

Whitley Abbey Primary School

Hand in hand we learn

Computing Curriculum

	Curriculum Drivers					
Possibilities and	Reading and Vocabulary	Health and Wellbeing	Celebrating Diversity			
Citizenship						
Our curriculum is designed to promote aspirations by preparing children for a changing world by making links between their learning and careers and opportunities in adult life. The curriculum enables children to make connections between what is learnt in school and open-up possibilities for them in later life. Teachers support children to be good citizens through the development of British Values and the core learning values of; Commitment, Opportunity, Respect and Excellence.	Our curriculum is designed to meet the needs of the children we serve placing great emphasis on the development of tier 2 and tier 3 vocabulary and fluency in reading. At Whitley Abbey we recognise that vocabulary development helps children to communicate effectively and to understand what they hear. Reading enables pupils to develop independent learning skills – skills that will serve them well in later life.	Our curriculum is designed to promote children's health, wellbeing and resilience through the promotion of Whitley Character Values, friendship, kindness, courage, resilience, gratitude and honesty. We want our children to make good choices about their own health and wellbeing. Research suggested that better emotional wellbeing is associated with higher achievement in primary school. When children feel safe they are able to better access learning in the classroom.	Our curriculum is designed to celebrate diversity. This means understanding that each individual is unique and recognising and celebrating our individual differences. The concept of diversity encompasses community, acceptance and respect. We foster the exploration of these differences in a safe, positive, and nurturing environment. We believe that by practicing mutual respect for qualities and experiences that are different from our own we build alliances across differences so that we can work together to eradicate all forms of discrimination.			

Intent

At Whitley Abbey Primary school we encourage pupils to become MASTERS of technology. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. In every year group each term pupils will complete an online safety unit of work. We subscribe to the nationalonlinesafety.com site and therefore have access to units of work linked to local and national issues. Our curriculum is planned but it is expected that teachers may substitute units of work to tackle current issues that are pertinent to the pupils that they teach.

Our computing curriculum focuses on the study of computer science and is knowledge rich. We encourage staff to try and embed computing across the whole curriculum to make learning creative and accessible through continuous provision. We want our pupils to be fluent with a range of tools to best express their understanding. We aspire that by Upper Key Stage 2, children have the independence and confidence to choose the best tool to fulfil the task and challenge set by teachers in other areas of the curriculum.

Implementation

New Curriculum organisation:

In the academic Year 2021/22 pupil numbers have led to the necessity to combine classes in Year 1 and 2 and Year 4 and 5 for their foundation subject teaching. School has retained a one form entry model for the delivery of English and Maths teaching. This significant change has resulted in a whole school review of the planned curriculum. Leaders have developed an aspiration curriculum which meets the needs of the unique teaching set up. Pupils in Year 1 and 2 and 4 and 5 will be taught in a two year rolling curriculum program to ensure full curriculum coverage with the exception of science where key objectives have been identified for each curriculum year group. In the year 2023/24 it is the intention to return to single year group classes as numbers have increased.

Resources

At Whitley Abbey Primary school we follow the National Curriculum and use Purple Mash to support the teaching of computing and to support non specialist teachers in the delivery of the curriculum. Each of the units of work are linked to programs to support the development of key skills in computing and to promote the development of Key vocabulary.

Assessment:

At Whitley Abbey Primary School, assessment is carried out in accordance with our Assessment Policy. Ongoing teacher assessment ensures that skills are developed and progress is made in the area of Computing. Key assessment questions are planned for in the curriculum, at the end of each unit of work.

Class teachers also assess each child's skills through application in other subjects – for example producing a word processed document as part of another subject or data handing in geography or science (for example).

Monitoring:

- Books scrutiny to check coverage of content, skills, quality and evidence of key computing vocabulary being taught in all topics.
- Pupil voice
- Teacher observations
- Evidence of continuous assessment

Work-life balance:

The Purple Mash scheme of work and national online safety site support staff by providing high quality resources to support the teaching of the computing curriculum in its entirety.

EYFS

In the Foundation Stage, the learning and development of computing is taught throughout all areas of the curriculum as and when it compliments existing learning opportunities. For example computing may be taught through providing pupils opportunities to:

- take a photograph with a camera or tablet
- search for information on the internet
- play games on the interactive whiteboard
- explore an old typewriter or other mechanical toys including telephones and keyboards in role play
- using a Beebot
- watching a video clip
- listening to music

These experiences and skills prepare the children for work in Y1 onwards and subject specific study.

