



Small Schools Partnership

Computing

Curriculum Map Document

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Birdsedge

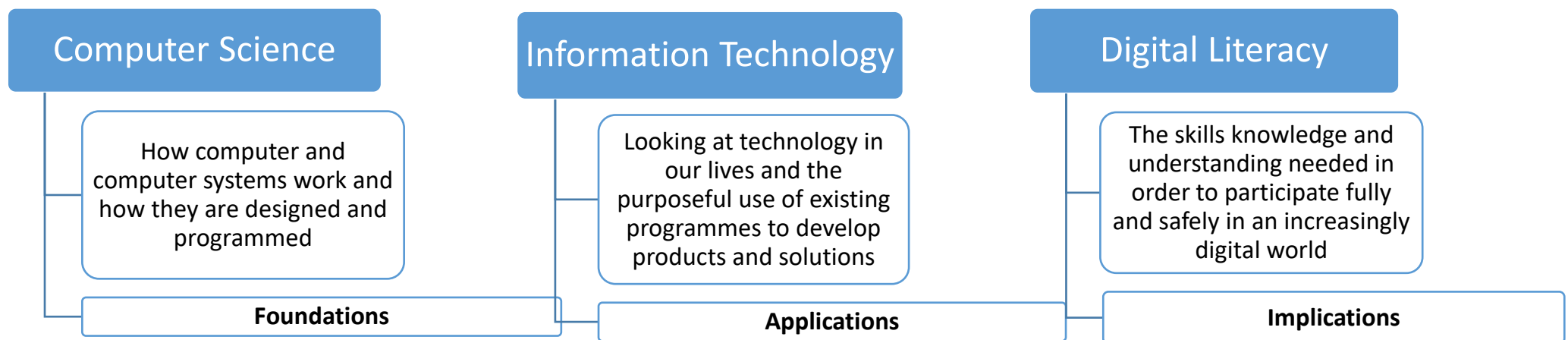


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1. Statement of Intent

As set out in Section 3 of the National Curriculum, a high quality computing curriculum:

‘equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world’.



In our Small Schools Partnership, we aim to provide a consistent and comprehensive computing curriculum that provides children with the knowledge and skills they need in the areas above. Wrapped around this is a culture of being a safe computer and internet user and contributing to the world of technology positively.

2. Computing in the Small Schools Partnership an Overview

Digital Literacy

Computer Science

Computing Systems and Networks

Programming A

Programming B

Information Technology

Creating Media 1

Creating Media 2

Data and Information

Dedicated Computing lessons are taught weekly to all year groups using Teach Computing. This is planned on a two year cycle to meet the needs of our mixed aged planning but with the 6 units spread over 2 years to allow for progression and deeper learning in each area before moving on.

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It

also ensures that connections are made.



In addition to the computing knowledge and skills taught we also use Project Evolve to ensure children are equipped to stay safe in a digital world. Every Computing lesson begins with a whole class starter session around e-safety using the long term plan over the page.





3. Whole School Long Term Plan – E Safety. Grange Moor

Online Safety at Grange Moor Primary School – Project Evolve. Cycle 1

	Reception	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
Autumn 1	Saying no	SI 1.1: Speaking up	SI 3.1: Identity	SI 5.1: Copied identities
	Internet communication	SI 1.2: Who makes me sad	SI 3.2: Online me	SI 5.2: Responsible choices
	How to communicate online	SI 1.3: Asking permission	SI 3.3: Changing identities	SI 5.3: Technology specific communication
		SI 1.4: Video calls	SI 3.4: Get together online	SI 5.4: Who might cause harm online
		SI 1.5: Considerate and kind	SI 3.5: Knowing someone online	SI 5.5: Online communities
Autumn 2		SI 1.6: Different reactions	SI 3.6: Trusting someone online	SI 5.6: How to get help
				SI 5.7: How can I support others
	Adding information	Rep 1.1: Copies	Rep 3.4: Changing your mind about trust	Rep 5.1: Search for information about an individual and summarise
	How can people be unkind online	Rep 1.2: Ask an adult	Rep 3.5: Hurting feelings online	Rep 5.2: How information about others can be used to make judgements
	Examples of how bully makes you feel	OB 1.1: How to behave online	OB 3.6: Giving and gaining permission	OB 5.3: Recognise online bullying can be different to real life
Spring 1			Rep 3.1: How to search for information on others	OB 5.2: How a 'joke' might feel like bullying
			Rep 3.2: Examples of people might want or not want to share	OB 5.3: Explain how to get help if they are being bullied online
			Rep 3.3: Explain who someone can share about sharing things online	OB 5.4: Identify ways to report concerns about bullying
				OB 5.5: How to block abusive users
Spring 2	Finding information online	MOI 1.1: Examples of how to find information	OB 3.1: Describe appropriate ways to behave online	OB 5.6: Describe helpline services which can help bullied people
	Internet devices	MOI 1.2: I know I can see lots of different things online	OB 3.2: Examples of how bullying can appear online	MOI 5.1: Explain benefits and limitations of using different search technologies
		MOI 1.3: I know how to get help from an adult		MOI 5.2: Why is it important to be sceptical
				MOI 5.3: Evaluate digital content and explain how to make choices
Summer 1	Rules that keep us safe and healthy	HWL 1.1: Explain rules which keep me safe	MOI 3.1: Demonstrate how to use key phrases in search engines	MOI 5.4: Explain key concepts: information, reviews...
	Examples of rules		MOI 3.2: Explain what autocomplete is and how to choose	MOI 5.5: How the internet uses information for different agendas
			MOI 3.3: How the internet buys and sells things	MOI 5.6: Identify online content which has been commercially sponsored or boosted
				MOI 5.7: Explain what stereotypes are
Summer 2	Identify personal information	PS 1.1: Explain how passwords protect	MOI 3.4: Difference between belief, opinion & fact	MOI 5.8: Describe how fake news can affect people
	Who is trustworthy	PS 1.2: Recognise personal information	MOI 3.5: Not all shared opinions may be true or fair	MOI 5.9: Explain what is meant by a hoax
		PS 1.3: I can explain the importance of asking an adult	MOI 3.6: Demonstrate how we can get help from a trusted adult	HWL 5.1: Describe how technology can affect health and well-being
			HWL 3.1: Explain negative impacts of spending too much time on technology	HWL 5.2: Describe strategies to promote wellbeing
			HWL 3.2: Explain why online activities have age restrictions	HWL 5.3: Recognise benefits and risks of being online
				HWL 5.4: Why do some apps and games request payment
	My work belongs to me	CO 1.1: Why work I make belongs to me	PS 3.1: Creating passwords and keeping passwords private	
	I can name my work so I know it's mine	CO 1.2: Say why my work belongs to me	PS 3.2: Only share with people you choose to trust	PS 5.1: Explain what a strong password is
		CO 1.3: I can save my work with a name I know	PS 3.3: Describe how connected devices can collect and share information	PS 5.2: Explain how free apps may share private information
		CO 1.4: I understand work made by others isn't mine	CO 3.1: Why can't we copy someone else's work	PS 5.3: Explain what app permissions are
				CO 5.1: Assess/justify when it is acceptable to use other people's work
				CO 5.2: Examples of content permitted to be reused

