

COMPUTING



SHIRLEY INFANT SCHOOL



SUBJECT DESIGN

OUR COMPUTING CURRICULUM

At Shirley Infant School we strive to build a community of pupils who are competent, confident users of ICT and are knowledgeable about emerging technologies. The progression of knowledge and skills are reflective of the following National Curriculum areas: computer science (programming and understanding how digital systems work), information technology (using computer systems to store, retrieve and send information) and digital literacy (evaluating digital content and using technology safely and respectfully). We understand the need to equip all learners with the experiences and skills of ICT to prepare them for a rapidly changing technological world.

Computing is taught within groups of 15, allowing the class teacher to scaffold computational thinking and skills, increasing the independence and resilience of the children in the school. The curriculum covers all three strands stated above in each year group, with growing complexity of skills as the children move through the school. They have the opportunity to revisit units of work to embed previous skills and build upon what has already been taught.



OUR E-SAFETY CURRICULUM

E-Safety is taken very seriously and is embedded within our curriculum. We have an e-safety policy that provides guidance for teachers and children about how to use the internet safely and appropriately. Through our communication means with parents, we have also provided guidance on how to support for their children with safe internet use in their homes.

Our e-safety curriculum allows children to become aware of their responsibility when using technology as well as exploring the risks through fictional stories. We have 6 key focuses which are shared to all children through an allocated e-safety lesson at the beginning of each half term. Each year group participates in these lessons and activities are set based on their age and stage. As a result, they are given the tools they need to develop their resilience and know what to do to keep themselves safe. Our school also takes part in an annual internet safety day to address current issues.

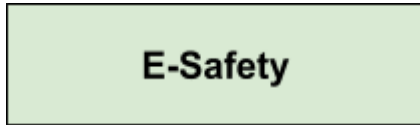
We use key information and resources from the following organisations; NSPCC, ChildNet, CEOP, UK Safer Internet Centre.