Linked to

ELG: Managing Self Children at the expected level of development will: - Be confident to try new activities and show independence, resilience and perseverance in the face of challenge;

Key Stage 1	Key Stage 2
Pupils should be taught to:	Pupils should be taught to:
understand what algorithms are; how they are implemented as programs on	design, write and debug programs that accomplish specific goals,
digital devices; and that programs execute by following precise and	including controlling or simulating physical systems; solve problems
unambiguous instructions; create and debug simple programs; use logical	by decomposing them into smaller parts; use sequence, selection, and

reasoning to predict the behaviour of simple programs; use technology purposefully to create, organise, store, manipulate and retrieve digital content ;	repetition in programs; work with variables and various forms of input and output; use logical reasoning to explain how some simple
recognise common uses of information technology beyond school ; use	algorithms work and to detect and correct errors in algorithms and
technology safely and respectfully, keeping personal information private;	programs ; understand computer networks including the internet;
identify where to go for help and support when they have concerns about	how they can provide multiple services, such as the world wide web;
content or contact on the internet or other online technologies.	and the opportunities they offer for communication and collaboration
	; 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 ;
	use technology safely.

EYFS Our EYFS curriculum is planned but may be adapted to be responsive to pupil's interests				
- Example - Teacher Led experiences	Example - Enhanced Provision opportunities linked to Computing			
Children in Nursery and Reception will engage in ongoing learning in this subject throughout the academic year. Lesson content from the UKCIS "Education for a Connected World" framework. There are 8 areas:	~ Toys that move in different ways ~ Light box and torches ~ Toy microphone			
 Self-image and self-identity Online relationships Online bullying Managing online information Health well-being & lifestyle Privacy and 	 Use of iPads and tablets Controlling and listening to audio stories on a CD player Using equipment to enhance play in role play, such as a till. 			
security 8) Copyright and ownership.	~ Use Google to find out information ~ Use of Google maps			

website. Children will a		8 topics outlined on National Online Safety tie the Penguin' and 'DigiDuck' with their tea		~ Use of Beebots ~ Taking photographs and sho ~ Use of Purple Mash ~ Use of Interactive Whiteboa	
Vocabulary Choices, Internet, Website, Equipment, Buttons, Movement, Screen, Mouse, Images Keyboard, Technology, Share, Create, collect, count, organise.		mages	Assessment Questions Can children name the main parts of a computer? Can children explain a use for the internet? Can children talk about what they should not share online? Can children use technology with increasing confidence?		
			Year	· 1	
	Term	Autumn		Spring	Summer
uting	Deliberate Practice (Skills)	 create and debug simple programs use logical reasoning to predict the behavid use technology purposefully to create, orgation use technology safely and respectfully help and support when they have concord 	anise, store y, keeping	e, manipulate and retrieve digital con personal information private; id	Rules, Online, Private information, Email.
Computing	Continuous provision	Our computing curriculum aims to explicitly teach Computer Science Skills. Digital literacy and Information Technology will be delivered in a cross curricular approach. Therefore, children will be given regular opportunities word processing skills, use search engines, save and edit their work and present ideas in a variety of forms through other areas of the curriculum.			

	Knowledge Assessment questions:	 Safety/ Technology beyond school / grouping and sorting National Online Safety Unit - Self image and identify Assessment Questions: Do children know how to keep themselves safe online? Unit 1.9 Can children name 4 ways which technology is used at home? Can children 4 ways technology is used outside of school and home? Can children explain what is mean by technology? Can children describe how technology helps us to communicate? Unit 1.2 Can children sort and classify objects? Can children use a simple computer program to present their findings? 	Spreadsheets National Online Safety Unit - Online Relationships Assessment Questions: Do children know how to keep themselves safe online? Year 1 Unit 1.8 Can children enter data into cells Can children save files? Can children save files? Can children manipulate data? Can children explain what a spreadsheet is and how it might be used? Year 2 Unit 2.3 Spreadsheets Can children allocate a value to an image? Can children manipulate data using copy and paste to solve puzzles? Can children create a spreadsheet which includes a graph? Can children add labels to their spreadsheets and graphs? Can children answer questions about data?	Algorithms Dational Online Safety Unit - Online Reputation Assessment Questions: Do children know how to keep themselves safe online? Year 1 2Code -Unit 1.7 Can children understand that an algorithm is a set of instructions? Can children use an algorithm to solve a problem of achieve an objective? Do children know that an algorithm written for a computer is called a program? Year 2 2Code - Unit 2.1 Can children translate algorithms of more than 1 step? Can children translate algorithms into code? Can children translate algorithms into code? Can children test their own programs and make modifications?	
	Vocabulary	Technology, communication, program, present, sort,	Rows, columns, cells, arrow keys, delete back space	Algorithm, Program, instruction, order, debug	
			Year 2		
	Term	Autumn	Spring	Summer	
outing	Deliberate Practice (Skills)	 use technology safely and respectfully 	ehaviour of simple programs , organise, store, manipulate and retrieve digital content tfully, keeping personal information private; identify where concerns about content or contact on the internet or other Deliberate practise vocabulary: Appropriate/inappropriate sites Cyber-bullying Digital footprint Keyword searching		
Comput	Continuous provision	Our computing curriculum aims to explicitly teach C Digital literacy and Information Technology will be word processing skills, use search engines, save and	delivered in a cross curricular approach. There	efore, children will be given regular opportunities to practise of forms through other areas of the curriculum.	