Online Safety at Grange Moor Primary School – Project Evolve. Cycle 2

	Reception	Year 1 and Year 2	Year 3 and Year 4	Year 5 and Year 6
Autumn 1	Saying no	SI 2.1: Looking different	SI 4.1: Different online and offline identities	SI 6.1 Identify and evaluate online content
	Internet communication	SI 2.2: Get help	SI 4.2: Positive interactions	SI 6.2 Describing issues online and getting help
	How to communicate online	Ref 2.1: Risky communication	SI 4.3: Pretending	SI 6.3 Persistence in asking for help
		Ref 2.2: Ask before sharing	Ref 4.1: Strategies for fun experiences	Ref 6.1 Impacts of sharing online
		Ref 2.3: Ask, give, deny permissions	Ref 4.2: Healthy/ unhealthy online behaviours	Ref 6.2 Respecting boundaries linked to sharing
		Ref 2.4: I can say no	Ref 4.3: Importance of shared content	Ref 6.3 Unintended consequences – private sharing
Autumn 2	Adding information	Ref 2.5: Identify who can help	Rep 4.1: How to find information about others online	Rep 6.1 Developing an online reputation
	How can people be unkind online	Ref 2.6: What if I don't ask permission	Rep 4.2: Explain ways information about others could have been created	Rep 6.2 Protecting your digital personality
	Examples of how bully makes you feel	Ref 2.7: Clicking yes	OB 4.1: Recognise when someone is upset, hurt or angry online	OB 6.1 Evidencing online bullying content
		Rep 2.1: Lasting information	OB 4.2: Describe ways people can be bullied online	OB 6.2 Reporting online bullying in different contexts
		Rep 2.2: Who can see me?	OB 4.3: Explain why people need to think carefully about how content they post might affect others	MOI 6.1 Understanding how search engines work
		Rep 2.3: Who to talk to		MOI 6.2 Using search technology effectively
Spring 1	Finding information online	OB 2.1: I can explain what bullying is	MOI 4.1: Analyse information to make an accuracy judgement	MOI 6.3 Opinions online information
	Internet devices	OB 2.2: I can explain why victims are not to blame	MOI 4.2: Describe how to search for information	MOI 6.4 Opinions presented as facts
		OB 2.3: How can someone experiencing bullying get help	MOI 4.3: Describe methods used to encourage people to buy online	MOI 6.5 Influence, manipulation and persuasion
				MOI 6.6 Persuasive Design
				MOI 6.7 Analysing and evaluating validity of facts
Spring 2	Rules that keep us safe and healthy	MOI 2.1: Use simple keywords in search engines	MOI 4.4: Do lots of similar opinions make them true?	MOI 6.8 Targeted online news
	Examples of rules	MOI 2.2: Demonstrate how to navigate a web page	MOI 4.5: Explain how technology can impersonate	MOI 6.9 Misinformation and disinformation
			MOI 4.6: Explain what fake news means	MOI 6.10 Large scale inaccurate information
				MOI 6.11 Identify, flag and report inappropriate content
Summer 1	Identify personal information	MOI 2.3: Explain voice activated searching	HWL 4.1: Technology as distraction	HWL 6.1 Systems that require Age related content
	Who is trustworthy	MOI 2.4: Differences between imaginary and real	HWL 4.2: When should I limit my time on technology	HWL 6.2 Pressures of technology
		MOI 2.5: Explain why some online info might not be true	PS 4.1: Strategies for keeping personal information private	HWL 6.3 Features of persuasive design
		HWL 2.1: Explain guidance for using technology in different places	PS 4.2: Explain internet use is never fully private and is monitored	HWL 6.4 Strategies to limit impact of tech on health
		HWL 2.2: Say how those rules can help us		PS 6.1 Managing passwords effectively
		PS 2.1: Explain how passwords can protect information		PS 6.2 Shared, lost or stolen passwords
Summer 2	My work belongs to me	PS 2.2: Give examples of keeping things private	PS 4.3: How online services may seek consent to store information	PS 6.3 Importance of software updates
	I can name my work so I know it's mine	PS 2.3: Explain rules for keeping information private	PS 4.4: What is the digital age of consent and the impact of this	PS 6.4 Increasing privacy
		PS 2.4: Internet devices in our homes	CO 4.1: Explain why I need to consider who owns information I find	PS 6.5 Identifying scams and phishing
		CO 2.1: Internet content may belong to others	CO 4.2: Give examples of content which I mustn't use without permission	PS 6.6 Terms and Conditions
		CO 2.2: Why other people's work belongs to them		CO 6.1 Searching for reusable content
				CO 6.2 Referencing sources I have used



