COMPUTING

Shirley infant school

1. 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

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

2. CONCEPTS

**Research**

E-Safety

Digital Literacy
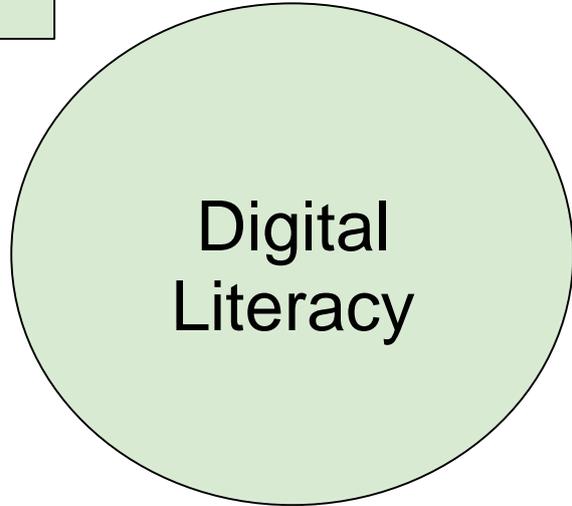
Computer Science
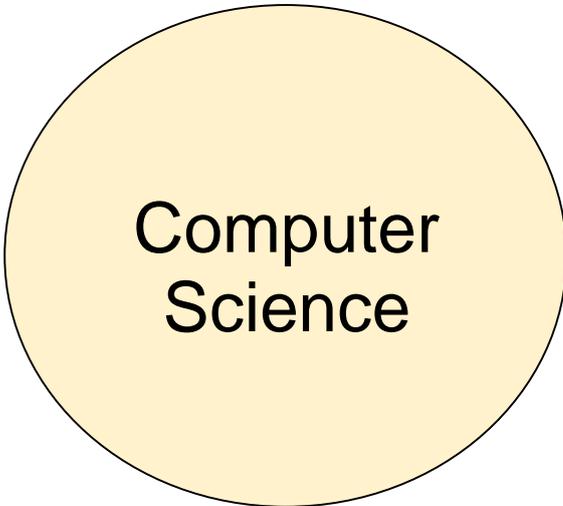
Algorithms
Beebots/Probots
Espresso Coding
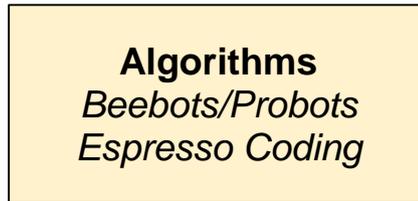
Word Processing
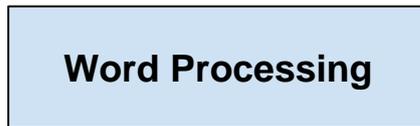
## Information Techonology

Data
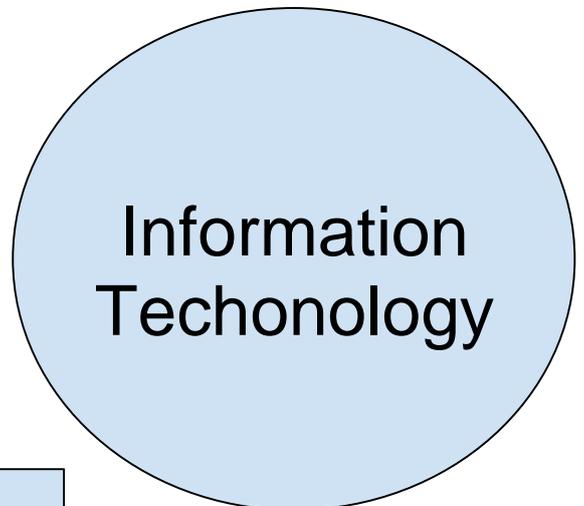
Recording
Video
Audio

Creating images
Paint programs
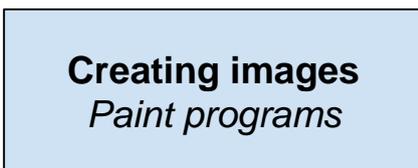
Photography
Ipads
Cameras
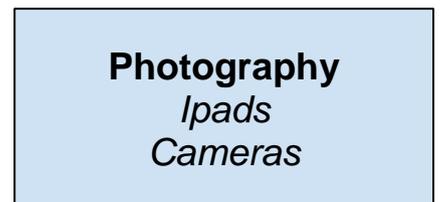
ICT Skills

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

- 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.

