Computing

National curriculum coverage — condensed

Introduction

Kapow Primary offers coverage of the KS1 and KS2 Computing curriculum and this document contains each end of key stage National curriculum statement and information about the units that will help pupils on their learning journey to meeting that statement by the end of Year 2 and Year 6.

For EYFS, the document shows the Early Learning Goals and Development Matters statements that each unit covers.
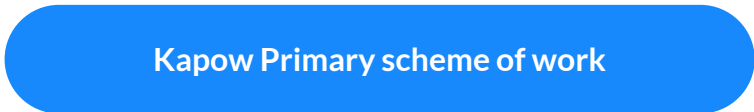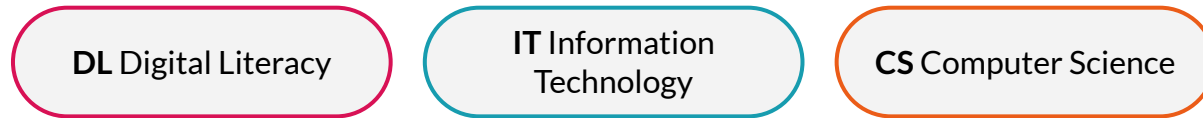
This version only includes the lessons and units in our Computing: Long-term plan — condensed and can be used to demonstrate that this reduced curriculum still meets the minimum requirements set out in the National curriculum. To go beyond the minimum requirements, we advise that you follow our full Computing: Long-term plan or find further opportunities during the school year (or via cross-curricular planning) to deepen and reinforce the objectives, lessons and units in the condensed scheme.

The final pages of the document show cross-curricular links between our condensed Computing scheme and other National curriculum subjects.
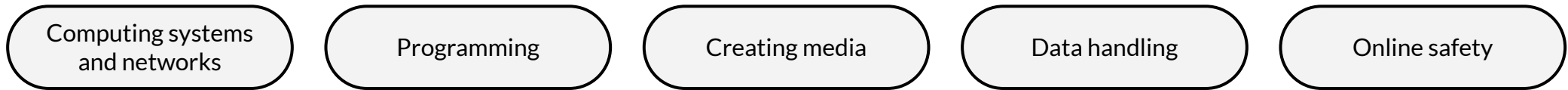
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How is the Computing scheme of work organised?

National Curriculum guidance

DL Digital Literacy **IT** Information Technology **CS** Computer Science

Kapow Primary scheme of work

Kapow Primary key areas

Computing systems and networks Programming Creating media Data handling Online safety

The 'Skills showcase' key area, features aspects from some or all of the five key areas above

Skills showcase
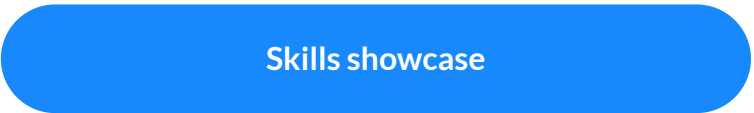
Early years outcomes in Kapow Primary's units

Early Years Foundation Stage Kapow Primary's units	Early years outcomes: Prime Areas **Development Matters 2021 statements** <mark>Early Learning Goals</mark>	Early years outcomes: Specific Areas **Development Matters 2021 statements** <mark>Early Learning Goals</mark>	Characteristics of effective learning
Computing systems and networks 1: Using a computer	**Physical Development** -Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	**Literacy** -Spell words by identifying the sounds and then writing the sounds with letter/s. -Re-read what they have written to check that it makes sense. **Mathematics** -Link the number symbol (numeral) with its cardinal number value.	✓ Playing and Exploring ✓ Active Learning
Programming 1: All about instructions	**Communication and Language** -Understand how to listen carefully and why listening is important. -Describe events in some detail. -Use talk to help work our problems and organise thinking and activities, and to explain how things work and why they might happen. **Personal, Social and Emotional Development** -<mark>ELG</mark>: Self-Regulation> Give focused attention to what the teacher says, responding appropriately even when engaged in activity, and show an ability to follow instructions involving several ideas or actions. -<mark>ELG</mark>: Managing Self> Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. -<mark>ELG</mark>: Building Relationships> Work and play cooperatively and take turns with others. **Physical Development** -Know and talk about the different factors that support their overall health and wellbeing. -Further develop the skills they need to manage the school day successfully.		✓ Active Learning ✓ Creating and Thinking Critically