Whole School Long Term Plan – Teach Computing. Grange Moor

Cycle 1						
	Autumn Term		Spring Term		Summer Term	
Reception	PSED Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.	Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	Maths Count objects, actions and sounds. Link the number symbol (numeral) with its cardinal number value. Select, rotate and manipulate shapes to develop spatial reasoning skills. Continue, copy and create repeating patterns.	EAD Explore, use and refine a variety of artistic effects to express their ideas and feelings.		
Unit	Computing Systems and Networks		Creating Media 1		Programming	
Year 1 and Year 2	<u>Technology Around Us</u> Recognising technology in school and using it responsibly.	<u>Information Technology Around Us</u> Identifying IT and how its responsible use improves our world in school and beyond.	<u>Digital Painting</u> Choosing appropriate tools in a program to create art, and making comparisons with working nondigitally.	<u>Digital Photography</u> Capturing and changing digital photographs for different purposes.	<u>Moving a Robot</u> Writing short algorithms and programs for floor robots, and predicting program outcomes.	<u>Robot Algorithms</u> Creating and debugging programs, and using logical reasoning to make predictions.
Year 3 and Year 4	<u>Connecting Computers</u> Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks	<u>The Internet</u> Recognising that the internet is a network of networks including the WWW, and why we should evaluate online content.	<u>Stop-frame Animation</u> Capturing and editing digital still images to produce a stop frame animation that tells a story	<u>Audio Production</u> Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	<u>Sequencing Sounds</u> Creating sequences in a block-based programming language to make music.	<u>Repetition in Shapes</u> Using a text-based programming language to explore count-controlled loops when drawing shapes.
Year 5 and Year 6	<u>Systems and Searching</u> Recognising IT systems in the world and how some can enable searching on the internet.	<u>Communication and Collaboration</u> Exploring how data is transferred by working collaboratively online.	<u>Video Production</u> Planning, capturing, and editing video to produce a short film.	<u>Webpage Creation</u> Designing and creating webpages, giving consideration to copyright, aesthetics and navigation	<u>Selection in Physical Computing</u> Exploring conditions and selection using a programmable microcontroller	<u>Variables in Games</u> Exploring variables when designing and coding a game.

Cycle 2

	Autumn Term		Spring Term		Summer Term	
Reception	PSED Show resilience and perseverance in the face of a challenge. Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.	Physical Development Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	Maths Count objects, actions and sounds. Link the number symbol (numeral) with its cardinal number value. Select, rotate and manipulate shapes to develop spatial reasoning skills. Continue, copy and create repeating patterns.		EAD Explore, use and refine a variety of artistic effects to express their ideas and feelings.	
Unit	Data and Information		Creating Media 2		Programming	
Year 1 and Year 2	<u>Grouping Data</u> Exploring object labels, then using them to sort and group objects by properties.	<u>Pictograms</u> Collecting data in tally charts and using attributes to organise and present data on a computer.	<u>Digital Writing</u> Using a computer to create and format text, before comparing to writing non-digitally.	<u>Digital Music</u> Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	<u>Programming Animations</u> Designing and programming the movement of a character on screen to tell stories	<u>Programming Quizzes</u> Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz
Year 3 and Year 4	<u>Branching Databases</u> Building and using branching databases to group objects using yes/no questions.	<u>Data Logging</u> Recognising how and why data is collected over time, before using data loggers to carry out an investigation,	<u>Desktop Publishing</u> Creating documents and modifying text, images and page layouts for a specific purpose	<u>Photo Editing</u> Manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled,	<u>Events and Actions in Programs</u> Writing algorithms and programs that use a range of events to trigger sequences of actions	<u>Repetition in Games</u> Using a block-based programming language to explore count-controlled and infinite loops when creating a game.
Year 5 and Year 6	<u>Flat-file Databases</u> Using a database to order data and create charts to answer questions.	<u>Introduction to Spreadsheets</u> Answering questions by using spreadsheets to organise and calculate data.	<u>Introduction to Vector Graphics</u> Creating images in a drawing program by using layers and groups of objects.	<u>3D Modelling</u> Planning, developing, and evaluation 3D computer models of physical objects.	<u>Selection in Quizzes</u> Exploring selection in programming to design and code an interactive quiz.	<u>Sensing Movement</u> Designing and coding a project that captures inputs from physical devices.



