Computing

Long-term plan

Mixed-age

This document may be useful to you if your school has mixed-age classes.
It organises our units into a two-year rolling cycle which ensures full coverage of the National Curriculum objectives.

Along with our suggestions for differentiation included in each lesson plan, this document will enable you to support progress between year groups, despite the challenges of mixed-age teaching.

This document was last updated on 28.03.25. The most up-to-date version can be found here.

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How does Kapow Primary help our school to meet the statutory guidance for Computing?

Our scheme of work fulfils the statutory requirements for computing outlined in the **National Curriculum (2014)** and, when used in conjunction with our RSE & PSHE scheme, also covers the government's **Education for a Connected World -2020 edition** framework (see our [Education for a Connected World framework mapping])

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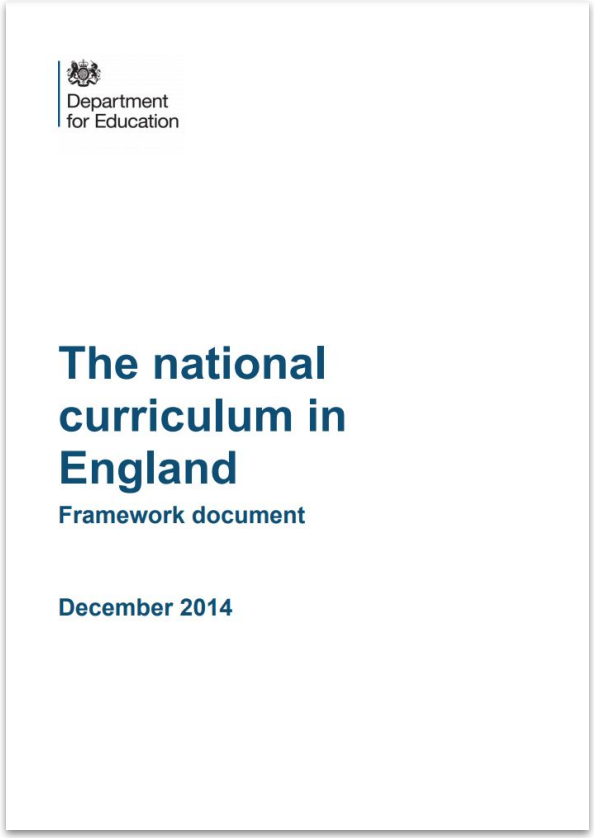

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How does Kapow Primary's scheme of work align with the National Curriculum?

Our scheme of work fulfils the statutory requirements outlined in the **National Curriculum (2014)**. The National Curriculum Programme of Study for Computing aims to ensure that all pupils:

We have identified these three strands which run throughout our scheme of work:

- ★ 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.

→ Computer science

- ★ Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.

