

KNOWLEDGE



EYFS: Recognise, select & use a range of technology for different purposes

KS1: Programming, Digital Content, Searching & Evaluating, Online Safety

KS2: Programming, Networking and Collaboration, Searching & Evaluating, Presenting, Data, Online Safety

Computing CURRICULUM INTENT



SKILLS



Communicate ideas using a range of applications and devices

Collect, store and manipulate data effectively
Search for and evaluate digital information
Create and debug programs

Identify safe and unsafe online behaviour and know where to go for help

CULTURAL CAPITAL



In today's digital world, it is essential that children leave primary school as competent, confident, creative and responsible users of information and communication technology. By helping children become digitally literate, our computing curriculum supports their readiness for the modern workplace and the opportunities that lie ahead. The ability to analyse problems in computational terms, and the knowledge of how to write computer programs in order to solve such problems, will help equip children with the skills and creativity needed to understand and change the world.

EXPERIENCES



Global & National Events:

Safer Internet Day

50 Things to do:

Designer

Trips:

Science Oxford

Competitions:

ICT123 Computing Champions League

CHARACTER



Roots that Strengthen:

Branches that Reach:

Fruit that Flourishes:

IMPACT



We monitor and support the teaching through:

Developmental Drop Ins

CPD & training

We measure the impact on learning by:

Formative assessment of key questions

We record the impact through:

Target Tracker

Cycle A

Reception	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic theme	Houses and Homes	Fabulous Festivals	Transport and Travel	Once Upon a Time	Marvellous Minibeasts	(Think Big)
Computing Outcomes	ELG (End of Reception): Children at the expected level of development will:					

Cycle B

Reception	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Topic theme	Superheroes/Super Me/Super People	Time for Toys	Dinosaurs	Once upon a Time	5,4,3,2,1 Blast Off!	On the Farm
Computing Outcomes	ELG (End of Reception): Children at the expected level of development will:					

Computing Year 1 & 2 Cycle A	Term 1 Paddington	Term 2 Scientists and Inventors	Term 3 Tin Forest	Term 4 Grow, Grow, Grow	Term 5 Our Village in the Past	Term 6 Under the Sea
National Curriculum objectives	<p>To recognise common uses of information technology beyond school</p> <p>To 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>To recognise common uses of information technology beyond school</p> <p>To 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>To use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>To recognise common uses of information technology beyond school</p> <p>Create and debug simple programs</p>	<p>Use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>Recognise common uses of information technology beyond school</p>	<p>To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions</p> <p>To create and debug simple programs</p> <p>To use logical reasoning to predict the behaviour of simple programs</p>	<p>To use technology purposefully to create, organise, store, manipulate and retrieve digital content</p> <p>To recognise common uses of information technology beyond school</p> <p>To 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>
Progression of skills	<p>Introduction to Computing</p> <p>Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc)</p> <p>Begin to show an awareness that computers can be linked to share resources</p>	<p>Online safety</p> <p>Know and understand the four rules beyond words and explain why they are important</p> <p>Explain the four rules to someone else</p> <p>Present information to explain how to behave safely online</p>	<p>Animation</p> <p>Work with others or independently to contribute to a digital class resource which includes text, graphic and sound.</p> <p>Save, retrieve and edit their work.</p> <p>Create a simple animation to tell a story.</p>	<p>Big Science Event</p> <p>Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions.</p> <p>Enter information into a simple database or word processor and use it to answer questions.</p> <p>They save, retrieve and edit their work.</p>	<p>Scratch Junior Introduction</p> <p>Control a device, on and off screen, making predictions about the effect their programming will have.</p> <p>Children can plan ahead.</p>	<p>Searching online</p> <p>Explore information from a variety of sources (electronic, paper based, observations of the world around them, etc.).</p> <p>Show an awareness of different forms of information</p> <p>Children use a search engine to find specific relevant information to use in a presentation for a topic.</p> <p>Save and retrieve their work.</p>

