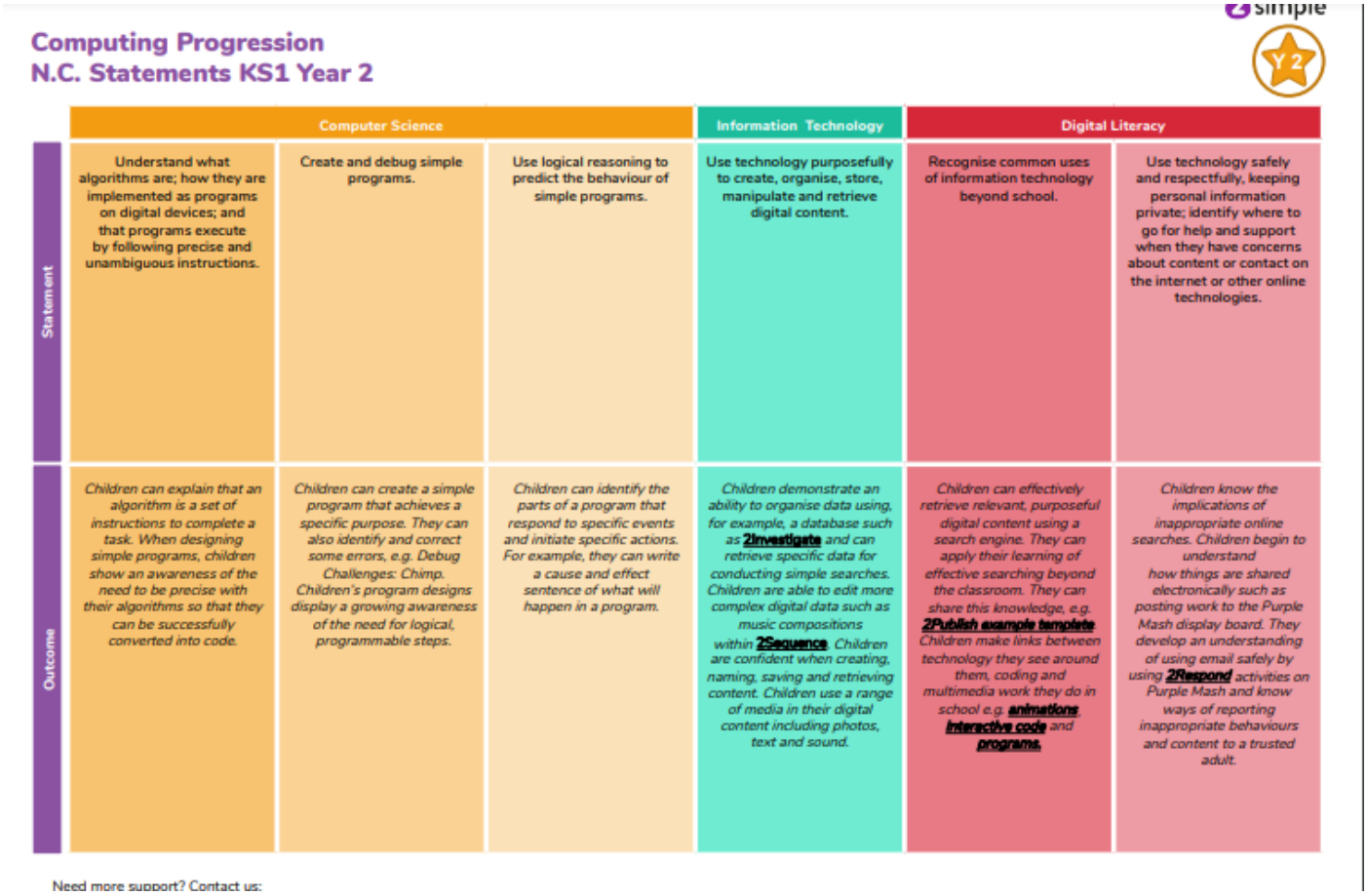
Unit 2.8 – Presenting Ideas

- Know that digital content can be presented in many different forms e.g. stories.
- Know how to use presentational or interactive software such as a quiz, making improvements to it based on people feedback.
- Know that data can be structured in tables to make it useful for an audience.
- Know how to add images such as clipart and photos to presentational software.
- Know how to collect, organise and present data and information in digital format.