CONCEPTS

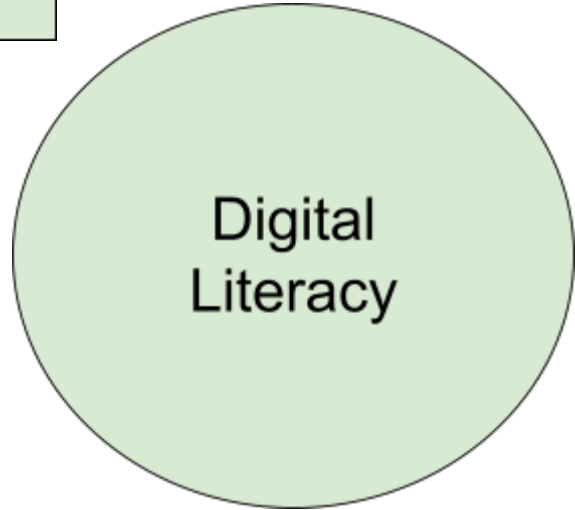
Research



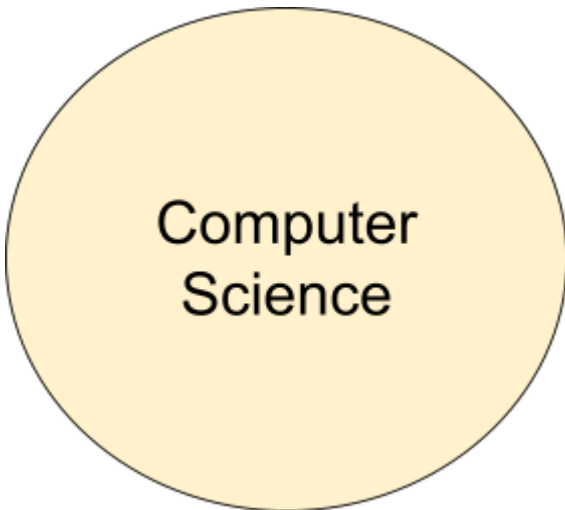
E-Safety



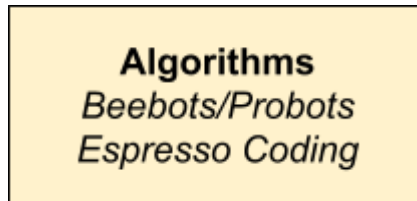
**Digital
Literacy**



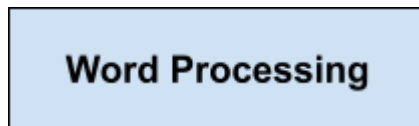
**Computer
Science**



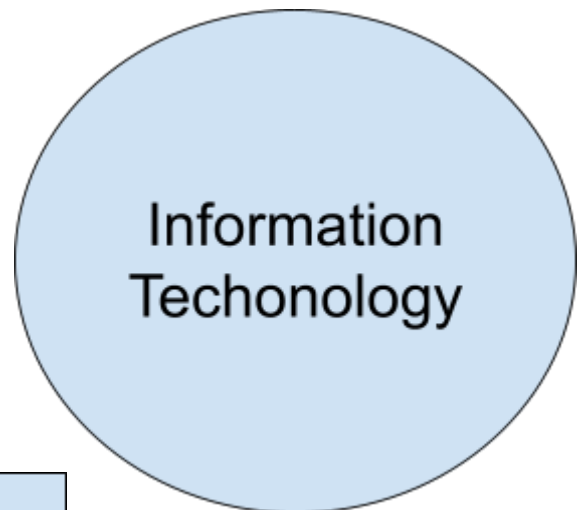
Algorithms
Beebots/Probots
Espresso Coding



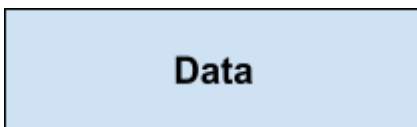
Word Processing



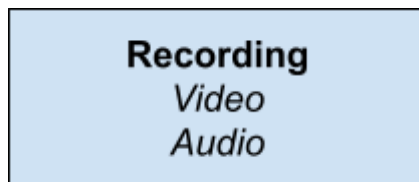
**Information
Techonology**



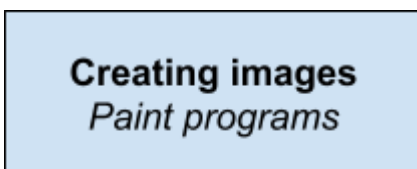
Data



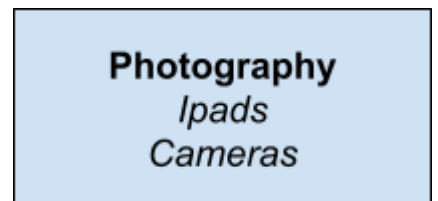
Recording
Video
Audio



Creating images
Paint programs



Photography
Ipads
Cameras



ICT Skills



Shirley Infant School

1. Computer Science

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
 - create and debug simple programs
 - use logical reasoning to predict the behaviour of simple programs
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- Giving and following instructions
 - Beebots/Probots/Dashbots
 - Espresso Coding

2. Digital Literacy

- recognise common uses of information technology beyond school
- a. use technology safely and respectfully,
 - b. keeping personal information private;
 - c. identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.
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- E-safety
 - ICT in the wider world
 - Internet (Teacher supervised)

3. Information Technology

- use technology purposefully to create, organise, store, manipulate and retrieve digital content
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- Microsoft Office documents
 - Video recording
 - Sound and music
 - Graphics, painting and digital photography
 - Internet (Teacher supervised)
 - Saving, editing and printing work

TOPIC OVERVIEWS

	Autumn 1	Spring 1	Spring 2	Summer 1	Summer 2
<p style="text-align: center;">Yr R</p> <p>Role play opportunities: - Phones - computer - cameras</p>	<p style="text-align: center;">This is me/Let's Learn With Harry</p> <p>Digital cameras to take photographs 2/3</p> <p>iPads - accessing apps 2/3</p> <p>Explore beebots and dashbot 1</p> <p style="text-align: center; color: red;">Evidence: Squirrels</p>	<p style="text-align: center;">Adventure Bay/Pirates</p> <p>Explore ICT suite Introduction to keyboard and mouse</p> <p>Logging on to school systems 2/3</p> <p>Percy's computing club (Focus: double clicking) 3</p> <p style="text-align: center; color: red;">Evidence: Otters</p>	<p style="text-align: center;">Apple Tree Farm/Easter</p> <p>Algorithms - 'Simon Says' Following simple instructions 1 (Transfer to programmable toys)</p> <p style="text-align: center; color: red;">Evidence: Hedgehogs</p>	<p style="text-align: center;">Let's Pretend</p> <p>Using Paint 3D to create pictures 3</p> <p>Percy's computing club 3</p> <p style="text-align: center; color: red;">Evidence: Squirrels</p>	<p style="text-align: center;">Rumble In The Jungle/To Infinity And Beyond</p> <p>Opportunity to consolidate any previously taught units of work.</p> <p style="text-align: center; color: red;">Evidence: Otters</p>
	<p style="text-align: center;">E-Safety Charter and superheroes</p>	<p style="text-align: center;">E-Safety Personal information</p>	<p style="text-align: center;">E-Safety Safer Internet Day</p>	<p style="text-align: center;">E-Safety Cyberbullying</p>	<p style="text-align: center;">E-Safety Age restrictions</p>
<p>Shows an interest in and interacts with age appropriate software/hardware Knows that information can be retrieved from computers Select and use technology for different purposes</p>					

