



St Andrew's CofE Primary School – Computing Curriculum

Purpose

A high-quality computing education 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.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

Attainment

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Curriculum and Coverage Links

Cycle A			
Year 1 /2	Term 1 – Places People Go	Term 2 – Build It Up	Term 3 – Animal Kingdom
	<p><i>Computer Science-</i> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <ul style="list-style-type: none"> create and debug simple programs use logical reasoning to predict the behaviour of simple programs <p>Human Crane Algorithms - Support Planning Daisy the Dinosaur 2Simple Logo 2DIY Kodable 2Go Roamer Too</p>	<p><i>Safety-</i> 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.</p> <p>Circle Times Keeping personal information private Who can I ask Think U Know Hectors Friends</p> <p><i>Use of technology -</i> recognise common uses of information technology beyond school How supermarket works Junk model devices & roleplay</p>	<p>Digital Literacy - use technology purposefully to create, organise, store, manipulate and retrieve digital content Taking & editing photos Database & Graphs Text & Images Presenting Information</p>
Year 3 /4	Term 1 – Active Planet – Volcanoes and Earthquakes	Term 2 – Save the World (Rainforests)	Term 3- Do You Live Around Here?
	<p><i>Computer Science-</i></p> <ul style="list-style-type: none"> 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 	<p><i>Searching</i></p> <ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <p>Web research via other subject focus <i>Digital Literacy</i></p> <ul style="list-style-type: none"> select, use and combine a variety of software 	<p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> 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

	<p>repetition in programs; work with variables and various forms of input and output</p> <ul style="list-style-type: none"> • use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <p>Scratch 1.4 Smoking Car Game(2) Planning Dressing Up Game(2) Planning Getting Up Algorithm(3) Planning Maths Quiz(4) Planning Jam Sandwich (Algorithm (bottom))(1) Planning link to literacy 2016+ Logo Letters</p>	<p>(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</p> <p>Word Processing(5) Desktop Publishing(5) Presentation Media(5) iPod iPad Skills(2)</p> <p><i>Safety</i></p> <ul style="list-style-type: none"> • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. <p>Circle Times Passwords Have your say ThinkUKnow</p>	<p>given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>Word Processing(5) Desktop Publishing(5) Presentation Media(5) iPod iPad Skills(2)</p> <p><i>Searching</i></p> <ul style="list-style-type: none"> • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <p>Web research via other subject focus</p>
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Cycle B

Year 1 /2	Term 1 – How Are You?	Term 2 – Let’s Play! (Toys)	Term 3 – Flowers and Insects
	<p><i>Computer Science-</i> understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <ul style="list-style-type: none"> • create and debug simple programs • use logical reasoning to 	<p><i>Safety-</i> 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.</p> <p>Circle Times Keeping personal information private Who can I ask Think U Know Hectors Friends</p>	<p>Digital Literacy - use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Taking & editing photos Database & Graphs Text & Images Presenting Information</p>

	<p>predict the behaviour of simple programs</p> <p>Hopscotch 2Simple Logo 2Code Human Robot Activities Choose one from planning Roamer Too</p>	<p><i>Use of technology - recognise common uses of information technology beyond school</i></p> <p>How supermarket works Junk model devices & roleplay</p>	
Year 3 / 4	Term 1 - Airports	Term 2 – Story of Chocolate	Term 3 – Time and Place
	<p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> 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 <p>Word Processing(5) Desktop Publishing(5) Presentation Media(5) iPod iPad Skills(2)</p>	<p><i>Searching</i></p> <ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content <p>Web research via other subject focus</p> <p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> 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 <p>Word Processing(5) Desktop Publishing(5) Presentation Media(5) iPod iPad Skills(2)</p> <p><i>Safety</i></p> <ul style="list-style-type: none"> use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p><i>Computer Science-</i></p> <ul style="list-style-type: none"> 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 and programs <p>Scratch 1.4 Music Machine(4) Planning Conversation(2) Scratch Planning Lunchtime Algorithms(3) Slug Trail Game(2) Planning Playground Games Flowcharts Planning Algorithms(1) Planning</p>

		Circle Times Passwords Have your say ThinkUKnow	2017+ Logo Skyline <i>Searching</i> <ul style="list-style-type: none"> • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Web research via other subject focus
Year 5	Term 1 – Echoes of Eccles	Term 2 – All the Fun of the Fair	Term 3 – Mission to Mars
	<i>Research</i> <ul style="list-style-type: none"> • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Web research via other subject focus Research List <i>Use of Technology</i> <ul style="list-style-type: none"> • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; 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 	<i>Use of Technology</i> <ul style="list-style-type: none"> • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; 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 Connecting the Internet Planning Tracing the Internet Packet Game (3) Linking WWW How web search works How a network works (3) <i>Digital Literacy</i> <ul style="list-style-type: none"> • 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 Spreadsheets(5) Planning	<i>Research</i> <ul style="list-style-type: none"> • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content Web research via other subject focus Research List <i>Computer Science</i> <ul style="list-style-type: none"> • 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

