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**Computing curriculum overview**

**Kapow Primary offers full coverage of the KS1 and KS2 Computing curriculum and we have categorised our content into three areas:**

## Digital Literacy and Online Safety Computational Thinking Computers and Hardware

**DL**

**CT**

**National Curriculum by Kapow Primary’s themes and topics**

**Key stage 1 - National Curriculum computing subject content**

Pupils should be taught to:

**Kapow Primary’s computing themes**

**Kapow Primary’s topics**

Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

Y1 > [Programming: Bee-Bots](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/programming-beebot/), [Algorithms unplugged](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/algorithms-unplugged/) Y2 > [What is a computer?](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/what-is-a-computer/), [Programming: ScratchJr](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/programming-scratch-jr/), [Algorithms and debugging](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/), [International Space](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/international-space-station/) [Station](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/international-space-station/)

Create and debug simple programs

Y1 > [Programming: Bee-Bots](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/programming-beebot/), [Algorithms unplugged](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/algorithms-unplugged/) Y2 > [Programming: ScratchJr](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/programming-scratch-jr/), [Algorithms and](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/) [debugging](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/)

Use logical reasoning to predict the behaviour of simple programs

Y1 > [Programming: Bee-Bots](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/programming-beebot/), [Digital imagery](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/) Y2 > [Programming: ScratchJr](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/programming-scratch-jr/), [Algorithms and](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/) [debugging](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/)

Use technology purposefully to create, organise, store, manipulate and retrieve digital content

Y1 > [Getting started](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/getting-started/), [Digital imagery](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/), [Introduction to data](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/introduction-to-data/), [Rocket to the moon](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/rocket-to-the-moon/)

Y2 > [Word processing](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/word-processing/), [Programming: ScratchJr](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/programming-scratch-jr/), [International Space Station](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/international-space-station/), [Stop motion](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/stop-motion/)

Recognise common uses of information technology beyond school

Y1 > [Getting started](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/getting-started/), [Digital imagery](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/), [Introduction to data](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/introduction-to-data/) Y2 > [What is a computer?](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/what-is-a-computer/), [Stop motion](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/stop-motion/)

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

Y1 > [Getting started](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/getting-started/), [Digital imagery](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/) Y2 > [Word processing](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/word-processing/)

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**Key stage 2 - National Curriculum computing subject content**

Pupils should be taught to:

**Kapow Primary’s computing themes**

**Kapow Primary’s topics**

Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

Y3 > [Journey inside a computer](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/journey-inside-a-computer/), [Programming: Scratch](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/programming-scratch/) Y4 > [HTML](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/html/), [Computational thinking](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/computational-thinking/)

Y5 > [Micro:bit](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/), [Sonic Pi](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/sonic-pi/)

Y6 > [Intro to Python](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/intro-to-python/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/)

Use sequence, selection, and repetition in programs; work with variables and various forms of input and output

Y3 > [Programming: Scratch](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/programming-scratch/)

Y4 > [HTML](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/html/), [Investigating weather](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/investigating-weather/), [Computational thinking](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/computational-thinking/) Y5 > [Micro:bit](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/), [Sonic Pi](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/sonic-pi/)

Y6 > [Intro to Python](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/intro-to-python/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/)

Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

Y3 > [Journey inside a computer](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/journey-inside-a-computer/), [Programming: Scratch](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/programming-scratch/) Y4 > [HTML](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/html/), [Computational thinking](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/computational-thinking/)

Y5 > [Micro:bit](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/), [Sonic Pi](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/sonic-pi/)

Y6 > [Intro to Python](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/intro-to-python/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/)

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

Y3 > [Journey inside a computer](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/journey-inside-a-computer/), [Emailing](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/emailing/), [Networks](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/networks/) Y4 > [Collaborative learning](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/collaborative-learning/), [The internet](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/the-internet/)

Y5 > [Micro:bit](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/), [Search engines](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/search-engines/), [Mars Rover 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/mars-rover-1/)

Y6 > [Bletchley Park 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/bletchley-park-1/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/), [Big Data 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/big-data-1/)

Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

Y3 > [Digital literacy](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/digital-literacy/) Y4 > [The internet](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/the-internet/) Y5 > [Search engines](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/search-engines/)

Y6 > [Bletchley Park 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/bletchley-park-1/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/)

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**Key stage 2 - National Curriculum computing subject content**

Pupils should be taught to:

**Kapow Primary’s computing themes**

**Kapow Primary’s topics**

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

Y3 > [Emailing](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/emailing/), [Top trumps databases](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/top-trumps-databases/), [Digital literacy](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/digital-literacy/)

Y4 > [Collaborative learning](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/collaborative-learning/), [Website design](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/website-design/), [Investigating](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/investigating-weather/) [weather](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/investigating-weather/)

Y5 > [Online Safety](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/online-safety/), [Micro:bit](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/), [Sonic Pi](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/sonic-pi/), [Mars Rover 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/mars-rover-1/) Y6 > [Bletchley Park 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/bletchley-park-1/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/), [Big Data 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/big-data-1/)

Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Y3 > [Emailing](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/emailing/)

Y4 > [Website design](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/website-design/), [HTML](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/html/), [Investigating weather](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/investigating-weather/) Y5 > [Online Safety](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/online-safety/), [Search engines](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/search-engines/)

Y6 > [Bletchley Park 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/bletchley-park-1/), [Skills showcase](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/), [Big Data 1](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/big-data-1/)

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**Overview of Kapow Primary’s topics by year**

**Year 1**

**Getting started**

(5 lessons)

Introducing children to logging in and using technology for a purpose, including creatin art

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/getting-started/)

**Programming:**

**Bee-Bots**

(5 lessons)

Using Bee-Bots to navigate an area and constructing simple algorithms, through the story of The Three Little Pigs

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/programming-beebot/)

**Algorithms unplugged**

(5 lessons)

Learning how computers handle information by exploring ‘unplugged’ algorithms- completing tasks away from the computer

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/algorithms-unplugged/)

**Digital imagery**

(5 lessons)

Taking and manipulating digital photographs, including adding images found via a search engine

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/digital-imagery/)

**Introduction to data**

(5 lessons)

Learning about what data is and how it can be represented and using these skills to show the findings of a minibeast hunt

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/introduction-to-data/)

**Rocket to the moon**

(5 lessons)

Appreciating the value of computers, understanding that they helped us get to the moon

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-1/rocket-to-the-moon/)

Recognising common uses of information technology. Logging in and saving work on their own account.

Knowing what to do if they have concerns about content or contact online. Understanding of how to create digital art using an online paint tool.

Learning to locate where keys are on the keyboard. Developing basic mouse skills.

Learning how to explore and tinker with hardware to find out how it works. Constructing a series of instructions into a simple algorithm.

Applying computing concepts to real world situation in an unplugged activity.

Understanding how to create algorithms.

Learning that computers need information to be presented in a simple and clear way.

Understanding how to break a computational thinking problem into smaller parts in order to solve it.

Using technology purposefully to create, organise, store, manipulate and retrieve digital content.

Knowing what to do if they have concerns about con- tent or contact online.

Using logical reasoning to predict the behaviour of simple programs.

Using cameras or tablets to take photos.

Using technology purposefully to create, organise, store, manipulate and retrieve digital content.

Selecting software appropriately.

Recognising uses of technology beyond school.

Using technology purposefully to

create, organise, store, manipulate and retrieve digital content.

Selecting software ap- propriately.

## Cross curricular links

Art & Design Maths

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English: Reading

5

Maths Science

Science D&T Maths History

# Overview of Kapow Primary’s topics by year

## Year 2

**What is a computer?**

(5 lessons)

Children explore

exactly what a computer is, identifying and learning how inputs and outputs work, how computers are used in the wider world and designing their own computerised invention [**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/what-is-a-computer/)

**Word processing**

(5 lessons)

Using their developing word processing skills, pupils write simple messages to friends and learn why we must be careful about who we talk to online

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/word-processing/)

**Programming:**

**ScratchJr**

(5 lessons)

Using the app ‘ScratchJr’, pupils programme a familiar story and an animation of an animal, make their

own musical instruments and follow an algorithm to record a joke

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/programming-scratch-jr/)

**Algorithms and debugging**

(5 lessons)

Identifying problems with code using both ‘unplugged’ and ‘plugged’ systems to diagnose and correct errors in an algorithm- a process known as ‘debugging’

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/algorithms-and-debugging/)

**International Space Station**

(5 lessons)

Building on their understanding of how computers sense the world around us, pupils learn how data is collect- ed, used and displayed to keep astronauts safe onboard the ISS

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/international-space-station/)

**Stop motion**

(5 lessons)

Pupils create simple animations, storyboarding their ideas then decomposing it into small parts of action to be captured using Stop Motion

Animation Software

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/key-stage-1/year-2/stop-motion/)

Learning about inputs and outputs and how they are used in algorithms.