Whole School Long Term Plan – E Safety. Birdsedge

	Reception and Year 1	Year 2 and Year 3	Year 4 and Year 5
Autumn 1	Saying no	SI 2.1: Looking different	SI 4.1: Different online and offline identities
	SI 1.1: Speaking up	SI 2.2: Get help	SI 4.2: Positive interactions
	SI 1.2: Who makes me sad	Rel 2.1: Risky communication	SI 4.3: Pretending
		Rel 2.2: Ask before sharing	Rel 4.1: Strategies for fun experiences
	Internet communication	Rel 2.3: Ask, give, deny permissions	Rel 4.2: Healthy/ unhealthy online behaviours
Autumn 2	How to communicate online		Rel 4.3: Importance of shared content
	Adding information	Rep 3.1: How to search for information on others	Rep 4.1: How to find information about others online
	Rep 1.1: Copies	Rep 3.2: Examples of people might want or not want to share	Rep 4.2: Explain ways information about others could have been created
	Rep 1.2: Ask an adult	Rep 3.3: Explain who someone can share about sharing things online	OB 4.1: Recognise when someone is upset, hurt or angry online
		OB 3.1: Describe appropriate ways to behave online	OB 4.2: Describe ways people can be bullied online
Spring 1		OB 3.2: Examples of how bullying can appear online	OB 4.3: Explain why people need to think carefully about how content they post might affect others
	How can people be unkind online	MOI 2.1: Use simple keywords in search engines	MOI 4.5: Explain how technology can impersonate
	Examples of how bully makes you feel	MOI 2.2: Demonstrate how to navigate a web page	MOI 4.6: Explain what fake news means
	OB 1.1: How to behave online	MOI 2.3: Explain voice activated searching	MOI 4.1: Analyse information to make an accuracy judgement
	OB 2.1: I can explain what bullying is	MOI 2.4: Differences between imaginary and real	MOI 4.2: Describe how to search for information
Spring 2		MOI 2.5: Explain why some online info might not be true	
	Finding information online	HWL 3.1: Explain negative impacts of spending too much time on technology	MOI 4.3: Describe methods used to encourage people to buy online
	Internet devices	HWL 3.2: Explain why online activities have age restrictions	MOI 4.4: Do lots of similar opinions make them true?
			MOI 5.1: Explain benefits and limitations of using different search technologies
			MOI 5.2: Why is it important to be sceptical
Summer 1	Rules that keep us safe and healthy	PS 2.1: Explain how passwords can protect information	HWL 4.1: Technology as distraction
	Examples of rules	PS 2.2: Give examples of keeping things private	HWL 4.2: When should I limit my time on technology
	HWL 1.1: Explain rules which keep me safe	PS 2.3: Explain rules for keeping information private	HWL 5.1: Describe how technology can affect health and well-being
	Identify personal information	PS 2.4: Internet devices in our homes	HWL 5.2: Describe strategies to promote wellbeing
	Who is trustworthy		
Summer 2	My work belongs to me	CO 2.1: Internet content may belong to others	PS 4.1: Strategies for keeping personal information private
	I can name my work so I know it's mine	CO 2.2: Why other people's work belongs to them	PS 4.2: Explain internet use is never fully private and is monitored
	CO 1.1: Why work I make belongs to me	CO 3.1: Why can't we copy someone else's work	PS 4.3: How online services may seek consent to store information
			PS 4.4: What is the digital age of consent and the impact of this
			CO 4.1: Explain why I need to consider who owns information I find
			CO 4.1: Give examples of content which I mustn't use without permission