National curriculum coverage— condensed

| Early Years Foundation Stage

Kapow Primary's units | Early years outcomes: Prime Areas
Development Matters 2021 statements
Early Learning Goals | Early years outcomes: Specific Areas
Development Matters 2021 statements
Early Learning Goals | Characteristics of effective learning |
|---|---|---|---|
| Computing systems and networks 2: Exploring hardware | **Communication and Language**
-Learn new vocabulary.
-Use new vocabulary throughout the day.
-Ask questions to find out more and to check they understand what has been said to them.
-Articulate their thoughts and ideas in well-formed sentences.
-Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.

Physical Development
-Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
-Confidently and safely use a range of large and small apparatus indoors and outside, alone and in a group. | **Understanding the World**
-Describe what they see, hear and feel whilst outside. | ✓ Playing and Exploring
✓ Active Learning |
| Data handling: Introduction to data | **Communication and Language**
-Articulate their thoughts and ideas in well-formed sentences.
-Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen.

-**ELG**: Listening, Attention and Understanding> Listen attentively and respond to what they hear with relevant questions, comments and actions when being read to and during whole class discussions and small group interactions.
-**ELG**: Listening, Attention and Understanding> Make comments about what they have heard and ask questions to clarify their understanding.
-**ELG**: Speaking> Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. | **Mathematics**
-Count objects, actions and sounds.
-Subitise.
-Count beyond 10.
-Compare numbers.
-Understand the 'one more than/ one less than' relationship between consecutive numbers.
-Continue, copy and create repeating patterns.
-Compare length, weight and capacity. | ✓ Playing and Exploring
✓ Active Learning
✓ Creating and Thinking Critically |

National Curriculum by Kapow Primary's themes and units

Key stage 1 - National curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Key stage 1 - **Year 1**				
		Improving mouse skills (3 lessons: 1-3 only)	**Algorithms unplugged** (4 lessons: 1, 2 , 4 and 5 only)	**Digital imagery (Option 1: Google) (Option 2: Microsoft Office 365)** (3 lessons: 1-3 only)	**Bee-Bot (Option 1: Bee-Bot) (Option 2: Virtual Bee-Bot)** (4 lessons: 1, 3, 4 and 5 only)	**Online safety Y1** (All 4 lessons)
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	CS		✔		✔	
Create and debug simple programs	CS		✔		✔	
Use logical reasoning to predict the behaviour of simple programs	CS		✔	✔	✔	
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	DL	✔		✔		
Recognise common uses of information technology beyond school	IT	✔		✔		✔
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	DL	✔				✔

National Curriculum by Kapow Primary's themes and units

Key stage 1 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Key stage 1 - **Year 2**				
		What is a computer? (3 lessons: 1, 2 and 5 only)	**Algorithms and debugging** (4 lessons: 1, 2, 4 and 5 only)	**International Space Station** (3 lessons: 1, 3 and 5 only)	**ScratchJr** (4 lessons: 1, 2, 4 and 5 only)	**Online safety Y2** (4 lessons: Teach all five by combining lessons 3 and 4)
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions	CS		✔		✔	
Create and debug simple programs	CS		✔		✔	
Use logical reasoning to predict the behaviour of simple programs	CS	✔	✔		✔	
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	DL	✔		✔	✔	✔
Recognise common uses of information technology beyond school	IT	✔				✔
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	DL					✔

