



Computing

Curriculum map



PORTWAY INFANT SCHOOL

Computing INTENT

At Portway Infant School we aim to deliver a computing curriculum that provides pupils with a high-quality computing education that equips pupils to use computational thinking and **creativity** to navigate emerging technologies through the computing scheme from Purple Mash. The Purple Mash scheme supports the children to develop their computer science skills and to become confident computational thinkers. We aim to give them the knowledge and skills to understand and use key **vocabulary** to support their learning. We aim to nurture their **curiosity** and encourage them to explore and tinker with new programs and systems to be able to become confident using computing programs and to develop their digital literacy skills. We aim to develop the children's **cultural capital** and welcome experts in our community to enhance the children's understanding and aspirations to work in computer science. At Portway Infant School online safety is of the upmost importance and we follow the Education for a Connected World framework which Purple Mash has adapted and created infant appropriate lessons which embed key online safety strands to ensure our children are safe, happy and confident online.

Through our curriculum our intention is for children 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 de-bug 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.

Themes taken from Education for a connected world Computer science Information technology Digital Literacy	How?	When?	Vocabulary
Privacy and security	Purple Mash 2Be Safe: Session 1 - I can identify some simple examples of my personal information (e.g. name, address, birthday, age, location).	Autumn 2	Personal information Name, address, age, school, trusted grown ups, adults, birthday,
	Purple Mash 2Be Safe: Session 2 - I can describe who would be trustworthy to share this information with; I can explain why they are trusted.		
Online relationships	Purple Mash 2Be Safe: Session 1 - I can recognise some ways in which the internet can be used to communicate.		
	Purple Mash 2Be Safe: Session 2 - I can give examples of how I (might) use technology to communicate with people I know.		
	Purple Mash 2Be Safe: Session 1- I can recognise some ways in which the internet can be used to communicate.		
Online reputation	Purple Mash 2Be Safe: Session 2 - I can give examples of how I (might) use technology to communicate with people I know.		

Online Bullying	Purple Mash 2Be Safe: Session 1 - I can recognise some ways in which the internet can be used to communicate.	Spring 1	Online, offline, bullying, internet
Copyright and ownership	Purple Mash 2Be Safe: Session 2 - I can give examples of how I (might) use technology to communicate with people I know. Purple Mash 2Be Safe: Session 1 - I know that work I create belongs to me. Purple Mash 2Be Safe: Session 2 - I can name my work so that others know it belongs to me.		Belongs, ownership, name
Keyboard skills	Typing names onto Purple Mash paint projects, letters, space bar		Keyboard, letters, type, space bar, name, label,
Self-image and identity	Purple Mash 2Be Safe: Session 1 - I can recognise, online or offline, that anyone can say 'no' / 'please stop' / 'I'll tell' / 'I'll ask' to somebody who makes them feel sad, uncomfortable, embarrassed or upset	Spring 2	Online, offline, no, stop, sad, uncomfortable, embarrassed, upset, help, trusted adults
Robots	Programming floor robots using different directions		Program, robot, algorithm, direction, forward, backwards, right, left, go, stop , instruction
Health, well-being and lifestyle	Purple Mash 2Be Safe: Session 1 - I can identify rules that help keep us safe and healthy in and beyond the home when using technology. I can give some simple examples of these rules.	Summer 1	Rules, healthy, online, offline
Drawing skills	Selecting pencil and brush width, creating patterns, drawing pictures on Purple Mash paint		Select, width, brush, pattern, lines, control

Managing online information	Purple Mash 2Be Safe: Session 1 - I can talk about how to use the internet as a way of finding information online. Purple Mash 2Be Safe: Session 2 - I can identify devices I could use to access information on the internet.	Summer 2	Device, information, search, internet, online, tablet, phone, laptop, games console
Using Purple Mash individual logins	Logging into own account using animal and number password		Password, personal information, log out

Key Stage 1 Computing

Pupils will be taught about:

Computer science	Digital Literacy (including online safety)	Information technology
-code -algorithms -spot bugs and debug programs -program	- How computers help us learn - What is the internet? - How can we use the internet? - How do we take care of personal information? - How can we use the internet safely?	-How is data stored -How to save work -How to write a story on a computer - How animation works -making videos -Creating art on a computer