	Knowledge Assessment questions:	 National Online Safety Unit - Online Bullying Assessment Questions Do children know how to keep themselves safe online? Year 1 Unit 1.8 Can children enter data into cells Can children save files? Can children manipulate data? Can children explain what a spreadsheet is and how it might be used? Year 2 Unit 2.3 Spreadsheets Can children enter data into cells? Can children manipulate data using copy and paste to solve puzzles? Can children create a spreadsheet which includes a graph? Can children and labels to their spreadsheets and graphs? Can children answer questions about data? 	National Online Safety Unit - Managing Online information Assessment Questions • Do children know how to keep themselves safe online? 2Question - Unit 2.4 • Can children create a pictogram to represent data? • Can children organise data in a data base? • Can children use a binary tree to sort information, manipulate data and answer questions? • Can children design their own binary tree? • Can children run searches on a data set?	 National Online Safety Unit - Health wellbeing and lifestyle Assessment Questions Do children know how to keep themselves safe online? Year 1 2Code - Unit 1.7 Can children understand that an algorithm is a set of instructions? Can children use an algorithm to solve a problem of achieve an objective? Do children know that an algorithm written for a computer is called a program? Year 2 2Code - Unit 2.1 Can children create algorithms of more than 1 step? Can children make predictions about what will happen? Can children debug a program? Can children test their own programs and make modifications?
_	Vocabulary	Data, spreadsheet, graph, label, copy, paste, cut, value	Pictogram, data, database, binary tree, binary, search, sort, present.	Algorithm, code, debug, program, design, test, translate.
	-	·	Year 3	
	Term	Autumn	Spring	Summer
Computin g	Deliberate Practice (Skills)	 systems; solve problems by decompositive use sequence, selection, and repetition use logical reasoning to explain how solution use search technologies effectively, appendent select, use and combine a variety of solution of programs, systems and content that 	in programs; work with variables and various forms of me simple algorithms work and to detect and correct e oreciate how results are selected and ranked, and be d ftware (including internet services) on a range of digita accomplish given goals, including collecting, analysing and responsibly; recognise acceptable/unaccept	input and output rrors in algorithms an iscerning in evaluatin I devices to design ar , evaluating and pres
Continuous provision		riculum aims to explicitly teach Computer Science S		regular opportunities to practise word processing

	skills, use search Knowledge Assessment questions:	engines, save and edit their work and present ideas in National Online Safety Unit - Self Image and identity Activity 1 Assessment Questions Ray Tomlinson • Can children explain what is meant by the term identity? Unit 3.5 • Can children list different ways that the internet can provide a range of platforms to communicate? • Can children explain and compare each communication method?	 National Online Safety Unit - Self Image and identity Activity 2 <u>Assessment Questions</u> Can children explain how people can represent themselves in different ways online? Unit 3.3 Can children collect and enter data? Can children create a table of data? Can children use this data to create graphs or charts? Can children edit headers and add labels? 	um. National Online Safety Unit - Self Image and identity Activity 3 <u>Assessment Questions</u> • Can children explain ways in which people might change their identity online? Unit 3.1 • Can children design their own program? • Can children code their own program? • Can children structure commands in their program in a systematic and logical way? • Can children explain their choice of commands and what actions they initiate? • Can children integrate multimedia components
	Vocabulary	 Can children exchange emails? Can children open and respond to emails? Can children select a recipient from their address book? Can children add an attachment to an email? Can children use the CC functionality? 	Unit 3.4 Can children type with both hands? Can children use the home, top and bottom row keys when typing? Data, table, spreadsheet, graph, chart, axis, header, cell, keys, rows, touch type, keyboard	 in their coding? Can children add timers to their program? Can children explain the difference between a timer and a repeat command? Can children use 'if' statements to add selection to their coding? Design, code, program, command, actions, multimedia, sound, animation, timer, repeat, if.
		Carbon Copy	Year 4	
	Term	Autumn	Spring	Summer
 Deliberate Practice (Skills) 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 ar use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluatin select, use and combine a variety of software (including internet services) on a range of digital devices to design ar of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and press use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; ide 				