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Lower key stage 2 - **Year 3**				
		Networks (3 lessons: 1, 3 and 5 only)	**Journey inside a computer** (3 lessons: 1, 2 and 5 only)	**Video trailers (Option 1: Using devices other than iPads) (Option 2: Using iPads)** (4 lessons: 1-4 only)	**Scratch** (4 lessons: 1, 2, 3 and 5 only)	**Online safety Y3** (All 4 lessons)
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	CS		✔	✔	✔	
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	CS		✔		✔	
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	CS		✔		✔	
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	DL IT	✔				✔

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Lower key stage 2 - **Year 3**				
		Networks (3 lessons: 1, 3 and 5 only)	**Journey inside a computer** (3 lessons: 1, 2 and 5 only)	**Video trailers (Option 1: Using devices other than iPads) (Option 2: Using iPads)** (4 lessons: 1-4 only)	**Scratch** (4 lessons: 1, 2, 3 and 5 only)	**Online safety Y3** (All 4 lessons)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	**DL** **IT**			✔		✔
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	**CS** **IT**	✔	✔	✔		
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	**DL**			✔		✔

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Lower key stage 2 - **Year 4**				
		Collaborative learning (Option 1: Google) (Option 2: Microsoft Office 365) (4 lessons: 1, 3, 4 and 5)	**Further coding with Scratch (Option 1: Google) (Option 2: Microsoft Office 365)** (3 lessons: 2-4 only)	**Investigating weather (Option 1: Google) (Option 2: Microsoft Office 365)** (3 lessons: 1, 3 and 4)	**Computational thinking** (4 lessons: 1-4 only)	**Online safety Y4** (4 lessons: 1, 2, 3 and 5)
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	CS		✔	✔	✔	
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	CS		✔	✔		
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	CS		✔		✔	
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	DL IT	✔				

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Lower key stage 2 - **Year 4**				
		Collaborative learning [(Option 1: Google)](#) [(Option 2: Microsoft Office 365)](#) (4 lessons: 1, 3, 4 and 5)	Further coding with Scratch [(Option 1: Google)](#) [(Option 2: Microsoft Office 365)](#) (3 lessons: 2-4 only)	Investigating weather [(Option 1: Google)](#) [(Option 2: Microsoft Office 365)](#) (3 lessons: 1, 3 and 4)	[Computational thinking](#) (4 lessons: 1-4 only)	Collaborative learning [(Option 1: Google)](#) [(Option 2: Microsoft Office 365)](#) (4 lessons: 1, 3, 4 and 5)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	**DL** **IT**			✔		
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	**CS** **IT**	✔		✔		
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	**DL**	✔				✔

National Curriculum by Kapow Primary's themes and units

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Upper key stage 2 - **Year 5**				
		Search engines (4 lessons: 1-4)	Mars Rover 1 (3 lessons: 1, 2 and 4)	Stop motion animation (Option 1: Stop Motion Studio) (Option 2: with cameras) (4 lessons: 1-4)	Programming music (Option 1: Sonic Pi) (Option 2: Scratch) (4 lessons: 1-4)	Online safety Y5 (3 lessons: 1, 4 and 5)
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	CS			✔	✔	
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	CS			✔	✔	
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	CS				✔	
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	DL IT		✔			✔

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Upper key stage 2 - **Year 5**				
		Search engines (4 lessons: 1-4)	**Mars Rover 1** (3 lessons: 1, 2 and 4)	**Stop motion animation** **(Option 1: Stop Motion Studio)** **(Option 2: with cameras)** (4 lessons: 1-4)	**Programming music** **(Option 1: Sonic Pi)** **(Option 2: Scratch)** (4 lessons: 1-4)	**Online safety Y5** (3 lessons: 1, 4 and 5)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	DL IT	✔	✔			
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	CS IT	✔			✔	
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	DL	✔				✔