Cycle 2

	Reception and Year 1	Year 2 and Year 3	Year 4 and Year 5
Autumn 1	Rel 1.1: Asking permission	Rel 2.4: I can say no	SI 5.1: Copied identities
	Rel 1.2: Video calls	Rel 2.5: Identify who can help	SI 5.2: Responsible choices
	Rel 1.3: Considerate and kind	Rel 2.6: What if I don't ask permission	Rel 5.1: Technology specific communication
	Rel 1.4: Different reactions	Rel 2.7: Clicking yes	Rel 5.2: Who might cause harm online
			Rel 5.3: Online communities
Autumn 2			Rel 5.4: How to get help
			Rel 5.5: How can I support others
	Rep 2.1: Lasting information	Rel 3.1: Get together online	Rep 5.1: Search for information about an individual and summarise
	Rep 2.2: Who can see me?	Rel 3.2: Knowing someone online	Rep 5.2: How information about others can be used to make judgements
	Rep 2.3: Who to talk to	Rel 3.3: Trusting someone online	PS 5.1: Explain what a strong password is
Spring 1		Rel 3.4: Changing your mind about trust	PS 5.2: Explain how free apps may share private information
			PS 5.3: Explain what app permissions are
Spring 2	OB 2.2: I can explain why victims are not to blame	Rel 3.5: Hurting feelings online	OB 5.1: Recognise online bullying can be different to real life
	OB 2.3: How can someone experiencing bullying get help	Rel 3.6: Giving and gaining permission	OB 5.2: How a 'joke' might feel like bullying
		SI 3.1: Identity	OB 5.3: Explain how to get help if they are being bullied online
			OB 5.4: Identify ways to report concerns about bullying
Summer 1	MOI 1.1: Examples of how to find information	SI 3.2: Online me	OB 5.5: How to block abusive users
	MOI 1.2: I know I can see lots of different things online	SI 3.3: Changing identities	OB 5.6: Describe helpline services which can help bullied people
	MOI 1.3: I know how to get help from an adult		MOI 5.3: Evaluate digital content and explain how to make choices
			MOI 5.4: Explain key concepts: information, reviews...
Summer 2	HWL 2.1: Explain guidance for using technology in different places	MOI 3.1: Demonstrate how to use key phrases in search engines	MOI 5.5: How the internet uses information for different agendas
	HWL 2.2: Say how those rules can help us	MOI 3.2: Explain what autocomplete is and how to choose	MOI 5.6: Identify online content which has been commercially sponsored or boosted
	PS 1.1: Explain how passwords protect	MOI 3.3: How the internet buys and sells things	MOI 5.7: Explain what stereotypes are
	PS 1.2: Recognise personal information	MOI 3.4: Difference between belief, opinion & fact	MOI 5.8: Describe how fake news can affect people
	PS 1.3: I can explain the importance of asking an adult		MOI 5.9: Explain what is meant by a hoax
	CO 1.2: Say why my work belongs to me	MOI 3.5: Not all shared opinions may be true or fair	HWL 5.3: Recognise benefits and risks of being online
	CO 1.3: I can save my work with a name I know	MOI 3.6: Demonstrate how we can get help from a trusted adult	HWL 5.4: Why do some apps and games request payment
	CO 1.4: I understand work made my others isn't mine	PS 3.1: Creating passwords and keeping passwords private	CO 5.1: Assess/justify when it is acceptable to use other people's work
		PS 3.2: Only share with people you choose to trust	CO 5.2: Examples of content permitted to be reused
		PS 3.3: Describe how connected devices can collect and share information	

Whole School Long Term Plan – Teach Computing. Birdsedge

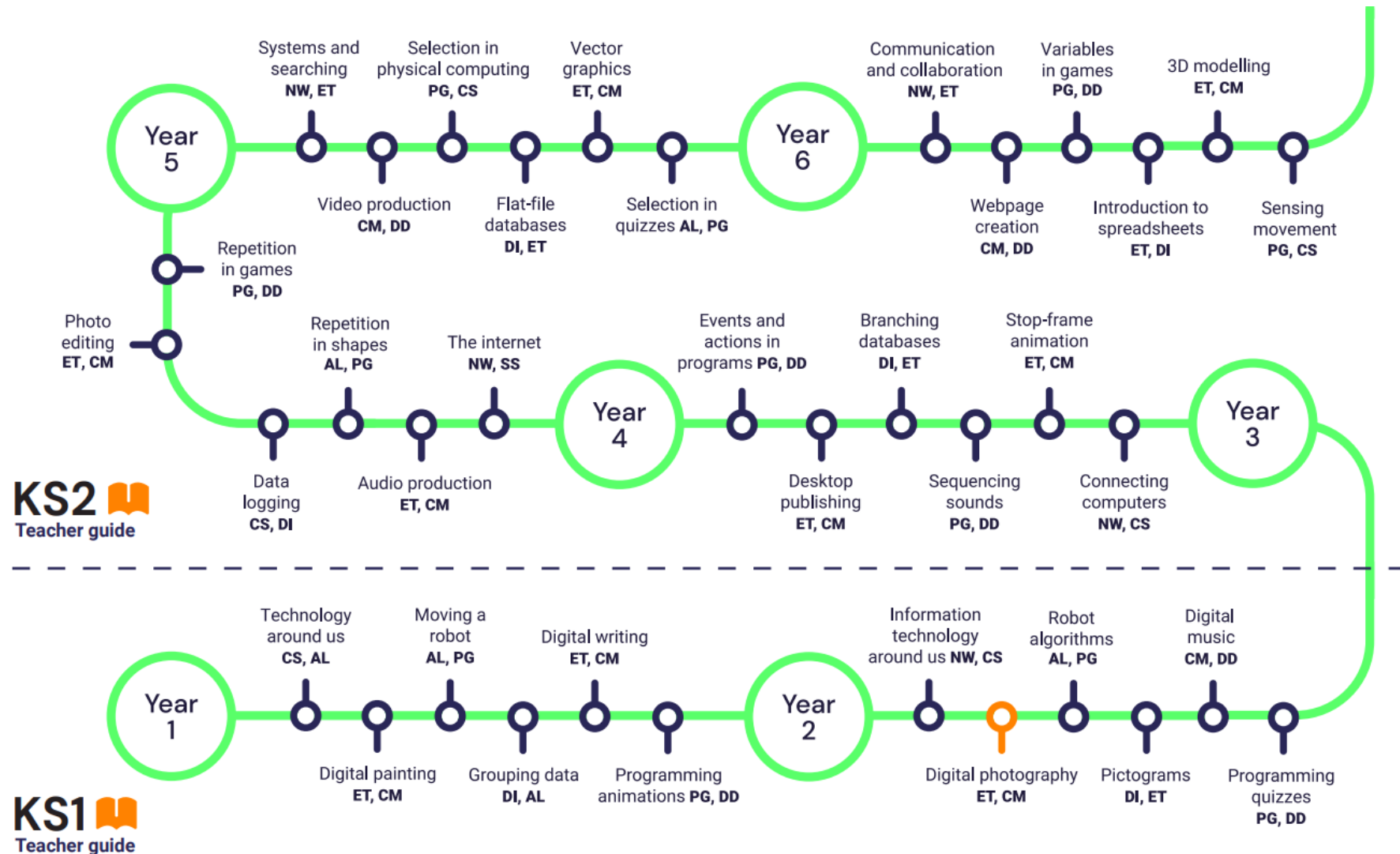
Cycle 1						
	Autumn Term		Spring Term		Summer Term	
Unit	Computing Systems and Networks		Creating Media 1		Programming	
Reception and Year 1	<u>Technology Around Us</u> <i>Recognising technology in school and using it responsibly.</i>		<u>Digital Painting</u> <i>Choosing appropriate tools in a program to create art, and making comparisons with working nondigitally.</i>		<u>Moving a Robot</u> <i>Writing short algorithms and programs for floor robots, and predicting program outcomes.</i>	
Year 2 and Year 3	<u>Information Technology Around Us</u> <i>Identifying IT and how its responsible use improves our world in school and beyond.</i>	<u>Connecting Computers</u> <i>Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks</i>	<u>Digital Photography</u> <i>Capturing and changing digital photographs for different purposes.</i>	<u>Stop-frame Animation</u> <i>Capturing and editing digital still images to produce a stop frame animation that tells a story</i>	<u>Robot Algorithms</u> <i>Creating and debugging programs, and using logical reasoning to make predictions.</i>	<u>Sequencing Sounds</u> <i>Creating sequences in a block-based programming language to make music.</i>
Year 4 and Year 5	<u>The Internet</u> <i>Recognising that the internet is a network of networks including the WWW, and why we should evaluate online content.</i>	<u>Systems and Searching</u> <i>Recognising IT systems in the world and how some can enable searching on the internet.</i>	<u>Audio Production</u> <i>Capturing and editing audio to produce a podcast, ensuring that copyright is considered.</i>	<u>Video Production</u> <i>Planning, capturing, and editing video to produce a short film.</i>	<u>Repetition in Shapes</u> <i>Using a text-based programming language to explore count-controlled loops when drawing shapes.</i>	<u>Selection in Physical Computing</u> <i>Exploring conditions and selection using a programmable microcontroller</i>