Year 1 Vocabulary

Computer science	Avatar, device, home screen, icon, grouping, sort, collect data, data, compare, pictogram, results, title, totals, algorithm, code, computer, debugging, instructions, machine, program, recipe, sequence, command, challenge, direction, instruction, left, right, root, undo, unit, action, click, code block, coding, object, output, plan, coder, run, scale, software
Digital Literacy (including online safety)	Password, private, search, filter, technology outside school, nick-names, shut and tell, personal information, consent, name, age, school, address, online chat, trusted adults, block, catfishing.
Information technology	file name, log out, menu, notification, tools, saving, folder, text box, tool bar, typing, delete, animation, background, category, clip art, gallery, copy, drop down menu, E-book, edit, eraser, features, font, sound, overwrite, paint tools, paste, play mode, redo, save, sound effect, text, voice recording, calculations, cell, column, image, lock cell, move cell, row, select, speak tool, spreadsheet, value.

Year 1 Computing

Themes taken from Education for a connected world Department for Education Statutory Guidance split into: Computer science Information technology Digital Literacy	How?	When?	Vocabulary
Self-image and identity Online Bullying Use technology safety and respectfully: identify where to go for help and support when they have concerns about content on the internet Keeping personal information private and use technology to purposefully create digital content	Purple Mash 2Be Safe: Session 1 - I can recognise that there may be people online who could make someone feel sad, embarrassed or upset. Purple Mash 2Be Safe: Session 2 - If something happens that makes me feel sad, worried, uncomfortable or frightened I can give examples of when and how to speak to an adult I can trust and how they can help. Purple Mash 2Be Safe: Session 1 - I can describe how to behave online in ways that do not upset others and can give examples. Watch Jessie and friends videos from 'Think u know' and discuss staying safe online -Draw picture of Jessie -Create online safety posters Purple Mash unit 1.1 -Login/logout lesson -Create your own avatar	Autumn 1	Kind, unkind, bullying, trusted adults, embarrassed, sad, upset Trusted adults, worried, sad, embarrassed, help Personal information, Log in, log out, avatar, name Name, label, save,

Use technology purposefully to create, store, manipulate and retrieve digital content	Purple Mash unit 1.1 (Paint project set as a 2Do) -adding your own name to your work -save your own work		Tray, find, retrieve, create
Recognise common uses of information technology beyond school	Purple Mash unit 1.1 - find your saved work -create basic needs of animals file (includes adding pictures)		
Online relationships	Purple Mash 2Be Safe: Session 1 - I can give examples of when I should ask permission to do something online and explain why this is important. Purple Mash 2Be Safe: Session 2 - I can use the internet with adult support to communicate with people I know (e.g. video call apps or services). Purple Mash 2Be Safe: Session 3 - I can explain why it is important to be considerate and kind to people online and to respect their choices. Purple Mash 2Be Safe: Session 4 - I can explain why things one person finds funny or sad online may not always be seen in the same way by others.	Autumn 2	Permission, online, kind, respectful
Understand what algorithms are, importance of precise and unambiguous instructions. Debugging simple programs.	Purple Mash unit 1.4 Lego builders -children learn that when they build something they need to follow accurate instructions. Talk on carpet how getting ready for school is an algorithm (ie. You need to put your pants on before your trousers) Introduce terms <i>algorithm and debugging</i> with the bird algorithm and wrong sandwich activities. Set as 2Dos		Instructions, algorithm, program, debug
Online reputation	Purple Mash 2Be Safe: Session 1 - I can recognise that information can stay online and could be copied. Purple Mash 2Be Safe: Session 2 - I can describe what information I should not put online without asking a trusted adult first.	Spring 1	Reputation, online, safe, rules, technology
Health, well-being and lifestyle	Purple Mash 2Be Safe: Session 1 - I can explain rules to keep myself safe when using technology both in and beyond the home.		