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Upper key stage 2 - **Year 6**				
		Bletchley Park (3 lessons: 1-3)	**Big data 1** (4 lessons: 1, 3, 4 and 5)	**History of computers** (3 lessons: 3-5)	**Intro to Python** (4 lessons: 1-4)	**Online safety Y6** (4 lessons: 1, 2, 4 and 6)
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	CS	✔			✔	
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output	CS	✔			✔	
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	CS	✔				
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	DL IT		✔	✔		

National curriculum coverage — condensed

National Curriculum by Kapow Primary's themes and units

Key stage 2 - National Curriculum computing subject content:	Kapow Primary's computing strands	Kapow Primary topics Upper key stage 2 - Year 6				
		Bletchley Park (3 lessons: 1-3)	Big data 1 (4 lessons: 1, 3, 4 and 5)	History of computers (3 lessons: 3-5)	Intro to Python (4 lessons: 1-4)	Online safety Y6 (4 lessons: 1, 2, 4 and 6)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	DL IT	✔		✔		
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	CS IT	✔	✔	✔		
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact	DL	✔				✔

National curriculum subjects	Kapow Primary topics Key stage 1 - **Year 1**				
	Improving mouse skills (3 lessons: 1-3 only)	**Algorithms unplugged** (4 lessons: 1, 2 , 4 and 5 only)	**Digital imagery (Option 1: Google) (Option 2: Microsoft Office 365)** (3 lessons: 1-3 only)	**Programming Bee-bots (Option 1: Bee-Bot) (Option 2: Virtual Bee-Bot)** (4 lessons: 1, 3, 4 and 5 only)	**Online safety Y1** (All 4 lessons)
English	**Reading** - discussing key scenes from a story	**Writing -** writing algorithms (instructions), revising algorithms to make more precise. **Spoken language -** following instructions given	**Reading -** enjoying and discussing picture books, predicting what might happen next	**Spoken language -** giving and following verbal instructions accurately **Reading -** retelling a story with a floor robot	**Writing -** writing an online safety guide **Spoken language -** role=playing online situations
Maths	Rotating shapes and images, naming and drawing shapes	Drawing 2D shapes		Describing the direction of a Bee-Bot	
Art and design	Creating digital artwork, considering famous artwork, creating a self portrait	Creating a picture from shapes, describing position and movement	Taking and editing photographs creating a collage		Designing an animal mask, designing an online safety poster
Geography		Using compass directions and directional language when using maps		Using locational and directional language when programming a Bee-bot	
RSE/PSHE	Considering why we need passwords				Considering how we treat each other online and how online use affects emotions

National curriculum subjects	Kapow Primary topics Key stage 1 - **Year 2**				
	What is a computer? (3 lessons: 1, 2 and 5 only)	**Algorithms and debugging** (4 lessons: 1, 2, 4 and 5 only)	**ScratchJr** (4 lessons: 1, 2, 4 and 5 only)	**International Space Station** (3 lessons: 1, 3 and 5 only)	**Online safety Y2** (4 lessons: Teach all five by combining lessons 3 and 4)
English	**Spoken language -** building vocabulary around computers, role-playing examples of computers in the real-world.	**Spoken language -** discussing with a partner how a game works, role-playing a game, giving and following verbal instructions **Writing -** writing instructions and editing to improve	**Spoken language -** discussing and predicting how software works **Reading -** retelling the Three little pigs in an animation		
Maths			Describing position and movement	Reading temperatures on a thermometer, interpreting and comparing data	
Science				Knowing the basic needs of plants and animals and the importance of exercise.	
Geography		Looking at maps of the UK and identifying features			
RSE/PSHE					Knowing you need to give/receive permission for online sharing