Cycle 2

	Autumn Term		Spring Term		Summer Term	
Unit	Data and Information		Creating Media 2		Programming	
Reception and Year 1	<u>Grouping Data</u> <i>Exploring object labels, then using them to sort and group objects by properties.</i>		<u>Digital Writing</u> <i>Using a computer to create and format text, before comparing to writing non-digitally.</i>		<u>Programming Animations</u> <i>Designing and programming the movement of a character on screen to tell stories</i>	
Year 2 and Year 3	<u>Pictograms</u> <i>Collecting data in tally charts and using attributes to organise and present data on a computer.</i>	<u>Branching Databases</u> <i>Building and using branching databases to group objects using yes/no questions.</i>	<u>Digital Music</u> <i>Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.</i>	<u>Desktop Publishing</u> <i>Creating documents and modifying text, images and page layouts for a specific purpose</i>	<u>Programming Quizzes</u> <i>Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz</i>	<u>Events and Actions in Programs</u> <i>Writing algorithms and programs that use a range of events to trigger sequences of actions</i>
Year 4 and Year 5	<u>Data Logging</u> <i>Recognising how and why data is collected over time, before using data loggers to carry out an investigation,</i>	<u>Flat-file Databases</u> <i>Using a database to order data and create charts to answer questions.</i>	<u>Photo Editing</u> <i>Manipulating digital images, and reflecting on the impact of the changes and whether the required purpose is fulfilled,</i>	<u>Introduction to Vector Graphics</u> <i>Creating images in a drawing program by using layers and groups of objects.</i>	<u>Repetition in Games</u> <i>Using a block-based programming language to explore count-controlled and infinite loops when creating a game.</i>	<u>Selection in Quizzes</u> <i>Exploring selection in programming to design and code an interactive quiz.</i>

4. Progression of Skills

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made.



Computing: Progression of skills Y1

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
• I can keep my password private. • I can tell you what personal information is. • I can tell an adult when I see something unexpected or worrying online. • I can talk about why it's important to be kind and polite. I can recognise an age appropriate website. • I can agree and follow sensible e-Safety rules.	• I can give instructions to my friend and follow their instructions to move around. • I can describe what happens when I press buttons on a robot. • I can press the buttons in the correct order to make my robot do what I want. • I can describe what actions I will need to do to make something happen and begin to use the word algorithm. • I can begin to predict what will happen for a short sequence of instructions. • I can begin to use software/apps to create movement and patterns on a screen. • I can use the word debug when I correct mistakes when I program.	• I can talk about the different ways in which information can be shown. • I can use technology to collect information, including photos, video and sound. • I can sort different kinds of information and present it to others. • I can add information to a pictograph and talk to you about what I have found out.	• I can be creative with different technology tools. • I can use technology to create and present my ideas. • I can use the keyboard or a word bank on my device to enter text. • I can save information in a special place and retrieve it again.	• I can recognise the ways we use technology in our classroom. • I can recognise ways that technology is used in my home and community. • I can use links to websites to find information. • I can begin to identify some of the benefits of using technology