	Continuo provision	JS	· · ·	Computer Science Skills. e delivered in a cross curricular approach. Therefore, ch d edit their work and present ideas in a variety of forms	· · ·		
	Knowledg Assessme questions	nt	 National Online Safety Unit - Online reputation 1+2 Assessment Questions Can children keep themselves safe? Can children explain how online and offline identities can be different? Unit 4.7 Can children use a search engine? Can children search accurately for intended information using key words? Can children demonstrate their understanding of online safety whilst using search engines? Can children analyse the contents of a web page for obvious clues about the credibility of the information? Unit 4.8 Can children recognise the main component parts of hardware which allow computers to join and form a network? Can children explain that there are different types of network and how they are connected? 	 National Online Safety Unit -Online reputation 3 <u>Assessment Questions</u> Can children describe positive ways for someone interact online? Can they understand how this can impact on how they are perceived? Unit 4.6 Can children explain what stop animation is? Can children create their own stop animation? Can children use the skin animation tool to show movement across the screen? Can children add backgrounds and sounds to their animation? Unit 4.9 Can children identify and discuss the main elements of music? Can children explain what melody is? Can children add melodic pattern using 2sequence? Can children use a variety of notes/experiment with pitch? Can children create a piece of house music? 	 National Online Safety Unit -Online reputation 4 <u>Assessment Questions</u> Can children explain that others online pretend to be someone else and explain reasons why they might do this? Unit 4.1 Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children use coding structures for selection and repetition? Can children identify an error within a program that prevents it following the desired algorithm and then fix it? Can children use timers to achieve repetition effects in a logical way? Do children understand 'if statements' for selection and combine these with other coding structures including variables to achieve the effects that they design in their programs? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children identify an error within a program that prevents it following the desired algorithm and then fix it? Can children explain the functions of variables in coding Can children explain the functions of variables in coding Can children translate algorithms that include sequence selection and repetition into code? Can children use tabs to organise their code? 		
	Vocabu	ary	Search engine, key words, credibility, component, hardware, network, connection.	Animation, skin, movement, background, sound, rhythm, tempo, melody, pattern, notes, music.	Algorithm, program, deconstruct, parts, bugs, code, if statements, variables, command, repeat until.		
				Year 5			
. .	Ferm		Autumn	Spring	Summer		

	Deliberate Practice (Skills)	 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 a use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluatin select, use and combine a variety of software (including internet services) on a range of digital devices to design a of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and pressing explanation informed choices use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; id 					
	Continuous provision	Our computing curriculum aims to explicitly teach Computer Science Skills. Digital literacy and Information Technology will be delivered in a cross curricular approach. Therefore, children will be given regular opportunities to practise word processing skills, use search engines, save and edit their work and present ideas in a variety of forms through other areas of the curriculum.					
	Knowledge Assessment	National Online Safety Unit - Managing Online Information <u>Assessment Questions</u>	National Online Safety Unit – Managing Online Information/ Copy right and ownership <u>Assessment Questions</u>	National Online Safety Unit – Managing Online Information/ Health and well being <u>Assessment Questions</u>			
Computing	questions:	 Can children explain how identity online be copied or modified? Can children demonstrate how to make responsible choices about having an online identity? Jerry Lawson Unit 5.5 Can children create a computer game using a template? Can children follow a theme when designing parts of a game? Can children combine text, sound, and graphic components within a game? Can children mix their approaches for image use such as uploading and using the drawing tools? Can children apply animation to objects to enhance their games? Can children design appropriate settings and characters within their games? Can children objectively review and evaluate a range of games? 	 Can children explain how identity online be copied or modified? Can children demonstrate how to make responsible choices about having an online identity? Unit 5.7 Can children collect and present a range of ideas in a concept map? Can children present their ideas as a whole class presentation? Can children present their ideas as a written text? Can children create an online collaborative concept map? Can children make logical choices for layout and content using images and nodes? Can children give and receive constructive feedback in relation to concept maps? 	 Can children explain how identity online be copied or modified? Can children demonstrate how to make responsible choices about having an online identity? Year 4 Unit 4.1 Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children use coding structures for selection and repetition? Can children identify an error within a program that prevents it following the desired algorithm and then fix it? Can children use timers to achieve repetition effects in a logical way? Do children understand 'if statements' for selection and combine these with other coding structures including variables to achieve the effects that they design in their programs? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Unit 5.1 Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts? Can children identify an error within a program that prevents it following the desired algorithm and then fix it? 			