Understanding what a computer is and the role of individual

components.

Using word processing software to type and reformat text.

Understanding the importance of staying safe online.

Creating and debugging simple programs.

Using logical reasoning to predict the behaviour of simple programs.

Understanding what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

Using technology purposefully to create, organise, store, manipulate and retrieve digital content.

Creating and debugging simple programs.

Using logical reasoning to predict the behaviour of simple programs.

Understanding what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.

Using technology to create and label images and to put data into a spreadsheet.

Consider inputs and outputs to understand how sensors work.

Using technology purposefully to create, organise, store, manipulate and retrieve digital content.

Understanding how to use tablets or computers to take photos.

## Cross curricular links

D&T Science

PSHE

Science

English

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**Overview of Kapow Primary’s topics by year**

**Year 3**

**Emailing**

(5 lessons)

Pupils learn how to send emails, including attachments and how to be responsible digital citizens

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/emailing/)

**Journey inside a computer**

(5 lessons)

Children learn about the different parts of a computer through

role-play and develop their understanding of how they follow instructions

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/journey-inside-a-computer/)

**Top trumps databases**

(5 lessons**)**

Developing their understanding of data and databases, children play with and create their own Top Trumps cards, learning how to interpret information by ordering and filtering

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/top-trumps-databases/)

**Digital literacy**

(5 lessons)

Developing their video skills, pupils create a book trailer, storyboarding their trailers before then filming and editing their videos, adding effects such as transitions, music, voice and text [**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/digital-literacy/)

**Programming: Scratch**

(5 lessons)

Using Scratch, with its block-based approach to coding, pupils learn to tell stories and create simple games

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/programming-scratch/)

**Networks**

(5 lessons)

To understand how computers communicate, children learn about networks and how they are used to share information

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-3/networks/)

Learn about cyberbullying and fake emails.

Understanding the purpose of emails.

Understanding what different components of a computer do.

Understanding that pro- grams execute by following precise and unambiguous instructions.

Using technology purposefully to create, organise, store, manipulate and retrieve data.

Using technology purposefully to create, organise, store, manipulate and retrieve digital content, including searching for relevant information.

Using logical reasoning to explain how simple algorithms work.

Designing, writing and debugging programs that accomplish specific goals, including controlling or simulating physical systems. Solving problems by decomposing them into smaller parts.

Using sequence, selection, and repetition in programs. Working with variables and various forms of input and output.

Identifying network components and how data is transferred

## Cross curricular links

English

Maths

English

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**Overview of Kapow Primary’s topics by year**

**Year 4**

**Collaborative learning**

(5 lessons)

Learning to work collaboratively in a responsible way using tools including Google Docs and Sheets

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/collaborative-learning/)

**The internet**

(5 lessons)

We use the Internet every single day, but 30 years ago, it didn’t exist. In this topic, pupils learn how data is transferred around the world using the world wide web

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/the-internet/)

**Website design**

(5 lessons)

Pupils design and create their own websites, considering

content and style, as well as understanding the importance of working collaboratively

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/website-design/)

**HTML**

(5 lessons)

Pupils explore the language behind

well-known websites, while developing their understanding of how to change the core characteristics of a website using HTML and CSS

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/html/)

**Investigating weather**

(5 lessons)

Children investigate the role of computers in forecasting and recording weather as well as how technology is used to present forecasts

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/investigating-weather/)

**Computational thinking**

(5 lessons)

Through developing their understanding of the four pillars of computational thinking, children learn to identify them in different contexts [**Go to topic**](https://www.kapowprimary.com/subjects/computing/lower-key-stage-2/year-4/computational-thinking/)

**Cross curricular links**

Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals.

Understanding opportunities offered by the World Wide Web for communication and collaboration.

Understanding 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.

Identify components of a network and understand how they used to connect to the Internet.

Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals.

Understanding opportunities offered by the World Wide Web for communication and collaboration.

Recognising that information on the Internet might not be true

or correct.Using technology safely, by recognising acceptable/unacceptable behaviour and knowing what to do when they have concerns about content or contact online.

Understanding that websites can be altered by exploring the code beneath the site.

Designing, writing and debugging programs that accomplish specific goals. Solving problems by decomposing them into smaller parts.