Computing: Progression of skills Y2

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
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• I can explain why I need to keep my password and personal information private. • I can describe the things that happen online that I must tell an adult about. • I can talk about why I should go online for a short amount of time. • I can talk about why it is important to be kind and polite online and in real life. • I know that not everyone is who they say they are on the Internet.	• I can give instructions to my friend (using forward, backward and turn) and physically follow their instructions. • I can tell you the order I need to do things to make something happen and talk about this as an algorithm. • I can program a robot or software to do a particular task. I can look at my friend's program and tell you what will happen. • I can use programming software to make objects move. • I can watch a program execute and spot where it goes wrong so that I can debug it.	• I talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder. • I can make and save a chart or graph using the data I collect. • I can talk about the data that is shown in my chart or graph. • I am starting to understand a branching database. • I can tell you what kind of information I could use to help me investigate a question.	• I can use technology to organise and present my ideas in different ways. • I can use the keyboard on my device to add, delete and space text for others to read. • I can tell you about an online tool that will help me to share my ideas with other people. • I can save and open files on the device I use.	• I can tell you why I use technology in the classroom. • I can tell you why I use technology in my home and community. I am starting to understand that other people have created the information I use. • I can identify benefits of using technology including finding information, creating and communicating • I can talk about the differences between the Internet and things in the physical world.
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Computing: Progression of skills Y3

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
- I can talk about what makes a secure password and why they are important. - I can protect my personal information when I do different things online. - I can use the safety features of websites as well as reporting concerns to an adult. - I can recognise websites and games appropriate for my age. - I can make good choices about how long I spend online. - I ask an adult before downloading files and games from the Internet. I can post positive comments online	- I can break an open ended problem up into smaller parts. - I can put programming commands into a sequence to achieve a specific outcome. - I keep testing my program and can recognise when I need to debug it. - I can use repeat commands. - I can describe the algorithm I will need for a simple task. - I can detect a problem in an algorithm which could result in unsuccessful programming.	- I can talk about the different ways data can be organised. - I can search a readymade database to answer questions. - I can collect data help me answer a question. - I can add to a database. - I can make a branching database - I can use a data logger to monitor changes and can talk about the information collected.	- I can create different effects with different technology tools. - I can combine a mixture of text, graphics and sound to share my ideas and learning. - I can use appropriate keyboard commands to amend text on my device, including making use of a spellchecker. - I can evaluate my work and improve its effectiveness. - I can use an appropriate tool to share my work online.	- I can save and retrieve work on the Internet, the school network or my own device. - I can talk about the parts of a computer. - I can tell you ways to communicate with others online. - I can describe the World Wide Web as the part of the Internet that contains websites. - I can use search tools to find and use an appropriate website. - I think about whether I can use images that I find online in my own work.

Computing: Progression of skills Y4

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
• I choose a secure password when I am using a website. • I can talk about the ways I can protect myself and my friends from harm online. • I use the safety features of websites as well as reporting concerns to an adult. • I know that anything I post online can be seen by others. • I choose websites and games that are appropriate for my age. • I can help my friends make good choices about the time they spend online. • I can talk about why I need to ask a trusted adult before downloading files and games from the Internet. • I comment positively and respectfully online.	• I can use logical thinking to solve an open-ended problem by breaking it up into smaller parts. • I can use an efficient procedure to simplify a program. • I can use a sensor to detect a change which can select an action within my program. I know that I need to keep testing my program while I am putting it together. I can use a variety of tools to create a program. • I can recognise an error in a program and debug it. I recognise that an algorithm will help me to sequence more complex programs. • I recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology.	• I can organise data in different ways. • I can collect data and identify where it could be inaccurate. • I can plan, create and search a database to answer questions. • I can choose the best way to present data to my friends. • I can use a data logger to record and share my readings with my friends.	• I can use photos, video and sound to create an atmosphere when presenting to different audiences. • I am confident to explore new media to extend what I can achieve. • I can change the appearance of text to increase its effectiveness. • I can create, modify and present documents for a particular purpose. • I can use a keyboard confidently and make use of a spellchecker to write and review my work. • I can use an appropriate tool to share my work and collaborate online. • I can give constructive feedback to my friends to help them improve their work and refine my own work.	• I can tell you whether a resource I am using is on the Internet, the school network or my own device. • I can identify key words to use when searching safely on the World Wide Web. • I think about the reliability of information I read on the World Wide Web. • I can tell you how to check who owns photos, text and clipart. • I can create a hyperlink to a resource on the World Wide Web.

Computing: Progression of skills Y5

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
• I protect my password and other personal information. • I can explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult. • I know that anything I post online can be seen, used and may affect others. • I can talk about the dangers of spending too long online or playing a game. • I can explain the importance of communicating kindly and respectfully. • I can discuss the importance of choosing an age-appropriate website or game. • I can explain why I need to protect my computer or device from harm. • I know which resources on the Internet I can download and use.	• I can decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program. • I can refine a procedure using repeat commands to improve a program. • I can use a variable to increase programming possibilities. • I can change an input to a program to achieve a different output. • I can use 'if' and 'then' commands to select an action. • I can talk about how a computer model can provide information about a physical system. • I can use logical reasoning to detect and debug mistakes in a program. • I use logical thinking, imagination and creativity to extend a program.	• I can use a spreadsheet and database to collect and record data. • I can choose an appropriate tool to help me collect data. • I can present data in an appropriate way. • I can search a database using different operators to refine my search. • I can talk about mistakes in data and suggest how it could be checked.	• I can use text, photo, sound and video editing tools to refine my work. • I can use the skills I have already developed to create content using unfamiliar technology. • I can select, use and combine the appropriate technology tools to create effects that will have an impact on others. • I can select an appropriate online or offline tool to create and share ideas. • I can review and improve my own work and support others to improve their work.	• I can describe different parts of the Internet. • I can use different online communication tools for different purposes. • I can use a search engine to find appropriate information and check its reliability. • I can recognise and evaluate different types of information I find on the World Wide Web. • I can describe the different parts of a webpage. • I can find out who the information on a webpage belongs to.