Skill and knowledge progression

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 **2Quiz** example (sorting shapes), **2Code** design mode (manipulating backgrounds) or using pictogram software such as **2Count**.*	*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 **2Investigate** and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within **2Sequence**. 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. **2Publish example template**. Children make links between technology they see around them, coding and multimedia work they do in school e.g. **animations**, **interactive code** and **programs.***	*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 **2Respond** activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.*

Need more support? Contact us:

Online safety progression

Year 1

Unit	Aims	Success criteria	Unit End Outcomes
1.1 – Online Safety and Exploring Purple Mash	• To log in safely. • To start to understand the idea of 'ownership' of their creative work.	• Pupils can log in to Purple Mash using their own login. • Pupils have created their own avatar and understand why they are used. • Pupils can add their name to a picture they created on the computer. • Pupils are beginning to develop an understanding of ownership of work online. • Pupils can save work into the My Work folder in Purple Mash and understand that this is a private saving space just for their work.	**Emerging**: With support, pupils demonstrate an awareness of online safety using their own private usernames and passwords for Purple Mash (Unit 1.1 Lesson 1. Point 6). This can be assisted by using printed login cards. Pupils take ownership of their work and save this in their own private space (Unit 1.1 Lesson 1. Point 16). **Expected**: Pupils demonstrate an understanding of the importance of online safety, using their own private usernames and passwords for Purple Mash (Unit 1.1 Lesson 1. Point 6). Most pupils will be able to demonstrate an understanding of the reasons for keeping their password private including talking about the meaning of 'private information' (Lesson 1) and actively demonstrate this in lessons (Throughout all lessons in Unit 1.1). Pupils take ownership of their work and will be able to save their work, using a memorable file name, to their own personal space on Purple Mash and understand that this can be retrieved later Unit 1.1 Lesson 1 Point 18.

Unit	Aims	Success criteria	Unit End Outcomes
	• 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.	• Pupils can find their saved work in the Online Work area of Purple Mash. • Pupils can find messages that their teacher has left for them on Purple Mash. • Pupils can search Purple Mash to find resources.	Most pupils will be able to add their name to their picture in lesson 1. In lesson 2, most pupils will be able to explain that their teacher was able to connect with them online to leave a message in Purple Mash. They could contribute to the class discussion relating this to other forms of digital communication. Most pupils will be able to give a simple explanation of the way to word comments online when given the example of their teacher commenting upon their work.
	• To become familiar with the types of resources available in the Topics section. • To become more familiar with the icons used in the resources in the Topics section. • To start to add pictures and text to work.	• Pupils will be able to use the different types of topic templates in the Topics section confidently. • Pupils will be confident with the functionality of the icons in the topic templates. • Pupils will know how to use the different icons and writing cues to add pictures and text to their work.	Throughout this unit most pupils will be able to contribute their ideas about communicating appropriately and relate online and off-line appropriate behaviour. Most pupils will be able to open Purple Mash and use the search bar within Purple Mash to find resources (lesson 2). They can suggest appropriate words to search with to find the results that they are looking for. **Exceeding**: Pupils demonstrate an understanding of the importance of online safety using their own private usernames and passwords for Purple Mash. Pupils understand the importance of keeping information, such as their usernames and passwords private and actively demonstrate this in lessons. Pupils take ownership of their work and save this in their own private space. Pupils demonstrating greater depth understand the
	• To explore the Tools section of Purple Mash and to learn about the common icons used in	• Pupils have explored the Tools section on Purple Mash and become familiar	

Unit	Aims	Success criteria	Unit End Outcomes
	Purple Mash for Save, Print, Open, New. • To explore the Games section on Purple Mash. • To understand the importance of logging out when they have finished.	with some of the key icons: Save, Print, Open and New. • Pupils have explored the Games section and looked at Table Toons (2x tables). • Pupils can log out of Purple Mash when they have finished using it and know why that is important.	principle but not the terminology of 'intellectual property' e.g., pupils might say 'I am saving my work, in my folder because I have created it and it belongs to me'.