	<p>Connecting the Internet Planning</p> <p>Tracing the Internet Packet Game (3) Linking WWW How web search works How a network works (3) <i>Digital Literacy</i></p> <ul style="list-style-type: none"> 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 <p>Spreadsheets(5) Planning Databases(4) Planning 3D modelling(3) Planning Podcasting(3) Planning Animation(4) Planning Web Publishing(5) Planning</p>	<p>Databases(4) Planning 3D modelling(3) Planning Podcasting(3) Planning Animation(4) Planning Web Publishing(5) Planning <i>Safety</i></p> <ul style="list-style-type: none"> use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. <p>Circle Times Images Planning Mobile Phones Planning Keeping our identity private Planning</p>	<p>work and to detect and correct errors in algorithms and programs</p> <p>Cycle 1 2014-2015 Only Smoking Car Game(2) Planning Dressing Up Game(2) Planning Maths Quiz(4) Planning Slug Trail Game(2) Planning Jam Sandwich (Algorithm (bottom))(1) Planning Times Tables(3) Planning Clock(3)Planning Crab Maze(3) Planning Primary Games Maker (1 project) Cartesian Coordinates(1) Planning Toilet Fan(afternoon)* Exchange Sort Investigation(2) Planning</p> <p>Cycle 1 2016+ Counting Machine(3) Planning Perimeter(2) Planning Primary Games Maker (1 project) (4) Planning Car Park Barrier(afternoon)* Planning Tilt Switch(afternoon)* Planning</p>	
Year 6	Term 1 - Time Travellers	Intrepid Explorers	The Big Science Project	Term 3 - Safety at Sea
	<p><i>Research</i></p> <ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content 	<p><i>Safety</i></p> <ul style="list-style-type: none"> use technology safely, respectfully and responsibly; recognise acceptable/unacc 	<p><i>Research</i></p> <ul style="list-style-type: none"> use search technologies effectively, appreciate how results are selected 	<p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> 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,

	<p>Web research via other subject focus Research List</p> <p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> • 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 <p>Spreadsheets(5) Planning Databases(4) Planning 3D modelling(3) Planning Podcasting(3) Planning Animation(4) Planning Web Publishing(5) Planning</p> <p><i>Use of Technology</i></p> <ul style="list-style-type: none"> • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration • use search technologies effectively, appreciate how results are selected and ranked, and be discerning in 	<p>eptable behaviour; identify a range of ways to report concerns about content and contact.</p> <p>Circle Times Images Planning Mobile Phones Planning Keeping our identity private Planning</p> <p><i>Use of Technology</i></p> <ul style="list-style-type: none"> • understand computer networks including the internet; how they can provide multiple services, such as the world wide web; 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 <p>Connecting the</p>	<p>and ranked, and be discerning in evaluating digital content</p> <p>Web research via other subject focus Research List</p> <p><i>Digital Literacy</i></p> <ul style="list-style-type: none"> • 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 <p>Spreadsheets(5) Planning Databases(4) Planning 3D modelling(3) Planning Podcasting(3) Planning Animation(4) Planning Web Publishing(5) Planning</p>	<p>systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information</p> <p>Spreadsheets(5) Planning Databases(4) Planning 3D modelling(3) Planning Podcasting(3) Planning Animation(4) Planning Web Publishing(5) Planning</p> <p><i>Computer Science</i></p> <ul style="list-style-type: none"> • 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 and programs <p>Cycle 1 2014-2015 Only Smoking Car Game(2) Planning Dressing Up Game(2) Planning Maths Quiz(4) Planning Slug Trail Game(2) Planning</p>
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	<p>evaluating digital content</p> <p>Connecting the Internet Planning</p> <p>Tracing the Internet Packet Game (3) Linking WWW How web search works How a network works (3)</p>	<p>Internet Planning</p> <p>Tracing the Internet Packet Game (3) Linking WWW How web search works How a network works (3)</p>		<p>Jam Sandwich (Algorithm (bottom))(1) Planning</p> <p>Times Tables(3) Planning</p> <p>Clock(3)Planning</p> <p>Crab Maze(3) Planning</p> <p>Primary Games Maker (1 project)</p> <p>Cartesian Coordinates(1) Planning</p> <p>Toilet Fan(afternoon)* Exchange Sort Investigation(2) Planning</p> <p>Cycle 1 2016+</p> <p>Counting Machine(3) Planning</p> <p>Perimeter(2) Planning</p> <p>Primary Games Maker (1 project) (4) Planning</p>
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