Learn how algorithms are implemented as computer programs and that programs work by following clear and precise instructions	Purple Mash unit 1.5 Maze explorers To understand basic functionality of direction keys and to use them to complete challenges. To understand how to create and debug a set of instructions (algorithm). To understand how to extend and change the algorithm.		Algorithm, code, instructions, program, de-bug, direction keys, change, extend
Privacy and security Creating content, organise and retrieve.	Purple Mash 2Be Safe: Session 1 - I can explain that passwords are used to protect information, accounts and devices. Purple Mash 2Be Safe: Session 2 - I can recognise more detailed examples of information that is personal to someone (e.g. where someone lives and goes to school, family names). Purple Mash 2Be Safe: Session 3 - I can explain why it is important to always ask a trusted adult before sharing any personal information online, belonging to myself or others. Purple Mash unit 1.6 animated storybooks Children learn the difference between a real book and an e-book. On Purple Mash they start creating My Simple Story on 2Create a Story.	Spring 2	Privacy, passwords, personal information, account, device, name, school Create, organise, retrieve, save
Managing online information	Purple Mash 2Be Safe: Session 1 - I can give simple examples of how to find information using digital technologies, e.g. search engines, voice activated searching). Purple Mash 2Be Safe: Session 2 - I know / understand that we can encounter a range of things online including things we like and don't like as well as things which are real or make believe / a joke. Purple Mash 2Be Safe: Session 3 - I know how to get help from a trusted adult if we see content that makes us feel sad, uncomfortable worried or frightened.	Summer 1	Digital, information, search engines, search

Coding Create and debug simple programs	Purple Mash unit 1.7 coding Children to learn what coding means in computing. (for the computer to make something happen it needs to follow clear instructions.) To predict what will happen and to understand that computer programs work by following a code. To use code to create a computer program.		Code, program, algorithm, instructions, debug, problem solving
Copyright and ownership	Purple Mash 2Be Safe: Session 1 - I can explain why work I create using technology belongs to me. Purple Mash 2Be Safe: Session 2 - I can say why it belongs to me (e.g. 'I designed it' or 'I filmed it'). Purple Mash 2Be Safe: Session 3 - I can save my work under a suitable title / name so that others know it belongs to me (e.g. filename, name on content). Purple Mash 2Be Safe: Session 4 - I understand that work created by others does not belong to me even if I save a copy.	Summer 2	Create, technology, belonging, ownership, save
Recognise common uses of information technology beyond school	Purple mash unit 1.9 – Technology outside school Children learn the term 'technology' -lesson 1: in the classroom find examples of technology. In small groups, if possible, go round the school finding examples of technology, take pictures. Set homework to draw technology they find at home. -lesson2: children to show their homework. Children complete a worksheet on technology outside school.		Technology, devices, online, computers, internet enabled

Year 2 Vocabulary

Computer science	Avatar, device, home screen, icon, grouping, sort, collect data, data, compare, pictogram, results, title, totals, algorithm, code, computer, debugging, instructions, machine, program, recipe, sequence, command, challenge, direction, instruction, left, right, root, undo, unit, action, click, code block, coding, object, output, plan, coder, run, scale, software Action, bug, event, interval, predict, properties, scene, test, text, timer,
Digital Literacy (including online safety)	Password, private, search, filter, technology outside school, nick-names, shut and tell, personal information, consent, name, age, school, address, online chat, trusted adults, block, catfishing, attachment, digital footprint, email, identifying, internet, protection, reply, secure, sharing, browser, network, search engine, URL, web address, web page, website, world wide web
Information technology	file name, log out, menu, notification, tools, saving, folder, text box, tool bar, typing, delete, animation, background, category, clip art, gallery, copy, drop down menu, E-book, edit, eraser, features, font, sound, overwrite, paint tools, paste, play mode, redo, save, sound effect, text, voice recording, calculations, cell, column, image, lock cell, move cell, row, select, speak tool, spreadsheet, value, addition, block graph, cut, data, drag, equals, label, row, table, toolbox, total, database, field, information, fact file, mind map.

Year 2 Computing

Department for Education Statutory Guidance	How?	When?	Vocabulary
Self-image and identify Coding Create and debug simple programs	Purple Mash 2Be Safe: session 1 - I can explain how other people may look and act differently online and offline. Purple Mash 2Be Safe: session 2 - I can give examples of issues online that might make someone feel sad, worried, uncomfortable or frightened I can give examples of how they might get help. Purple Mash unit 2.1 Coding Reintroduce the term algorithm and create a computer program using simple algorithm. - coding vocabulary quiz as a class followed by guided air traffic control lesson -lesson 2: +set up 2do for 'free code chimp' -children make up a simple program with the turtle changing background, make it move and so on. -lesson 3: repeat and timer lesson -children open free code chimp and experiment on repeat and timer commands	Autumn 1	Online, safety, feeling, sad, worried, frightened, help Code, instruction, program, right, left, move, direct, repeat, timer, commands, create, de-bug, problem solve
Online relationships 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.	Purple Mash 2Be Safe: session 1 - I can give examples of how someone might use technology to communicate with others they don't also know offline and explain why this might be risky. (e.g. email, online gaming, a pen-pal in another school / country). Purple Mash 2Be Safe: session 2 - I can explain who I should ask before sharing things about myself or others online. Purple Mash 2Be Safe: session 3 - I can describe different ways to ask for, give, or deny my permission online and can identify who can help me if I am not sure. Purple Mash 2Be Safe: session 4 - I can explain why I have a right to say 'no' or 'I will have to ask someone'. I can explain who can help me if I feel under pressure to agree to something I am unsure about or don't want to do. Purple Mash unit 2.2 Online safety	Autumn 2	Technology, online, offline, email, risk, communicate, stranger, sharing online, permission,