Vocabula ry	Game, template, theme, design, parts, text, image, sound, graphic, components, uploading, tools, drawing, animation, objects, enhance, setting, character.	Concept map, ideas, present, presentation, onlin collaborative, layout, content, images, nodes.			
		Year 6			
Term	Autumn	Spring	Summer		
Deliberate Practice (Skills)	 systems; solve problems by decomposing the use sequence, selection, and repetition in puse logical reasoning to explain how some suse search technologies effectively, apprection select, use and combine a variety of software of programs, systems and content that according to the select select. 	repetition in programs; work with variables and various forms of input and output ain how some simple algorithms work and to detect and correct errors in algorithms and programs ctively, appreciate how results are selected and ranked, and be discerning in evaluating digital content iriety of software (including internet services) on a range of digital devices to design and create a range ntent that accomplish given goals, including collecting, analysing, evaluating and presenting data and information spectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to			
Continuous	Our computing curriculum aims to explicitly teach Co	omputer Science Skills.			
provision		delivered in a cross curricular approach. Therefore, child heir work and present ideas in a variety of forms throug	ren will be given regular opportunities to practise word h other areas of the curriculum.		
Knowledge Assessment questions:	National Online Safety Unit – Online Bullying <u>Assessment Questions</u>	National Online Safety Unit – Privacy and security <u>Assessment Questions</u>	National Online Safety Unit –Managing online information <u>Assessment Questions</u>		

digital world?

coding structures?

Unit 6.1

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Can children explain why it is important to challenge

Can children explain how to keep themselves safe in a

Can children turn a more complex programming

important aspects of the task (abstraction) and

then decomposing them in a logical way using

Can children design a program using 2Code?

Can children translate algorithms that include

sequence, selection and repetition into code?

Can children utilize nesting structures within

and reject inappropriate representations online?

task into an algorithm by identifying the

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Unit 6.6

Can children explain why it is important to

Can children explain how to keep themselves safe

Can children explain the difference between

Can children show all the things they use the

Can children explain what a WAN and LAN

the Internet and the World Wide Web and

challenge and reject inappropriate

representations online?

in a digital world?

give examples?

internet for?

are?

- Can children identify and critically evaluate online content?
- Can children explain why it is important to challenge and ٠ reject inappropriate representations online?
- Can children explain how to keep themselves safe in a digital world?

Unit 6.9

- Can children explain the benefits of collecting data ٠ online?
- Can children locate frequently used functions and ٠ tools and know how to find the functions that they need?
- Can children use a spreadsheet to carry out basic ٠ calculations including all the operations using formulae?
- Can children use tools such as series fill exist and ٠

	 Can children describe how they access the internet at school? Can children describe the hypothetical connections their device makes? 	 their code? Can children plan, design and create a program that includes variables relating to timing and scoring along with buttons which launch other programs? Can children organise their code using multiple tabs? Can children use functions within their code to eradicate unnecessary code such as shape creation? Can children's coding display an understanding of the function of variables in coding? Can children make logical attempts to put the separate parts of a complex algorithm or program together to explain the program as a whole? Can children demonstrate a secure understanding of the impact of changing the position of instructions within 2Code? 	 make use of the assistance they provide? Can children incorporate formulae for percentages, averages, maximum and minimum into their spreadsheets? Can children draw conclusions from spreadsheet data? Can children use graphic functionality within a spreadsheet program to make their data clearer and use this to answer questions?
Vocabulary	Internet, World Wide Web, WAN, LAN, Network, Connections, devices.	Algorithm, abstraction, decomposing, program, sequence, selection, repetition, nesting structures, variables, timer, scoring, launch, buttons, tabs, functions, code.	Data, online, functions, tools, spreadsheet, calculations, series fill, formulae, formula, percentages, averages, conclusions, graphic functionality, program.