CHURCHTOWN PRIMARY SCHOOL

Founded 1684

Our Computing Curriculum

Here at Churchtown, we use Kapow Computing to support the delivery of the Computing National Curriculum.

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

Computer Science

- ★ 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.

Information Technology

- ★ Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems are responsible, competent, confident and creative users of information and communication technology.

Digital Literacy

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

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Early Years Learning Goals

Computing in Nursery and Reception Overview

All of Early Years should select a **reading** book, **each half term**, with an **E-Safety/Stranger Danger** focus to explore with the children.

Reception should use **Bee-Bots** and **telephones** to support the children's understanding of *directional language*, *communicational language* and understanding of *instructional vocabulary*, in line with other aspects of the *EY learning goals* **throughout the academic year**.

Reception should use the **computer suite** in the Summer term.

<table>
<tr><th rowspan="2"></th><th colspan="2">Autumn Term</th><th colspan="2">Spring Term</th><th colspan="2">Summer Term</th></tr>
<tr><th>Autumn 1</th><th>Autumn 2</th><th>Spring 1</th><th>Spring 2</th><th>Summer 1</th><th>Summer 2</th></tr>
<tr><td>Overview</td><td>Nursery:
Stranger Danger

Reception:
E-Safety</td><td>Nursery:
E-Safety

Reception:
Stranger Danger</td><td>Nursery:
Stranger Danger

Reception:
E-Safety</td><td>Nursery:
E-Safety

Reception:
Stranger Danger</td><td>Nursery:
Stranger Danger

Reception:
Computer Suite Familiarisation & E-Safety</td><td>Nursery:
E-Safety

Reception:
Computer Suite & Stranger Danger</td></tr>
<tr><td>Key Vocabulary</td><td colspan="4">E-Safety
Stranger danger
Internet
Computer
Tablet
iPad
Camera
Webcam</td><td colspan="2">Reception Only

Computer Screen
Keyboard
Mouse
Log on
Log out</td></tr>
<tr><td>Required Resources</td><td colspan="6">
Bee-Bots
Telephones
E-Safety/Stranger Danger reading books
Computer Suite
 </td></tr>
<tr><td>Suggested Texts</td><td colspan="3">E-Safety

○ Chicken Clicking by Jeanne Willis & Tony Ross

○ Troll Stinks by Jeanne Willis & Tony Ross

○ Penguinpig by Stuart Spendlow & Amy Bradley

○ Once Upon A Time Online by David Bedford

○ Webster's Technology Books by Hannah Whaley

○ Tek: The Modern Cave Boy by Patrick McDonnell

○ Dot by Randi Zuckerberg

○ The Internet is like a Puddle by Shona Innes

○ Smartie the Penguin- An online safety story (https://www.childnet.com/resources/smartie-the-penguin)</td><td colspan="3">Stranger Danger

○ Who's Bad and Who's Good, Little Red Riding Hood? by Steve Smallman

○ Once Upon a Dragon by Jean Pendzwol

○ The Berenstain Bears Learn about Strangers by Stan Berenstain

○ Don't talk to Stranger, Pooh! by Kathleen Zoehfeld

○ Once Upon a Dragon by Jean E. Pendziwol

○ I Can Be Safe: A First Look at Safety by Pat Thomas

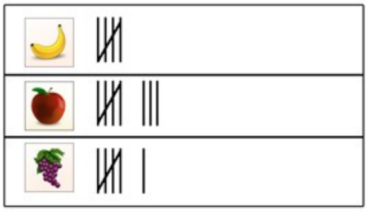
○ Not Everyone Is Nice by Frederick Alimonti</td></tr>
</table>

Y1-Y6 Computing Overview

	Autumn Term		Spring Term		Summer Term	
	Online Safety Ongoing					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Improving Mouse Skills **Information Technology Digital Literacy**	Algorithms Unplugged **Computer Science**			Introduction to Data **Information Technology**	Programming Bee-bots **Computer Science**
Year 2	What is a computer? **Information Technology Computer Science**	Algorithms and Debugging **Computer Science**		International Space Station **Computer Science Digital Literacy**		
Year 3	Networks and the Internet **Information Technology Computer Science Digital Literacy**	Programming Scratch **Information Technology Computer Science Digital Literacy**	Journey inside a computer **Information Technology Computer Science**	Video trailers **Information Technology Computer Science Digital Literacy**		
Year 4	Computer systems and networks **Information Technology Computer Science**		Further coding; Scratch **Information Technology Computer Science**	HTML **Information Technology Computer Science Digital Literacy**		Computational thinking **Information Technology Computer Science**
Year 5		Search engines **Information Technology Digital Literacy**		Programming music **Information Technology Computer Science**	Mars Rover **Information Technology Computer Science**	
Year 6		Bletchley Park **Information Technology Computer Science Digital Literacy**	Introduction to Python **Information Technology Computer Science**	Big data **Information Technology Computer Science Digital Literacy**	History of computers **Information Technology Computer Science**	

Year 1

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content	Improving Mouse Skills **Information Technology** **Digital Literacy**	Algorithms Unplugged **Computer Science**			Introduction to Data **Information Technology**	Programming Bee-bots **Computer Science**
Key Skills	• Keyboard Skills - Locating letters of an individuals name. • Computer Menus - File, open, save and close • Using a mouse - Click and drag, drag and drop and left/right click	• Plan and execute an algorithm/set of instructions • Understand basic debugging concepts • Understand how to break down objects into separate parts and categorise them			• Understand how branching databases work • Find various ways of collecting data	• To locate different parts of a device • Understng devices such as bee-bots, and follow instructions to move.
Key Vocabulary	• Account • Computer • Log on/off • Password • Screen • Username	• Algorithm • Bug • Debug • Input • Output • Instructions			• Category • Chart • Data • Information • Label • Record • Sort • Table	• Algorithm • Bee-bot • Code • Instructions • Explain • Predict •
Required Resources	Computer Suite	Classroom			Classroom	Computer Suite