Resources		https://123sow.co.uk/members/2016/01/13/key-stage-1-online-safety-introduction/ https://123sow.co.uk/members/2018/03/15/ks1-online-safety-experts/	https://123sow.co.uk/members/2016/01/26/key-stage-1-animation-challenge/		https://123sow.co.uk/members/2018/02/26/ks1-scratch-jnr-introduction/	https://123sow.co.uk/members/2019/06/25/ks1-internet-search/
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Computing Year 1 & 2 Cycle B	Term 1 When I grow up	Term 2 Explorers	Term 3 Great Fire of London	Term 4 The Little Gardener	Term 5 Chocolate	Term 6 Wild and Wonderful Creatures
National Curriculum objectives	To recognise common uses of information technology beyond school To 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	To recognise common uses of information technology beyond school To 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.	To use technology purposefully to create, organise, store, manipulate and retrieve digital content To recognise common uses of information technology beyond school	Use technology purposefully to create, organise, store, manipulate and retrieve digital content Recognise common uses of information technology beyond school	To use technology purposefully to create, organise, store, manipulate and retrieve digital content recognise common uses of information technology beyond school To use technology safely and respectfully, keeping personal information private	To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs
Progression of skills	Introduction to Computing Show an awareness of a range of inputs to a computer (IWB, mouse touch screen, microphone, keyboard, etc) Begin to show an awareness that computers can be linked to share resources	Online safety Know and understand the four rules beyond words and explain why they are important Explain the four rules to someone else Present information to explain how to behave safely online	Graphics Use a range of tools in a paint package/image manipulation software to create and modify a picture or to communicate an idea.	Big Science Event Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. Enter information into a simple database or word processor and use it to answer questions. They save, retrieve and edit their work.	e-book Work with others or independently and with support to contribute to a digital class resource which includes text, graphic and sound Save and retrieve and edit their work.	BeeBot Fun Challenge Control a device, on and off screen, making predictions about the effect their programming will have. Children can plan ahead.
Resources		https://123sow.co.uk/members/2016/01/13/key-stage-1-online-safety-introduction/	https://123sow.co.uk/members/2018/05/22/ks1-graphics/		https://123sow.co.uk/members/2016/01/13/key-stage-1-e-book-challenge/	https://123sow.co.uk/members/2016/10/18/key-stage-1-bee-bot-fun/

		https://123sow.co.uk/members/2018/03/15/ks1-online-safety-experts/				
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Computing Year 3 & 4 Cycle A	Term 1 Groovy Greeks	Term 2 The Fiery Earth	Term 3 Frozen Planet	Term 4 Anglo Saxons	Term 5 Egyptians	Term 6 Local Area Study
National Curriculum objectives	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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	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	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	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
Progression of skills	Online Safety Comic Understand what the rules are to keep you safe online Use software to present their ideas to explain some of the risks of being online and present the SMART rules in a fun way Explain why these changes in behaviour are needed in a non-frightening way using engaging and	Scratch Quiz Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen. Program a simple quiz to ask questions using an output and give feedback on input answers To use a range of outputs to give feedback to answers provided to questions	Stop-motion animation Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea Make a short film / animation from images (still and / or moving) that they have sourced, captured or created	Big Science Event Make simple use of a spreadsheet to store data and produce graphs. Children work as a class or group to create a data collection sheet and use it to setup a straight forward database to answer questions. Enter information and interrogate it (by searching, sorting, graphing etc).	Computer coding Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen. Engage in Logo based problem solving activities that require children to write procedures etc. and to predict, test and modify.	Networks, the Internet and searching Show an understanding of the school network and how it links computers to resources in school and beyond. Compare this with other networks they may encounter at home or in the wider world (e.g. banks) Perform a search using different search engines and check the results against

	appropriate images to support their key message	To ask more complex questions using randomisation for outputs and multiple choice inputs		Know how to enter simple formulae into a spreadsheet		each other, explaining why they might be different. Show an awareness of the need for accuracy in spelling and syntax to search effectively.
Resources	https://123sow.co.uk/members/2017/06/30/ks2-online-safety-comic/	https://123sow.co.uk/members/2018/01/05/ks2-scratch-quiz/	https://123sow.co.uk/members/2016/01/26/key-stage-2-animation-challenge/	https://123sow.co.uk/members/2017/10/11/ks2-spreadsheets/	https://code.org/student/elementary	https://123sow.co.uk/members/2017/10/30/ks2-networks-the-internet-and-searching/

Computing Year 3 & 4 Cycle B	Term 1 Planet Earth	Term 2 Flintstones	Term 3 Romans	Term 4 Europe	Term 5 Baghdad	Term 6 Rainforests
National Curriculum objectives	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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	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 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	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
Progression of skills	Online Safety – Introduction to the SMART rules Understand that there are rules to keep you safe online Understand some of the risks of being online and understand that the SMART rules are designed to suggest changes to behaviour intended to keep you safe online	Garage Band Create multiple track compositions that contain a variety of sounds. Keep a basic rhythm throughout adding layers of sound to create a musical ‘story’. Combine more complex chord progressions or sections to the music such as a verse, chorus and bridge section.	Scratch Animation Children are able to type a short sequence of instructions and to plan ahead when programming devices on and off screen. Apply repetition to your program by decomposing it into manageable chunks for programming Analyse your program and algorithm to discover any errors and debug your	Big Science Event Make simple use of a spreadsheet to store data and produce graphs. Children work as a class or group to create a data collection sheet and use it to setup a straight forward database to answer questions. Enter information and interrogate it (by searching, sorting, graphing etc).	Topic research and presentation Perform a search using different search engines and check the results against each other, explaining why they might be different. Show an awareness of the need for accuracy in spelling and syntax to search effectively.	Choose your own adventure Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on-screen presentations which include hyperlinks. Begin to show an awareness of the intended audience and seek feedback