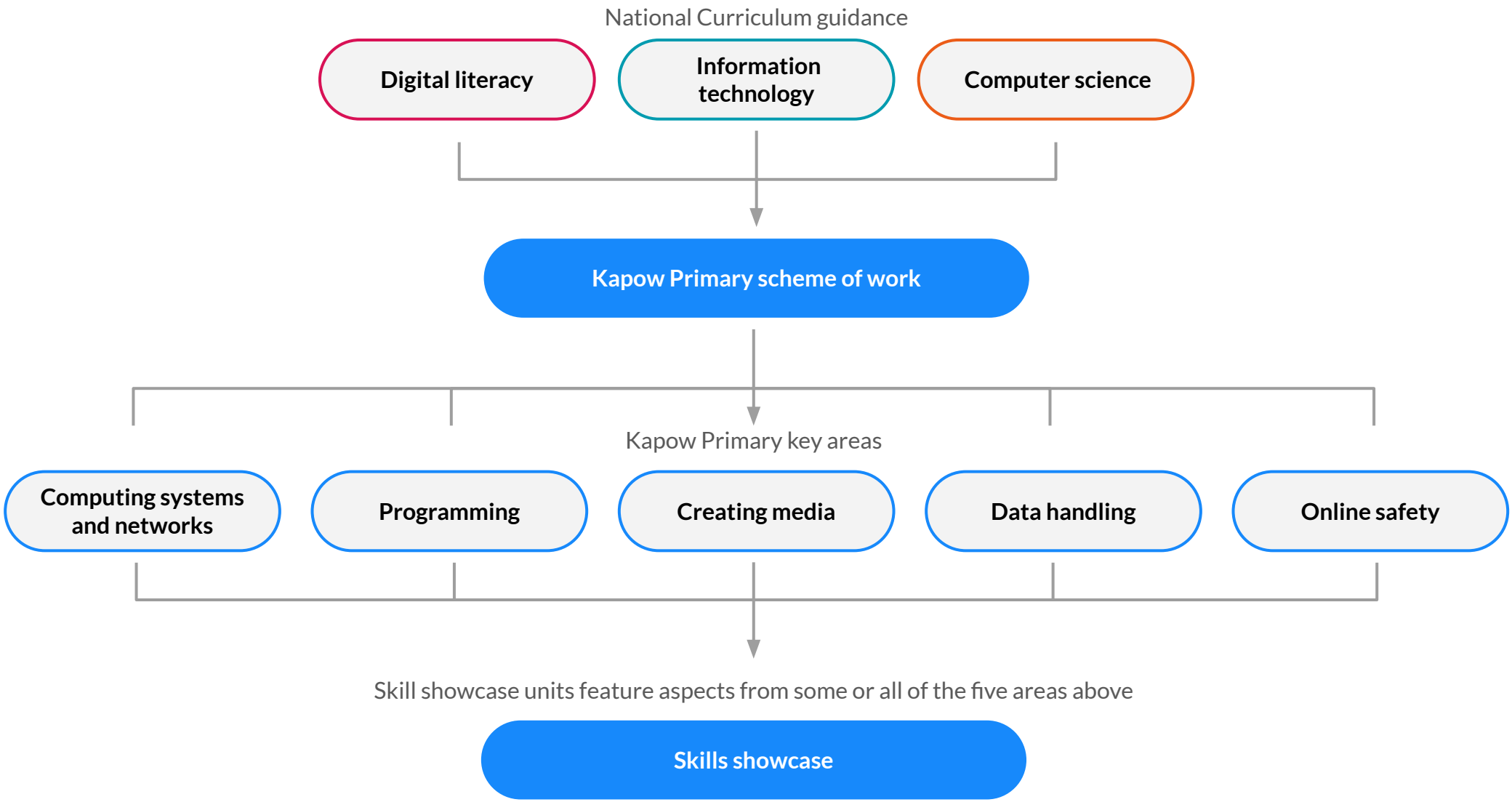
→ Information technology

- ★ Are responsible, competent, confident and creative users of information and communication technology.

→ Digital literacy

Our National curriculum mapping document shows which of our units cover each of the National Curriculum attainment targets as well as each of the three strands. Each lesson plan references the relevant National Curriculum objectives, along with cross-curricular links to any other subjects.

How is the Computing scheme of work organised?



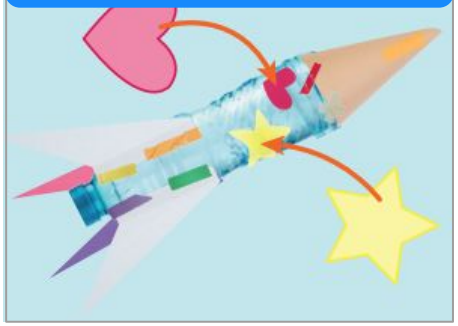
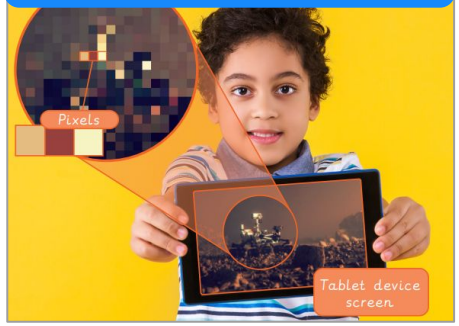
Key areas

We have categorised our lessons into the five key areas below, which we return to in each year group making it clear to see prior and future learning for your pupils and how what you are teaching fits into their wider learning journey.

Computing systems and networks	Programming	Creating media	Data handling	Online safety
Identifying hardware and using software, while exploring how computers communicate and connect to one another.	Understanding that a computer operates on algorithms, and learning how to write, adapt and debug code to instruct a computer to perform set tasks.	Learning how to use various devices — record, capture and edit content such as videos, music, pictures and photographs.	Ensuring that information is collected, recorded, stored, presented and analysed in a manner that is useful and can help to solve problems.	Understanding the benefits and risks of being online — how to remain safe, keep personal information secure and recognising when to seek help in difficult situations.

