


Haresfield Computing Curriculum


KS1 Year A

 = Digital Literacy  = Computational thinking  = Computers and hardware  = Online Safety

Getting Started (5 lessons)


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

 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.


Algorithms Unplugged (5 lessons)


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


 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.


Digital Imagery (5 lessons)

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

 Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Knowing what to do if they have concerns about content or contact online.

 Using logical reasoning to predict the behaviour of simple programs.


 Using cameras or tablets to take photos.

 **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.


Online safety

Online safety

Online safety

 <https://www.twinkl.co.uk/resource/t-t-2546175-eyfs-staying-safe-on-the-internet-powerpoint>

To be able to understand the importance of asking for help from an adult when on the internet.

 <https://www.childnet.com/resources/smartie-the-penguin>

In app purchasing.

 <https://www.childnet.com/resources/digiduck-stories/digiducks-famous-friend>

Critical thinking and reliability online.

KS1 Key skills developed by the end of Year A

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Login and save own work on the computer.
Create digital art using an online paint tool.
Write a simple message on a computer.

Computational thinking.

Create a set of instructions (know that this is an algorithm).

Computers and Hardware.

Develop basic mouse skills.
Learn where the keys are on a keyboard.
Take a photo using a camera or a tablet.

Online safety.

Know what to do if they have concerns about content or contact online.
To act responsibly when online.

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<p><u>Rocket to the Moon</u> <i>(5 lessons)</i></p> <p>Appreciating the value of computers, understanding that they helped us get to the moon</p>	<p><u>Programming: Beebots</u> <i>(5 lessons)</i></p> <p>Using Bee-Bots to navigate an area and constructing simple algorithms, through the story of The Three Little Pigs</p>	<p><u>Introduction to Data</u> <i>(5 lessons)</i></p> <p>Learning about what data is and how it can be represented and using these skills to show the findings of a mini beast hunt</p>
<p>■ Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Selecting software appropriately.</p>	<p>■ 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.</p>	<p>■ Using technology purposefully to create, organise, store, manipulate and retrieve digital content. Selecting software appropriately. ■ Recognising uses of technology beyond school.</p>
	<p>■ ■ Stop Motion – <i>(5 lessons)</i> Pupils create animations, storyboarding their ideas then decomposing it into small parts of action to be captured using stop motion Animation software.</p>	<p>■ ■ Programming: Scratch Junior. <i>(5 lessons)</i> Using the App scratch junior pupils program a familiar story and an animation of an animal, make their own musical instruments and follow an algorithm to make a joke.</p>
<p>Online safety</p>	<p>Online safety</p>	<p>Online safety</p>
<p>■ https://www.childnet.com/resources/digiduck-stories/digiducks-big-decision</p> <p>How to be a good friend online.</p>	<p>■ https://www.twinkl.co.uk/resource/t-t-29363-buddy-the-dogs-internet-safety-story-powerpoint</p> <p>The safe use of tablets and smart phones</p>	<p>■ https://www.twinkl.co.uk/resource/t-t-5309-internet-and-phone-safety-multiple-choice-quiz-game</p> <p>Staying safe on the internet and on the phone – quiz to reinforce learning.</p>

KS1 Key skills developed by the end of Year B

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Use word to create and reformat text.

Make a digital list.

Create a chart and pictogram on the computer.

Computational thinking.

Understand how to make a Bee-Bot work.

Programming the Bee-Bots with specific instructions to navigate a map and reach an intended destination.

Computers and Hardware.

Recognise the use of technology beyond school.

Online safety.













Understand the importance of staying safe online.

Know to ask an adult if they find something they feel uncomfortable with or if something worries them.

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L KS2 Year A

 = Digital Literacy  = Computational thinking  = Computers and hardware  = Online Safety

<p><u>Journey Inside a Computer</u> (5 lessons) Children learn about the different parts of a computer through role-play and develop their understanding of how they follow instructions.</p>	<p><u>Programming: Scratch</u> (5 lessons) Using Scratch, with its block-based approach to coding, pupils learn to tell stories and create simple games</p>	<p><u>Website Design</u> (5 lessons) Pupils design and create their own websites, considering content and style, as well as understanding the importance of working collaboratively.</p>
<p> Understanding what different components of a computer do.</p> <p> Understanding that programs execute by following precise and unambiguous instructions.</p>	<p> 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.</p>	<p> 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.</p>
<p>  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</p>	<p> 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.</p>	<p>  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.</p>
<p>Online safety</p>	<p>Online safety</p>	<p>Online safety</p>
<p> https://www.saferinternet.org.uk/advice-centre/young-people/resources-3-11s SMART Rules – S Safe: M Meet: A Accepting: R Reliable : T Tell:</p>	<p> https://www.twinkl.co.uk/resource/tp2-i-926-computing-online-safety-keep-it-to-yourself-year-3-lesson-pack-3 Keeping passwords secret</p>	<p> https://www.twinkl.co.uk/resource/tp2-i-922-computing-online-safety-what-is-cyberbullying-year-3-lesson-pack-1 What is cyber bullying?</p>

LKS2 Key skills developed by the end of Year A

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Create a web page for a class website.

Change the layout of a page.

Embed an image.

Computational thinking.

Create a sprite in Scratch.

Learn about the functionality of the different blocks.

Remix an animation to make it their own

Debug a simple algorithm.

Computers and Hardware.

Compare the similarities and differences between different types of computers.

Online safety.