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr 1	<p>Who's afraid of the big bad wolf?</p> <p>Algorithms - Beebots and maps Order commands to get Beebot/Dashbot from one spot to another 1</p> <p><i>Evidence: Moles</i></p>	<p>Animals</p> <p>Create pictures using 3D paint (brush, pen, line, shape and fill) 3</p> <p>Add captions to the pictures about the animal they have created. (letters and space bar) 3</p> <p><i>Evidence: Rabbits</i></p>	<p>Celebrating Culture</p> <p>Algorithms - Espresso Coding 1</p> <p><i>Evidence: Owls</i></p>	<p>Victorians</p> <p>Take photos (link to writing) 2/3</p> <p>Record and playback audio recordings 2/3</p> <p><i>Evidence: Moles</i></p>	<p>Little Explorers</p> <p>Microsoft Word - Making a poster of beach/forest/ St James Park 3</p> <p><i>Evidence: Rabbits</i></p>	<p>Minibeast Bop</p> <p>Researching minibeasts on websites 2</p> <p>Design your own minibeast habitat on paint 3D vs paper (which is easier to edit?) 3</p> <p><i>Evidence: Owls</i></p>
	<p>E-Safety Charter and superheroes</p>	<p>E-Safety Personal information</p>	<p>E-Safety Safer Internet Day</p>	<p>E-Safety Cyberbullying</p>	<p>E-Safety Age restrictions</p>	<p>E-Safety Media Balance & Wellbeing</p>

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr 2	<p>Let it grow!</p> <p>Algorithms - Revise what algorithms are (Focus: debugging partner's algorithms using Beebots/Probots / Dashbots 1</p> <p>Re-ordering instructions and correct errors in programs 1</p> <p>Evidence: Foxes</p>	<p>Titanic</p> <p>Take photos of them in role, upload and write a short caption underneath 2/3</p> <p>Save and print 2/3</p> <p>Evidence: Badgers</p>	<p>Journey To The Unknown</p> <p>Retrieve information from the internet and present on a poster 2/3</p> <p>Evidence: Woodpeckers</p>	<p>Fire! Fire!</p> <p>Algorithms</p> <p>Espresso Coding Unit 2A 1 (Focus: Trial and error)</p> <p>Espresso Coding Unit 2B 1 (Focus: Creating own algorithms)</p> <p>Evidence: Foxes</p>	<p>Cindy, Ann, Bones And The Temple Of Boom</p> <p>Filming class productions in groups 2/3</p> <p>E-safety link</p> <p>Evidence: Badgers</p>	<p>Grrr!</p> <p>Collecting, recording and presenting data 3</p> <p>Evidence: Woodpeckers</p>
	<p>E-Safety Charter and superheroes</p>	<p>E-Safety Personal information</p>	<p>E-Safety Safer Internet Day</p>	<p>E-Safety Cyberbullying</p>	<p>E-Safety Age restrictions</p>	<p>E-Safety Media Balance & Wellbeing</p>



KNOWLEDGE PROGRESSIONS



	Year R		Year 1		Year 2	
	Knowledge	Disciplinary knowledge	Knowledge	Disciplinary knowledge	Knowledge	Disciplinary knowledge
Computer Science	I know that when I push directional buttons on a programmable toy, it can move.	I know how to move a programmable toy .	<p>I know that an algorithm is a set of instructions.</p> <p>I know that an algorithm needs to be given in a correct order for it to work.</p> <p>I know that a programmable toy can be moved by inputting an algorithm.</p>	<p>I know how to write algorithms to complete specific tasks.</p> <p>I know how to move a programmable toy in different directions.</p> <p>I know how to combine commands to follow a route.</p>	<p>I know that a program is a collection of algorithms.</p> <p>I know that an algorithm needs to be given in a correct order for it to work.</p> <p>I know that debugging is when a program needs to be changed.</p>	<p>I know how to enter a sequence of commands to carry out specific tasks.</p> <p>I know how to correct errors in programs.</p> <p>I know how to reorder a sequence of instructions (debug).</p>
Information Technology	I know that computers are used for different purposes.	<p>I know how to move a mouse.</p> <p>I know how to click on an image.</p>	<p>I know that a keyboard is used to type words on a computer.</p> <p>I know that word documents can be</p>	<p>I know how to use letters, basic punctuation, spacebar and enter key to type words and sentences.</p>	<p>I know that word documents can be edited and improved.</p>	<p>I know how to change, add and remove words.</p> <p>I know how to change the font size, colour and style to edit my work.</p>