Year 2

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content	What is a computer? **Information Technology** **Computer Science**	Algorithms and Debugging **Computer Science**		International Space Station **Computer Science** **Digital Literacy**		
Key Skills	• Understand different kinds of technology • Understand different methods of input and outputs	• Be able tot use the zoom feature • Understand unplugged algorithms and instructional writing • Identify key information • Understanding decompisision		• To create and label imaged • To enter data into a spreadsheet • Consider inputs and outputs to understand how sensors work		
Key Vocabulary	• Battery • Desktop • Device • Electricity • Invention • Technology	• Bug • Debug • Correct • Data • Error • Loop • Predict		• Approximate • Data • Digital content • Experiment • Monitoring		
Required Resources	Computer Suite			Computer Suite		

Year 3

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content	Networks and the Internet **Information Technology** **Computer Science** **Digital Literacy**	Programming Scratch **Information Technology** **Computer Science** **Digital Literacy**	Journey inside a computer **Information Technology** **Computer Science**	Video trailers **Information Technology** **Computer Science** **Digital Literacy**		
Key Skills	• Understand network components and how they are used to connect the internet • Understand how data is transferred • Understand the internet uses	• To create building games and animation in Scratch • Using design software to create animation	• To understand different components of a computer do • To understand programmes use precise instructions • To use QR codes	• To use technology to create digital content		
Key Vocabulary	• Device • File • Internet • Network • Router • Server • The cloud • Wifi • Wireless	• Animation • Code • Loop • Program • Remixing code • Repetition code • Satire • Tinker	• Algorithm • Computer program • Instructions • Data • Desktop • ROM	• Application • Digital device • Edit • Film • Graphics • Import • Key events • Plan • Recording • Sound effects • Time code • Voice • Voice over		
Required Resources	Computer Suite	Computer Suite	Computer Suite	Computer Suite		

Year 4

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content	Computer systems and networks **Information Technology Computer Science**		Further coding; Scratch **Information Technology Computer Science**	HTML **Information Technology Computer Science Digital Literacy**		Computational thinking **Information Technology Computer Science**
Key Skills	• Use a variety of software to design a range of programmes, systems and content. • To be able to share online documents • Understand what is offered by the world wide web • To develop presentation skills		• To understand different coding function, motions, sound, looks, events, control, operators, sensing variable and my block. • Scratch sprites	• To recognise that information on the internet may not be true or correct • To use technology safely • To understand that websites can be altered. • To understand HTML, CSS and HTML tags.		• To understand decompositio n • Design write and debug programmes using sequencing and pattern recognition
Key Vocabulary	• Collaborate • Comment • Edit • Email • Icon • Insert • Link • Reply • Share • Spreadsheet • Transition		• Code • Conditional statement • Decompose • Direction • Orientation • Position • Project • Stage	• Content • Copyright • CSS • Hacker • Hex code • Internet browser • Permission • Script • URL • Web page		• Abstraction • Design • Code • Decompose • Problem
Required Resources	Computer Suite		Computer Suite	Computer Suite		Computer Suite

Year 5

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content		Search engines **Information Technology** **Digital Literacy**		Programming music **Information Technology** **Computer Science**	Mars Rover **Information Technology** **Computer Science**	
Key Skills		• To use search engines effectively to underhand information on the internet may not be true or correct		• Use and combine a variety of software to design programmes • Use programming language to create music	• To understand computer networks and the internet • To understand binary numbers and equivalent decimal values • To use search technologies effectively • To recognise computers transfer data in binary	
Key Vocabulary		• Algorithm • Company logo • Data lease • Data privacy • Inaccurate information • Key words • Network • Online • Page rank • TASK • Website • WWW		• Commands • Bug • Debug • Code • Error • Loop • Pitch • Programme language • Tinker • Rhythm • Tempo • Soundtrack	• Binary code • Data • Data transmission • Numerical data • Input/output • Sequence	
Required Resources		Computer Suite		Computer Suite	Computer Suite	

Year 6

	Autumn Term		Spring Term		Summer Term	
	Online Safety					
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Overview/ Content		Bletchley Park **Information Technology Computer Science Digital Literacy**	Introduction to Python **Information Technology Computer Science**	Big data **Information Technology Computer Science Digital Literacy**	History of computers **Information Technology Computer Science**	
Key Skills		• Understand importance of secure passwords • To use searching and word processing skills to create a presentation • Use programming software to understand hacking	• Understand thar website can be altered by exploring the code • To design write and debug programmes • To teach computers to think for themselves • To solve problems by breaking them into smaller parts	• To understand how learning can be applied to real world contexts • Combine a variety of software to design a range of programmes • Understand that computers and networks provide multiple series • Understand how barcode and QR codes work	• To edit sound recordings for purpose • To understand the history of computers and how they have evolved over time • To understand memory sizes KG, MB, GB, TB	
Key Vocabulary		• Acrostic code • Hacking • Encrypt • Invention • Password • Technological advancement • Trial and error	• Algorithm • Code • Computer command • Decompose • Import • Loop • Random numbers • Variable	• Barcode • Brand • Contactless • Data • Data privacy • Encrypt • Infared waves • QR code • Radio waves • Signal • Systems • Transmission	• Background noise • Byte • Memory storage • CPU • OS • RAM • ROM • Sound effects	
Required Resources		Computer Suite	Computer Suite	iPad/ Chromebook	Computer Suite	