Use technology safely, responsibly, respectfully.











Recognise acceptable and unacceptable behaviour.

Do not give out personal information.

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<p><u>Top Trumps databases</u> (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.</p>	<p><u>How the internet works</u> (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.</p>	<p><u>Computational thinking</u> (5 lessons) Through developing their understanding of the four pillars of computational thinking, children learn to identify them in different contexts.</p>
<p> Use technology purposefully to create, organise, store, manipulate and retrieve data.</p>	<p> 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.</p> <p> Identify components of a network and understand how they are used to connect to the internet.</p>	<p> Understand what decomposition is and how it facilitates problem solving. Designing, writing and debugging programs that accomplish specific goals. Understand abstraction and patterns recognition.</p>
<p> Collaborative Learning – (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</p>	<p> Emailing – (5 lessons) Pupils learn how to send emails, including attachments and how to be responsible digital citizens.</p>	<p> Networks – (5 lessons) to understand how computers communicate, children learn about networks and how they are used to share information.</p>
<p>Online safety</p>	<p>Online safety</p>	<p>Online safety</p>
<p> https://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew https://www.childnet.com/resources/the-adventures-of-kara-winston-and-the-smart-crew/are-you-smart-online-quiz</p>	<p> https://www.twinkl.co.uk/resource/tp2-i-914-computing-online-safety-copycats-year-4-lesson-pack-3 Copy cats!</p>	<p> https://www.twinkl.co.uk/resources/planit-computing-primary-teaching-resources/planit-computing-primary-teaching-resources-y4/e-safety-y4-computing-planit</p>

LKS2 Key skills developed by the end of Year B

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Input data into a database.

Sort and filter data by different values.

Represent data in visual ways.

Computational thinking.

Analyse code from scratch to find out what it might do.

Create a simple game in scratch.

Computers and Hardware.

Identify components of a network.

Online safety.

Know what cyber bullying means.

Know what to do if they become a victim of cyber bullying.

Know how to be responsible digital citizens.

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Bletchley Park (10 lesson)


Children learn about the history of Bletchley Park including: key historical figures, how the first modern computers were created 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.


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.


Micro bit (5 lessons)


Pupils program a small device called a micro-bit to display animations or messages on its simple LED display using block coding.


 Understanding the importance of secure passwords and using search 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 purposes.

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

 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 loops of music.

 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.


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.

Online safety

Online safety

 <https://www.twinkl.co.uk/resources/planit-computing-primary-teaching-resources/planit-computing-primary-teaching-resources-y5/online-safety-y5-computing-planit>

 Infobuzz – safer gaming

UKS2 Key skills developed by the end of Year A

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Research and present information digitally.

Use software to create content – create a piece of music upon a given theme.

Computational thinking.

Create a piece of music based upon a given theme.

Include loops in their music code.

Using the BBC micro:bit, pupils working out how an animation is created before programming their own.

Computers and Hardware.

Understand how computers have changed (include mobile phones)

Program an external device using a separate computer.

Online safety.

Know the importance of creating a secure password.

Know the potential dangers of communicating and collaborating online.

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<p><u>Mars Rover 1 and Mars Rover 2</u> <i>(10 lessons)</i></p> <p>Pupils explore inputs and outputs as well as binary numbers to understand how the Mars rovers transmits and receives data and how scientists are able to control it to explore another planet. They learn how 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.</p>	<p><u>Big Data</u> <i>(5 lessons)</i></p> <p>.Children learn how data is collected and stored by exploring bar codes, QR codes and RFID chips, and investigate how collecting big data can be used to help people in a variety of different scenarios.</p>	<p><u>Search Engines</u> <i>(5 lessons)</i></p> <p>To enable children to quickly and accurately find information and become independent learners, they need to develop their search skills and learn how to identify trustworthy sources.</p>
<p>■ 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. .</p> <p>■ Using search technologies effectively, appreciating how results are selected and ranked, and be discerning in evaluating digital content.</p> <p>■ Developing their CAD skills</p> <p>■ Understanding how image data is transferred.</p>	<p>■ 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.</p> <p>■ Understanding that computer networks provide multiple services. Understand how barcodes and QR codes work.</p>	<p>■ Recognising that information on the internet might not be true or correct. Know how to use key words to quickly find accurate information.</p> <p>■ ■ ■ Skills showcase – (5 lessons) Reflecting on and showcasing their computing skills, pupils create an entire project around a specific theme.</p>
<p>Online safety</p>	<p>Online safety</p>	<p>Online safety</p>
<p>■ https://www.twinkl.co.uk/resources/planit-computing-primary-teaching-resources/planit-computing-primary-teaching-resources-y6/e-safety-y6-computing-planit</p>	<p>■ Infobuzz – safer gaming workshop</p>	<p>■ Y6 only – sexting and cyberbullying</p>

UKS2 Key skills developed by the end of Year B

All children in both cohorts will be expected to achieve the key skills during the year.

Digital literacy.

Design using online 3D design software.

Create pixel art.

Use an online QR generator to create a secret code.

Know how to use Key words to find accurate information

Computational thinking.

Pupils choose an electronic product to design and then use and adapt existing code to achieve a desired result. (Skill showcase)

Computers and Hardware.

Know that computers send data in binary.

Know that a pixel is the smallest element of a digital image.

Understand what a QR code is.

Online safety.

Know that not all information on the internet is true.

Know how to check if information they find is accurate.