Online reputation Spreadsheets Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Purple Mash 2Be safe: session 1 - I can explain how information put online about someone can last for a long time. Purple Mash 2Be safe: session 2 - I can describe how anyone's online information could be seen by others. Purple Mash 2Be safe: session 3 - I know who to talk to if something has been put online without consent or if it is incorrect. Purple Mash unit 2.3 Spreadsheets To learn what a spreadsheet is used for, looks like, to navigate round a spreadsheet, enter data and learn new vocabulary related to spread sheets. To add different images, information, to use 'move cell', assign values to images. To use 2Calculate totalling tools and to solve a simple puzzle. To use 'speak' and 'count' tools in 2Calculate. To add and edit data in a table layout. To find out how spreadsheets can automatically create graphs from data.	Spring 1	Information, online, consent, ask, upload, shared online Cell, navigate, values, calculations, images, information, totals, totalling, graphs, data, edit,
Online Bullying Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Purple Mash 2Be safe: session 1 I can explain what bullying is, how people may bully others and how bullying can make someone feel. Purple Mash 2Be safe: session 2 - I can explain why anyone who experiences bullying is not to blame. Purple Mash 2Be safe: session 3 - I can talk about how anyone experiencing bullying can get help. Purple Mash unit 2.4 Questioning 2 Investigate To show that the information provided on pictograms is of limited use beyond answering simple questions. To use yes/no questions to separate information To construct a binary tree to separate different items To use 2Question (a binary tree) to answer questions. To use a database to answer more complex search questions.	Spring 2	Online bullying, STOP(several times on purpose) feelings, help Questions, binary tree, search, pictograms, information,

Health, well-being and lifestyle	Purple Mash 2Be safe: session 1 - I can explain simple guidance for using technology in different environments and settings e.g. accessing online technologies in public places and the home environment. I can say how those rules / guides can help anyone accessing online technologies. Purple Mash 2Be safe: session 1 - I can explain how passwords can be used to protect information, accounts and devices.	Summer 1	Technology, devices, online, rules, passwords, personal information, accounts, devices, private, connected, internet
Privacy and security	Purple Mash 2Be safe: session 2 - I can explain and give examples of what is meant by 'private' and 'keeping things private.' Purple Mash 2Be safe: session 3 - I can describe and explain some rules for keeping personal information private (e.g. creating and protecting passwords). Purple Mash 2Be safe: session 4 - I can explain how some people may have devices in their homes connected to the internet and give examples (e.g. lights, fridges, toys, televisions).		
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Purple Mash unit 2.5 presenting ideas The children will learn how a story can be presented in three ways. They will make a quiz about a story or class topic. The children will make a fact file on a non-fiction topic.		
Managing online information	Purple Mash 2Be safe: session 1 - I can use simple keywords in search engines. Purple Mash 2Be safe: session 2 - I can demonstrate how to navigate a simple webpage to get to information I need (e.g. home, forward, back buttons; links, tabs and sections). Purple Mash 2Be safe: session 3 - I can explain what voice activated searching is and how it might be used, and know it is not a real person (e.g. Alexa, Google Now, Siri). Purple Mash 2Be safe: session 1 - I can recognise that content on the internet may belong to other people.	Summer 2	Search engine, key words, information, navigate, home, forward, backwards, tabs, voice activation, content, belonging, ownerships

Copyright and ownership	Purple Mash 2Be safe: session 2 - I can describe why other people's work belongs to them.		
Digital literacy Use technology safely and respectfully	Purple Mash unit 2.5 Effective searching Children will understand terminology with the internet and searching. They will gain a better understanding of searching the internet via google. The children will create a leaflet of information for people searching the internet.		Searching, terminology, search, key words