		I know how to type on a keyboard .	edited.	I know how to use specific keys on the keyboard to make corrections (backspace, shift key) .		
<p>I know that a camera is used to take a photograph.</p> <p>I know that sounds can be played on computers and cd players.</p>	<p>I know how to capture a photo on a camera or ipad.</p> <p>I know how to play a sound on a computer/cd player.</p>	<p>I know that digital cameras and ipads are used to take photographs.</p> <p>I know that cameras need to be held still so that the photo is not blurry.</p> <p>I know that sounds can be recorded on different devices.</p>		<p>I know how to capture a photo.</p> <p>I know how to record an audio recording.</p> <p>I know how to playback an audio recording.</p>	<p>I know that digital cameras and ipads are used to take photographs.</p> <p>I know that devices need to be moved slowly and carefully to get the best quality video.</p> <p>I know that sounds can be recorded on different devices.</p>	<p>I know how to upload a photograph onto a computer.</p> <p>I know how to change the size of a photo within a document.</p> <p>I know how to move an image within a document.</p> <p>I know how to capture a video.</p> <p>I know how to playback a video clip.</p>
		I know how to open apps on a computer.		<p>I know how to paint with different colours on an app.</p> <p>I know how to correct mistakes using the undo button or eraser.</p> <p>I know how to use different tools to create an image.</p>	<p>I know that icons on a screen represent an app.</p> <p>I know that information can be presented in different ways.</p>	<p>I know how to access apps on a screen by double clicking the icon.</p> <p>I know how to add information to a simple database.</p> <p>I know how to present data in a pictogram.</p> <p>I know how to present</p>

						<p>data in a bar chart.</p> <p>I know how to read different charts to answer questions about data.</p>
Digital Literacy & research	<p>I know that information can be found on the internet.</p> <p>I know that the internet can be used to watch videos and play games.</p>	<p>I know how to play age-appropriate games online safely.</p>	<p>I know that the internet is a place where I can search for information.</p> <p>I know that a hyperlink is a word or picture that can be clicked on to find additional information.</p>	<p>I know how to access the internet by clicking on the chrome icon.</p> <p>I know how to double click on hyperlinks to find additional information.</p> <p>I know how to go to a previous page using the back button.</p>	<p>I know that the internet is a place where I can search for information.</p> <p>I know that each website has a unique address.</p> <p>I know that a hyperlink is a word or picture that can be clicked on to find additional information.</p> <p>I know that not all information found on the internet will be accurate or useful.</p>	<p>I know how to open a website via favourites.</p> <p>I know how to open a website by typing in a unique address.</p> <p>I know how to use a search engine to find facts using key words.</p>
E-safety	<p>I know that the internet can be used to watch videos and play games.</p> <p>I know that others can be unkind</p>	<p>I know how to speak kindly to others online.</p> <p>I know how to talk to a trusted adult about anything that makes me feel worried online.</p>	<p>I know that I need to follow rules to keep safe online.</p> <p>I know what private information is and that I shouldn't share it online.</p>	<p>I know how to interact with others respectfully online.</p> <p>I know how to talk to a trusted adult about anything that makes me feel worried online.</p>	<p>I know how to stay safe by going to appropriate websites for my age.</p> <p>I know that the messages or</p>	<p>I know how to behave safely and respectfully online.</p> <p>I know how to talk to a trusted adult about anything that makes me feel worried online.</p>

	<p>online as well as offline. I know that I can talk to a trusted adult about anything that makes me feel worried.</p>		<p>I know that bullying can happen online as well as offline.</p> <p>I know that I need to talk to a trusted adult about anything that makes me feel worried online.</p>		<p>images I put online leaves a trail. I know that I need to talk to a trusted adult about anything that makes me feel worried online.</p> <p>I know that I must always ask someone's permission before taking a photo/video.</p>	
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Must knows 'highlighted in blue

SUBJECT SPECIFIC ENHANCEMENTS

E-SAFETY ASSEMBLIES

A mixture of whole school and class assemblies reinforces the importance of our Shirley Infant School E-Safety heroes and the job they do to keep us safe.