Year 2

Unit\Lesson	Aims	Success criteria	Unit End Outcomes
2.2 – Online Safety	• To know how to refine searches using the Search tool. • To know how to share work electronically using the display boards. • 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.	• Pupils can use the search facility to refine searches on Purple Mash by year group and subject. • Pupils can share the work they have created to a display board. • Pupils understand that the teacher approves work before it is displayed. • Pupils are beginning to understand how things can be shared electronically for others to see both on Purple Mash and the Internet.	**Emerging**: With support, pupils are beginning to understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1. Point 1). With support, they can share their work using the display board (Unit 2.2 Lesson 1. Point 16). Furthermore, using 2Respond activities, the pupils develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2. Point 4). They also know how to report inappropriate content to their teacher. **Expected**: Pupils understand how to use the Purple Mash search bar and know the implications of inappropriate searches (Unit 2.2 Lesson 1. Point 1). Most pupils will be able to explain what a digital footprint is, that it is permanent and their online behaviour influences what it shows (lesson 3). Most pupils will be able to give reasons for keeping their password safe that include protecting their personal information.

Unit\Lesson	Aims	Success criteria	Unit End Outcomes
	• To introduce Email as a communication tool using 2Respond simulations. • To understand how we talk to others when they are not there in front of us. • To open and send simple online communications in the form of email.	• Pupils know that Email is a form of digital communication. • Pupils understand how 2Repond can teach them how to use email. • Pupils can open and send an email to a 2Respond character. • Pupils have discussed their own experiences and understanding of what email is used for. • Pupils have discussed what makes us feel happy and what makes us feel sad.	Most pupils will be able to express the good and bad sides of digital technology. In lesson 3, they can give examples of positive effects on life as well as negative. Pupils add their name to work but show a differentiation between full name and first name only when information is to be shared online. Most pupils will be able to share their work to a displayboard (lesson 1). By sharing their work using the display board, pupils begin to understand how things are shared electronically (Unit 2.2 Lesson 1. Point 16). Most pupils will be able to open and respond to simulated emails in 2Email (lesson 2) Most pupils will be able to open and send email responses to simulated emails in 2Email (Unit 2.2 Lesson 2 Point 4). Furthermore, using 2Respond activities the pupils develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2. Point 4). They also know how to report inappropriate content to their teacher.
	• To understand that information put online leaves a digital footprint or trail. • To begin to think critically about the	• Pupils can explain what a digital footprint is. • Pupils can give examples of things that they would not want to be in their digital footprint.	**Exceeding**: Pupils understand how to use the Purple Mash search bar (Unit 2.2 Lesson 1. Point 1) and for greater depth can refine searches using Boolean search terms (AND, OR, NOT). They know the implications of inappropriate searches. Pupils can share their work using the display board and begin to understand

Unit\Lesson	Aims	Success criteria	Unit End Outcomes
	information they leave online. • To identify the steps that can be taken to keep personal data and hardware secure.		how things are shared electronically (Unit 2.2 Lesson 1. Point 16). Furthermore, using 2Respond activities, the pupils develop an understanding of how to use email safely and responsibly (Unit 2.2 Lesson 2. Point 4). They also know how to report inappropriate content to their teacher.
2.5 – Effective Searching, Lesson 2	• To gain a better understanding of searching the Internet.	• I can identify the basic parts of a web search engine search page. • I have learnt to read a web search results page. • I can search for answers to a quiz on the Internet.	**Emerging**: Pupils have an awareness that their Internet searches form part of a 'digital footprint'. **Expected**: Pupils can relate the creation of a digital footprint to their search history and make contributions to the class discussion about this in relation to online safety. Pupils know that many search engine companies collect and sell information about users. **Exceeding**: Pupils apply what they know about search engine algorithms to their own online safety and digital footprint. They can understand the implications of search engines selling information and having paid ads at the top of search results.