Skills showcase units

There are four units entitled Skills showcase. These units give children the chance to combine and apply skills and knowledge gained, from a range of the five key areas above, to produce a specific outcome.

Y1 - Rocket to the moon	Y4 - HTML	Y5 - Mars Rover 2	Y6 - Inventing a product
	Heading Heading 2 Heading 3 Heading 4 Heading 5 Heading 6		

Oracy in Computing

‘Oracy is the ability to speak eloquently, to articulate ideas and thoughts, to influence through talking, to collaborate with peers and to express views confidently and appropriately.

Oracy refers both to the development of speaking and listening skills, and the effective use of spoken language in teaching and learning. It is to speech what literacy is to reading and writing, and numeracy is to Maths.’

Speak for Change: Final report and recommendations from the Oracy All-Party Parliamentary Group Inquiry.

Learning *through* talk

At Kapow Primary, we believe it's crucial to provide pupils with opportunities for exploratory talk during their learning. This involves thinking aloud, questioning, discussing, and collaboratively building ideas.

Learning *to* talk

Similarly, developing oracy skills is essential for pupils to express and articulate themselves effectively across various contexts and settings, including formal ones like public speaking, debates, and interviews.

Through our Computing curriculum, pupils have opportunities to develop their oracy skills by:

- Communicating and solving problems collaboratively in groups or pairs.
- Building on the ideas of others and using discussions to plan programming projects.
- Articulating their thoughts, processes and reasoning (e.g. when debugging).
- Explaining and justifying their decisions during problem-solving tasks.
- Presenting their final outcomes to an audience, enhancing their public speaking skills.
- Evaluating the final outcomes of peers’ work.

A spiral curriculum

Kapow Primary's Computing scheme of work has been designed as a spiral curriculum with the following key principles in mind:

- ✓ **Cyclical**: Pupils revisit the five key areas throughout KS1 and KS2.
- ✓ **Increasing depth**: Each time a key area is revisited, it is covered with greater complexity.
- ✓ **Prior knowledge**: Upon returning to each key area, prior knowledge is utilised so pupils can build on previous foundations, rather than starting again.

Is there any flexibility in the Kapow Primary Computing scheme?

Our Computing scheme of work is organised into units.

Within each unit, lessons must be taught in order as they build upon one another.

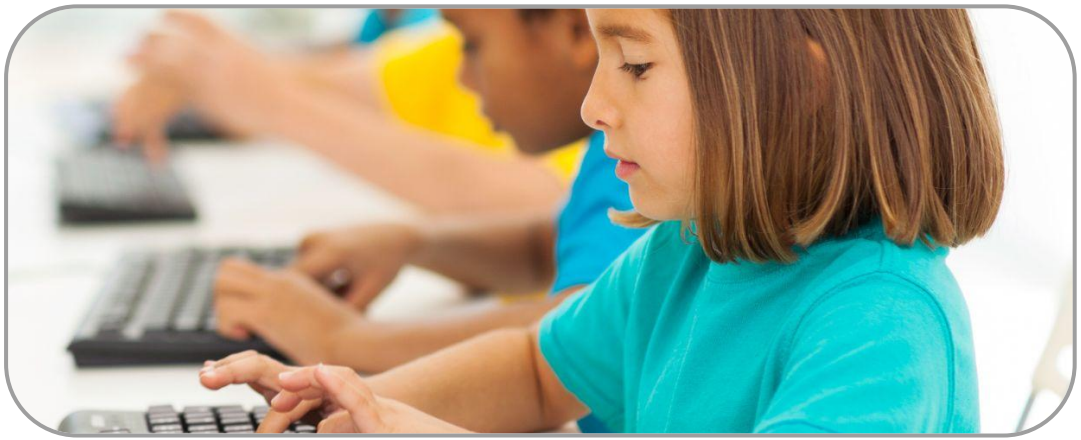
Across a single year group, units themselves do not need to be taught in the suggested order, with the exception of the numbered units which should be taught in the correct order (e.g. **Programming 1** before **Programming 2**). We would also suggest that the **Autumn 1** unit is taught first each year where possible.