Understanding why some sources are more trustworthy than others.

Understanding the role of inputs and outputs in com- puterised devices.

Science Geography

Understand what decomposition is and how it facilitates problem solving.

Designing, writing and debugging programs that accomplish specific goals.

Understand abstraction and patterns recognition.

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**Overview of Kapow Primary’s topics by year**

**Year 5**

**Online safety**

(5 lessons)

Pupils create an online safety resource for younger children using tools such as presentation software, video tools or a simple stop-motion animation [**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/online-safety/)

**Micro:bit**

(5 lessons)

Programming a small device called a micro:bit to display animations or messages on its simple LED display using block coding

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/microbit/)

**Search engines**

(5 lessons)

To enable children to quickly and accurately find information and become independent learners, they need to develop their searching skills and learn how to identify trustworthy sources

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/search-engines/)

**Sonic Pi**

(5 lessons)

Composing music using code through Sonic Pi, pupils can import samples, add drum beats and compose simple tunes culminating in a ‘battle of the bands’ using live loops of music

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/sonic-pi/)

**Mars Rover 1**

(5 lessons)

Pupils explore inputs and outputs as well as Binary numbers to understand how the Mars Rover transmits and receives data and how scientists are able to control it to explore another planet! [**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/mars-rover-1/)

**Mars Rover 2**

(5 lessons)

Children learn how the Mars Rover is able to send images all the way back to Earth

and experiment with online CAD software to design new tyres for it

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-5/mars-rover-2/)

Recognising that information on the Internet might not be true or correct.

Using technology safely, by recognising acceptable/unacceptable behaviour and knowing what to do when they have concerns about content or contact online.

Using block coding to program a device.

To explore variables and different forms of input.

Understand how external devices can be programmed by a separate computer.

Recognising that information on the Internet might not be true or correct.

Know how to use key words to quickly find accurate information.

Selecting using and combining a variety of software to design and create a range of programs, systems and content that accomplish given goals.

Using programming language to create music, including use of loops.

Understanding 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 collab- oration.

Using search technologies effectively, appreciating how results are selected and ranked, and be discerning in evaluating digital content.

Recognising that computers transfer data in binary and understand simple binary addition.

Developing their CAD skills.

Understanding how image data is transferred.

## Cross curricular links

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English: Reading Music

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**Overview of Kapow Primary’s topics by year**

**Year 6**

**Bletchley Park 1 & 2**

(10 lessons)

Children learn about the history of Bletchley Park, including: key historical figures, how the first modern computers were created at as part of a WWII code breaking team and consider how computers have evolved over time. They then go on

to investigate secret codes and how they are created, exploring ‘brute force’ hacking and learn how to make passwords more secure

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/bletchley-park-1/)

**Intro to Python**

(5 lessons)

Building on their knowledge of coding from previous years, children are introduced to the text-based programming language Python, which is the language behind many

apps and programs, such as Dropbox

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/intro-to-python/)

**Big Data 1**

(5 lessons)

Children learn how data is collected and stored by exploring barcodes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/big-data-1/)

**Big Data 2**

**(5 lessons)**

Children learn the difference between mobile data and WiFi and how data is transferred and use their understanding of big data to design their own smart school

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/big-data-2/)

S**kills Showcase**

(5 lessons)

Reflecting on and showcasing their computing skills, pupils create an entire project around a specific theme

[**Go to topic**](https://www.kapowprimary.com/subjects/computing/upper-key-stage-2/year-6/skills-showcase/)

Understanding the importance of secure passwords

and using searching and word processing skills to create a presentation.

Using programming software to understand hacking, relating this to computer cracking codes in WWII.

Editing sound recordings for specific purpose.

Learning about the history of computers and how they evolved over time.

Understanding that websites can be altered by exploring the code beneath the site.

Designing, writing and debugging programs that accomplish specific goals Solving problems by decomposing them into smaller parts.

Understanding how learning can be applied to a real world context.

Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.

Understanding that computer networks provide multiple services

Understanding how barcodes and QR codes work.

Selecting, using and combining a variety of software to design and create a range of programs, systems and content to collect, analyse, evaluate and present data.

Showcasing their digital literacy skills.

Demonstrating their computational thinking skills by designing and debugging programs, using different inputs and outputs.

Understanding how search engines work and knowing how to use them safely and effectively.

## Cross curricular links

History Maths

English

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Art & Design Maths

Science

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