Computing: Progression of skills Y6

e-Safety	Programming	Handling Data	Multimedia	Technology in our lives
• I protect my password and other personal information. • I can explain the consequences of sharing too much about myself online. • I support my friends to protect themselves and make good choices online, including reporting concerns to an adult. • I can explain the consequences of spending too much time online or on a game. • I can explain the consequences to myself and others of not communicating kindly and respectfully. • I protect my computer or device from harm on the Internet.	• I can deconstruct a problem into smaller steps, recognising similarities to solutions used before. • I can explain and program each of the steps in my algorithm. • I can evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm. • I can recognise when I need to use a variable to achieve a required output. • I can use a variable and operators to stop a program. • I can use different inputs (including sensors) to control a device or onscreen action and predict what will happen. • I can use logical reasoning to detect and correct errors in a algorithms and programs.	• I can plan the process needed to investigate the world around me. • I can select the most effective tool to collect data for my investigation. • I can check the data I collect for accuracy and plausibility. • I can interpret the data I collect. • I can present the data I collect in an appropriate way. • I use the skills I have developed to interrogate a database.	• I can talk about audience, atmosphere and structure when planning a particular outcome. • I can confidently identify the potential of unfamiliar technology to increase my creativity. • I can combine a range of media, recognising the contribution of each to achieve a particular outcome. • I can tell you why I select a particular online tool for a specific purpose. • I can be digitally discerning when evaluating the effectiveness of my own work and the work of others.	• I can tell you the Internet services I need to use for different purposes. • I can describe how information is transported on the Internet. • I can select an appropriate tool to communicate and collaborate online. • I can talk about the way search results are selected and ranked. • I can check the reliability of a website. • I can tell you about copyright and acknowledge the sources of information that I find online.

5. Assessment

Through teach computing each unit provides an assessment rubric for summative assessment of pupil outcomes in each area.

Assessment rubric: Year 3 – Desktop publishing

Learner:		Teacher:		Date:	
Task	Emerging [1]	Expected [2]	Exceeding [3]	Score	
	- Explain that a document author has decisions to make - Provide one advantage and disadvantage of using text, images or emojis online.	- Describe how different challenges require different solutions - Give an example of when using text, images or emojis online could be misinterpreted.	- Outline an approach to completing a task - Explain why using text, images or emojis online can be misinterpreted.		
Design decisions	Recognise that text and images can be laid out in different formats	Choose an appropriate layout for a given scenario	Explain why that layout is most suited to the scenario		
Implementation	- Use some placeholders to divide the page - Add some amounts of text	- Use placeholders appropriately to divide the page (magazine) - Add text and images - Format some of the text	- Change the background colours - Add images - Include word art - Change text, including resizing, colours, and font types - Place images appropriately on the page		
Evaluation	Identify which elements of the task have been achieved	Evaluate how successful they were in meeting the task requirements	Identify how and why their project could be improved		

Assessment rubric: Year 1 – Technology Around Us

Assessment rubric: Year 1 – Technology Around Us				Date:	
Learner:		Teacher:			
	Emerging [1]	Expected [2]	Exceeding [3]		Score
Task	• Outline the broad requirements of the task	• Explain the key requirements of the task	• Outline an approach to planning the task		
Knowledge	• Recognise technology that can help us • Explain what a keyboard is • Now work is kept in a file • Know a rule to keep themselves safe and healthy when using technology in the home or at school	• Identify examples of technology and explain how they can help us • Recognise that a computer is an example of technology • Describe what a keyboard is for • Know a computer stores work in files • Give examples of rules to keep them safe and healthy when they are using technology in and beyond the home	• Name and explain the purpose of different parts of the computer • Outline keys on a keyboard and how they help them do work • Give examples of rules to keep themselves and others safe and healthy when they are using technology in and beyond the home • Explain why they benefit from these rules		
Implementation	• Identify some examples of technology • Identify some parts of a computer • Indicate how to turn the computer on and log on with adult support • Begin to move the mouse, knowing this moves the cursor on the screen • Type on a computer with support • Open a program using the mouse cursor with support	• Choose a piece of technology to do a job • Identify the main parts of a computer • Use a keyboard to type their name on a computer • Turn on the computer and log on with an aid • Turn on the computer in different ways – click, select and drag • Use a mouse in different ways – click, select and drag • Use the keyboard to edit text and delete letters • Demonstrate that they can use technology safely	• Recognise that some technology can be used in different ways • Turn on the computer and log on independently • Accurately move the mouse to select a program, click and drag using the mouse cursor to make objects on a screen • Use the keyboard confidently, for example moving to a letter using arrow keys to delete it		
Evaluation	• Identify which elements of the task have been achieved	• Evaluate how successful they were in meeting the task requirements	• Identify how and why their project could be improved		