	Explain what each of the SMART rules means and why they are important rules		program so it works as expected	Know how to enter simple formulae into a spreadsheet	Record and present information integrating a range of appropriate media combining text and graphics in printable form and sound and video for on-screen presentations which include hyperlinks. Begin to show an awareness of the intended audience and seek feed-back.	Manipulate digital images using a range of tools in appropriate software to convey a specific mood or idea.
Resources	https://123sow.co.uk/members/2016/04/06/key-stage-2-introducing-the-smart-rules/	https://123sow.co.uk/members/2016/04/06/key-stage-2-garageband-music-challenge/	https://123sow.co.uk/members/2017/07/19/ks2-scratch-animation/	https://123sow.co.uk/members/2017/10/11/ks2-spreadsheets/		https://123sow.co.uk/members/2016/01/26/key-stage-2-choose-adventure/

Computing Year 5 & 6 Cycle A	Term 1 Crime and Punishment	Term 2 World War II	Term 3 Is Britain still Great?	Term 4 River Deep, Mountains High!	Term 5 Amazing Mayans	Term 6 Lands End to John O’Groats
National Curriculum objectives	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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	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	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	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
Progression of skills	Online Safety – SMART podcast Understand what the rules are to keep you safe online Explain some of the risks of being online and present the SMART rules using audio to suggest changes to behaviour are needed to keep you safe online Combine a variety of audio features to enhance your message e.g. backing music and sound effects	Stop-motion animation Use images that they have sourced/ captured/ manipulated as part of a bigger project (eg presentation or document).	Networks, the Internet and searching Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school. Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication	Big Science Event Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if ..." questions and change variable in their model. Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results. Relate their use of spreadsheets to model	Networks, the Internet and Sharing Show an understanding of how filtering and monitoring tools affect their use of the school network and Internet and compare this with their experience of access outside school. Use collaborative tools and e-mail showing a sensitivity for this type of remote collaboration and communication	Scratch project Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose.

	Create and share more sophisticated podcasts and consider the effect that their podcasts will have on the audience.			<p>situations to the wider world.</p> <p>Children are able to identify their own opportunities for data logging and carry out their own experiments.</p> <p>They check and question results and are able to spot trends in data and identify when problems may have occurred.</p>		
Resources	https://123sow.co.uk/members/2016/04/06/key-stage-2-smart-rule-podcast/			https://123sow.co.uk/members/2017/10/11/ks2-spreadsheets/		

Computing Year 5 & 6 Cycle B	Term 1 Adventures in Space	Term 2 Blood, Bones and Body Bits	Term 3 Vikings and Saxons	Term 4 Shang Dynasty	Term 5 Natural Resources	Term 6 Think Global, Act Local
National Curriculum objectives	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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	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	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	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
Progression of skills	Online Safety Presentation Understand what the rules are to keep you safe online Use software to present their ideas to explain some of the risks of being online and present the SMART rules in a fun way Explain why these changes in behaviour are needed in a non-frightening way using engaging and appropriate images to support their key message	Scratch game Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose Program a controllable player sprite to collect objects	E-book Multimedia work shows restrained use of effects that help to convey meaning rather than impress. Create an eBook in a format to be read on a computer including text and images Include sounds as hot-spots or to narrate bits of the story or information and embedded video clips (either animation or video)	Big Science Event Set up and use their own spreadsheet, which contains formulae to investigate mathematical models. Ask "what if ..." questions and change variable in their model. Understand the need for accuracy when creating formulae and check regularly for mistakes, by questioning results. Relate their use of spreadsheets to model	Computer Coding Independently create sequences of commands to control devices in response to sensing (i.e. use inputs as well as outputs). Design, build, test, evaluate and modify the system; ensuring that it is fit for purpose.	Green Screen Create and share more sophisticated video and consider the effect that their video will have on the audience. Pupils use the basic techniques to create an informative green screen video. Pupils edit and enhance a number of green screen videos to create and publish information as a video.

				<p>situations to the wider world.</p> <p>Children are able to identify their own opportunities for data logging and carry out their own experiments.</p> <p>They check and question results and are able to spot trends in data and identify when problems may have occurred.</p>		
Resources	https://123sow.co.uk/members/2016/01/13/key-stage-2-online-safety-challenge/	https://123sow.co.uk/members/2016/03/02/key-stage-2-scratch-game-challenge/	https://123sow.co.uk/members/2016/01/13/key-stage-2-e-book-challenge/	https://123sow.co.uk/members/2017/10/11/ks2-spreadsheets/	https://code.org/student/elementary	https://123sow.co.uk/members/2018/09/04/ks2-green-screen-presentation/