Cross-curricular links - Year 3

National curriculum subjects	Kapow Primary topics Key stage 2 - **Year 3**				
	Networks (3 lessons: 1, 3 and 5 only)	**Journey inside a computer** (3 lessons: 1, 2 and 5 only)	**Video trailers** **(Option 1: Using devices other than iPads)** **(Option 2: Using iPads)** (4 lessons: 1-4 only)	**Scratch** (4 lessons: 1, 2, 3 and 5 only)	**Online safety Y3** (All 4 lessons)
English	**Spoken language -** Building vocabulary around computer networks		**Reading -** appreciating books by creating a book trailer **Writing -** planning text for their trailers	**Spoken language -** discussing how software works when tinkering	**Reading -** considering the language used in online adverts
D & T		Developing an understanding of the workings of technology			
Geography	Devising a map of the school's network and showing a website's journey, looking at a submarine cable map				
History	Learning how the internet has developed				
Music				Using loops to create music	
RSE/PSHE				Considering copyright	Knowing the internet can affect mood, knowing the rules of social media

National curriculum subjects	Kapow Primary topics Key stage 2 - **Year 4**				
	Collaborative learning (Option 1: Google) (Option 2: Microsoft Office 365) (4 lessons: 1, 3, 4 and 5)	**Further coding with Scratch** (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 2-4 only)	**Investigating weather** (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 1, 3 and 4)	**Computational thinking** (4 lessons: 1-4 only)	**Online safety Y4** (4 lessons: 1, 2, 3 and 5)
English		**Spoken language -** discussing while tinkering with code			
Maths	Interpreting and presenting data			Solving maths problems, drawing shapes, considering angles	
Science			Learning about the water cycle and changes in state, observing and measuring weather		
Geography			Understanding climate and weather, considering extreme weather and how it affects people		
PE				Breaking down a dance to learn it and practise decomposition	
RSE/PSHE	Recognising respectful ways to interact online				Considering healthy levels of screen time

National curriculum subjects	Kapow Primary topics Key stage 2 - **Year 5**				
	Search engines (4 lessons: 1-4)	**Mars Rover 1** (3 lessons: 1, 2 and 4)	**Stop motion animation (Option 1: Stop Motion Studio) (Option 2: with cameras)** (4 lessons: 1-4)	**Programming music (Option 1: Sonic Pi) (Option 2: Scratch)** (4 lessons: 1-4)	**Online safety Y5** (3 lessons: 1, 4 and 5)
English				**Reading -** identifying themes in books to create a soundtrack	
Maths		Converting units of measure to solve problems, carrying out binary calculations			
Science		Learning about Mars and space exploration, learning about how sensors work			
Art & design	Designing a poster		Creating an animation toy, designing a character		Designing a poster about app permissions
History	Researching about explorers from the past				
Music				Composing music using programming software, including loops, considering the inter-related dimensions of music, evaluating compositions	
RSE/PSHE	Knowing how information is shared online, critically consider sources of information				Learning about cyber-bullying and its impact, understanding the effect of technology on health

Cross-curricular links - Year 6

National curriculum subjects	Kapow Primary topics Key stage 2 - **Year 6**				
	Bletchley Park (3 lessons: 1-3)	**Big data 1** (4 lessons: 1, 3, 4 and 5)	**Creating media: History of computers** (3 lessons: 3-5)	**Intro to Python** (4 lessons: 1-4)	**Online safety Y6** (4 lessons: 1, 2, 4 and 6)
English	**Writing** - Creating an information text site about Bletchley park				
Maths	Solving problems involving codes	Representing data in different graphs, interpreting data in tables to solve problems			
Art and design					
History	Learning about how codes and codebreaking were useful during World War II		Learning about the first computers and creating a timeline		
RSE/PSHE	Learning the importance of a strong password to deter brute force hacking	Learning about the importance of keeping personal information (pin number) safe			Reflecting on how online activity makes them feel, considering the risks of sharing online and leaving a digital footprint

This page shows recent updates to this document.

Date	Update
30.08.22	This version was created as a separate document to accompany our Computing: Long-term plan — condensed.
11.04.23	Name of document changed. Broken links fixed.
04.09.23	Links updated to reflect updated units.