The flexibility in the order the units can be taught, allows schools to adapt the planning to suit their school and to make use of cross-curricular links available.

What about online safety?

Recognising the increasing importance of this key area, we have created an online safety unit for each year group.

You may wish to teach this unit in the same way as the other units, on a dedicated Online Safety Day (for example, on Safer Internet Day in February each year) or spread throughout the year. See Guidance: How to fit in our Online safety units when considering the best option for your school.



Computing in EYFS

Our EYFS lessons are a natural precursor to our Year 1 Computing plans. They are designed especially for the Reception classroom and are play-based, hands-on and fun!

Please read the teacher guidance for:

✓ Supporting a child-led project using technology

and

✓ Computing through continuous provision

Whilst the technology strand is no longer a specific area in the new EYFS framework (2021), having the opportunity to develop computing skills at an early age can foster interest and confidence in technology and give pupils an advantage going into KS1.

Our EYFS units focus on the same key areas and link to Primary and Specific Areas of the ***EYFS framework 2021*** and ***Development Matters Guidance*** as detailed on individual lesson plans and on our National curriculum mapping document.

Guidance: How to fit in our Online safety units

	Organisation	Considerations
Option 1	Teach each of our units as shown on the suggested long-term plan. Hold an online safety day at some point during the year, where children are 'off-timetable' and cover the whole of the Online safety unit on this day. Many schools may choose to do this on Safer Internet Day which falls in February each year.	• Timetabling of computing equipment on the online safety day. • What will happen if a child is away on this day? • Will pupils retain the online safety learning in their long-term memory?
Option 2	Teach each of our units as shown in the suggested Long term plan. As each half term is usually longer than the five weeks of lessons we have provided, you should have some 'spare' Computing lessons. Some or all of these could be used to teach one lesson from the Online safety unit.	• Depending on how the holidays fall, you may still have some 'spare' lessons within a half-term and some half-terms with too few lessons. • You may need to briefly recap learning from the previous online safety lesson (although this is referred to in our planning)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 **Option 2 example:**	Improving mouse skills +Online safety Lesson 1	Algorithms unplugged +Online safety Lesson 2	Rocket to the moon + Online safety Lesson 3	Programming Bee-bots Option 1: Bee-bots Option 2: Virtual Bee-bots + Online safety Lesson 4	Digital imagery	Introduction to data

	Organisation	Considerations
Option 3	Teach the units in the order they are shown in our suggested long-term plan. When you have finished a unit move straight onto the next unit, rather than starting a new unit after each school holiday. The example below assumes six Computing lessons per term.	• Will children/ teachers be too tired to start a new unit at the end of a long half-term? • Will this have implications for termly overviews sent home to parents? • How will this affect assessment data? • Will this make it more difficult for the subject leader to monitor Computing?

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1 **Option 3 example:**	Improving mouse skills (5 lessons) Algorithms unplugged (1 lesson)	Algorithms unplugged (4 lessons) Rocket to the moon (2 lessons)	Rocket to the moon (3 lessons) Programming Bee-Bots (3 lessons)	Programming Bee-Bots (2 lessons) Digital imagery (4 lessons)	Digital imagery (1 lesson) Introduction to data (5 lessons)	Online safety Y1 (4 lessons)

Short of curriculum time?

At Kapow Primary, we understand that curriculum time is always tight in primary schools.

We have created a Condensed curriculum version of our Long term plan to help those schools who want to ensure coverage of the National Curriculum, without dedicating an hour a week to Computing.

Our Condensed curriculum long term plan abstracts units which cover key skills and knowledge in only 20 lessons.

The selected lessons ensure that there is balanced coverage of our five key areas of Computing, as well as one Skills showcase unit, to give pupils an opportunity to combine and apply skills from different units.

This version of our Long term plan could be used if you are teaching Computing in a two-week, half termly cycle or are block teaching foundation subjects. It could also be used to relieve pressure on teachers and pupils in terms of the amount of curriculum content.

Other useful documentation:

There are a number of key documents that can support you in planning and delivery of the Kapow Primary **Computing** scheme. Visit the Subject planning page for more.

✓ National curriculum coverage documents:

- Shows which of the National curriculum attainment targets are covered by each unit.