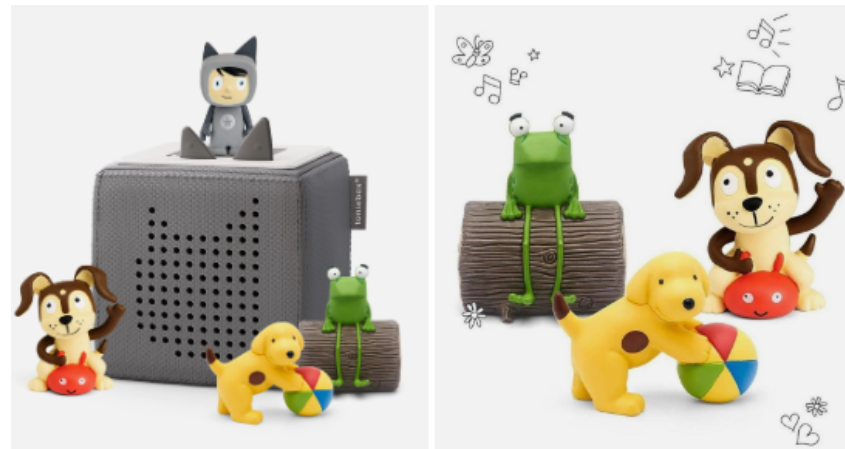
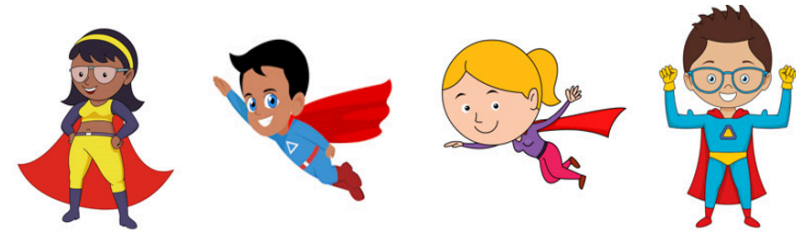
SAFER INTERNET DAY

Each year, we discuss topics relevant to current technology and the challenges they can present.

TONIE BOXES

New technology at Shirley Infant School designed to enhance personal and social development while embedding taught computing skills.

Introducing our E-safety Superheroes!



E-SAFETY NEWSLETTERS TO PARENTS/CARERS



Autumn E-Safety Newsletter



This term we have been getting to know our school's E-safety superheroes. Each superhero has a special job to support us when we are using the internet.



Star is Internet SMART. She knows that it is not right to share personal information with people online because they could be strangers!



Sonic is Internet ALERT. When researching online, he is quick to check the information with a grown-up to see the information is reliable.



Kitty is Internet KIND. She knows that being kind is always the best choice. Her motto is: "If you don't have anything nice to say, don't say anything at all."



Captain Brave is Internet BRAVE. The internet can be a scary place. He knows that it is always a good choice to share what you are doing with your grown-ups

What is personal information?

Personal information is anything that would identify you to somebody else. Here are some examples of information we would **NEVER** share online:



Your address



Your school/photos of your uniform



Your phone number



Passwords



Age/date of birth



Your name

Here is an activity you could work through with your child at home

Sharing personal details

The illustrations below show different types of personal information or details.

You will often be asked for your personal details to set up your profile when you use apps, games and social media sites, but what about at other times?

When is it safe to share your details and when is it not?



NSPCC

Materials developed with Ambitious about Autism



1. Talk to your child about safe sharing. Talk to your child about personal information – what it is and when it is safe to share. Make sure they know that some information should not be shared with others online and if they share something they shouldn't, they should let you or another grown-up they trust know.

2. Create anonymous usernames. On some sites, apps and games, children may be talking to other people that they don't know offline. Let your child know that they shouldn't share their full name or any other personal information about themselves such as the name of their school, address or telephone number.

3. Protect their usernames and passwords. Explain to your child that if other people see their username and/or password, they could use this information to access their account. Any passwords they set should be strong and safe but easy for them to remember and they shouldn't share their password with anyone, including their friends.

4. Think before they click. Remind them that some sites, emails and pop ups may try to trick them into clicking on links or sharing information. For example, they may offer free coins, avatars or upgrades. Before they click on any links, they should stop and ask for help from a grown up first.

5. Reach out for help. Encourage your child to discuss any concerns with someone they trust. Let your child know that the best way to address any problem they have online, is to tell a trusted adult immediately. For example, this might include sending someone a friend request; an online message; or asking them for their personal information. Reassure them that if anything happens online that they are worried about, or makes them feel worried or upset, they can come to you for help.