✓ Progression of skills documents:

- Shows how understanding and application of key concepts and skills builds year on year.

✓ Knowledge organisers - one per unit:

- One page overview of the key knowledge and vocabulary from a unit to support pupils' learning.

✓ Required hardware and software:

- Explains which software each of the commonly used devices require.

✓ Intent, Implementation, Impact statement

Cycle A				Cycle B		
Year 1/2	Usual curriculum year	Key area		Year 1/2	Usual curriculum year	Key area
Improving mouse skills	Year 1	Computing systems and networks	Autumn 1	**Bee-bots** Option 1: Bee-Bots Option 2: Virtual Bee-bots	Year 1	Programming
Algorithms unplugged	Year 1	Programming	Autumn 2	Digital imagery	Year 1	Creating media
Rocket to the moon	Year 1	Skills showcase	Spring 1	Introduction to data	Year 1	Data handling
What is a computer?	Year 2	Computing systems and networks	Spring 2	**Introduction to block coding** Option 1: MakeCode Option 2: ScratchJr	Year 2	Programming
Algorithms and debugging	Year 2	Programming	Summer 1	**Stop motion** Option 1: Using tablets Option 2: Using	Year 2	Creating media
Word processing	Year 2	Computing systems and networks	Summer 2	International space station	Year 2	Data handling
Year 1			Online safety	Year 2		

Suggested long-term plan: Computing (LKS2 Mixed-age)

Cycle A				Cycle B		
Year 3/4	Usual curriculum year	Key area		Year 3/4	Usual curriculum year	Key area
Emailing Option 1: Google Option 2: Microsoft Office 365	Year 3	Computing systems and networks	**Autumn 1**	Networks and the internet	Year 3	Computing systems and networks
Programming: Scratch	Year 3	Programming	**Autumn 2**	Comparison cards databases	Year 3	Data handling
Video trailers Option 1: Using devices other than iPads , Option 2: Using iPads	Year 3	Creating media	**Spring 1**	Journey inside a computer	Year 3	Computing systems and networks
Website design Option 1: Google Option 2: Microsoft Office 365	Year 4	Creating media	**Spring 2**	**Collaborative Learning** Option 1: Google Option 2: Microsoft Office 365	Year 4	Computing systems and networks
Further coding with Scratch	Year 4	Programming	**Summer 1**	Investigating weather	Year 4	Data handling
Computational thinking Option 1: *New* Computational thinking Option 2: Computational thinking	Year 4	Programming	**Summer 2**	HTML	Year 4	Skills showcase
Year 3			**Online safety**	Year 4		

Cycle A				Cycle B		
Year 5/6	Usual curriculum year	Key area		Year 5/6	Usual curriculum year	Key area
Micro:bit	Year 5	Programming	Autumn 1	Music Option 1: *New* Programming: Music Option 2: Programming: Music	Year 5	Programming
Mars Rover 1	Year 5	Data handling	Autumn 2	**Stop motion animation** Option 1: Stop motion studio Option 2: Using cameras	Year 5	Creating media
Mars Rover 2	Year 5	Skills showcase	Spring 1	Search engines	Year 5	Computing systems and networks
Bletchley Park and the history of computers	Year 6	Computing systems and networks	Spring 2	Big data 1	Year 6	Data handling
Exploring AI	Year 6	Computing systems and networks	Summer 1	Big data 2	Year 6	Data handling
Inventing a product	Year 6	Skills showcase	Summer 2	Introduction To Python	Year 6	Programming
Year 5			Online safety	Year 6		

Version history

This page shows recent updates to this document.

Date	Update
04.09.23	Updated links to reflect refreshed units on the website.
01.02.24	Updated links to reflect refreshed units on the website.
30.04.24	Updated links to reflect refreshed units on the website.
28.06.24	Updated content to reflect refreshed units on the website.
10.07.24	Added a page about oracy in Computing (p. 7).
20.08.24	Updated content to reflect refreshed units on the website.
25.09.24	Updated to add the new MakeCode unit for Year 2.
04.10.24	Updated to add in the new Exploring AI unit for Year 6.
25.10.24	Updated links.
21.11.24	Change the wording of Year 2 Programming 2 to include Introduction to block coding.
28.03.25	Updated to add links to newly published units.