- 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

- Microsoft Office documents
- Video recording
- Sound and music
- Graphics, painting and digital photography
- Internet (Teacher supervised)
- Saving, editing and printing work

3. Topic overviews

	Autumn 1	Spring 1	Spring 2	Summer 1	Summer 2
Yr R Role play opportunities: - Phones - computer - cameras	**This is me/Let's Learn With Harry** Digital cameras to take photographs **2/3** iPads – accessing apps **2/3**	**Adventure Bay/Pirates** Explore ICT suite Introduction to keyboard and mouse	**Apple Tree Farm/Easter** Algorithms - 'Simon Says' Following simple instructions **1**	**Let's Pretend** Using Paint 3D to create pictures **3**	**Rumble In The Jungle/To Infinity And Beyond**

Explore beebots and dashbot **1** Evidence: Squirrels	Logging on to school systems **2/3** Percy's computing club (Focus: double clicking) **3** Evidence: Otters	(Transfer to programmable toys) Evidence: Hedgehogs	Percy's computing club **3** Evidence: Squirrels	Opportunity to consolidate any previously taught units of work. Evidence: Otters
E-Safety Charter and superheroes	**E-Safety** Personal information	**E-Safety** Safer Internet Day	**E-Safety** Cyberbullying	**E-Safety** Age restrictions	**E-Safety** Media Balance & Wellbeing

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

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr 1	**Who's afraid of the big bad wolf?** Algorithms – Beebots and maps Order commands to get	**Animals** Create pictures using 3D paint (brush, pen, line, shape and fill) **3** Add captions to	**Celebrating Culture** Algorithms - Espresso Coding **1**	**Victorians** Take photos (link to writing) **2/3** Record and playback audio recordings **2/3**	**Little Explorers** Microsoft Word – Making a poster of beach/forest/ St James Park **3**	**Minibeast Bop** Researching minibeasts on websites **2**

	Beebot/Dashbot from one spot to another **1** Evidence: Moles	the pictures about the animal they have created. (letters and space bar) **3** Evidence: Rabbits	Evidence: Owls	Evidence: Moles	Evidence: Rabbits	Design your own minibeast habitat on paint 3D vs paper (which is easier to edit?) **3** Evidence: Owls
	E-Safety Charter and superheroes	**E-Safety** Personal information	**E-Safety** Safer Internet Day	**E-Safety** Cyberbullying	**E-Safety** Age restrictions	**E-Safety** Media Balance & Wellbeing

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Yr 2	**Let it grow!** Algorithms – Revise what algorithms are	**Titanic** Take photos of them in role, upload and write	**Journey To The Unknown**	**Fire! Fire!** Algorithms Espresso Coding Unit 2A **1**	**Cindy, Ann, Bones And The Temple Of Boom**	**Grrr!** Collecting, recording and presenting data **3**

(Focus: debugging partner's algorithms using Beebots/Probots/ Dashbots **1** Re-ordering instructions and correct errors in programs **1** Evidence: Foxes	a short caption underneath **2/3** Save and print **2/3** Evidence: Badgers	Retrieve information from the internet and present on a poster **2/3** Evidence: Woodpeckers	(Focus: Trial and error) Espresso Coding Unit 2B **1** (Focus: Creating own algorithms) Evidence: Foxes	Filming class productions in groups 2/**3** **E-safety link** Evidence: Badgers	Evidence: Woodpeckers
E-Safety Charter and superheroes	**E-Safety** Personal information	**E-Safety** Safer Internet Day	**E-Safety** Cyberbullying	**E-Safety** Age restrictions	**E-Safety** Media Balance & Wellbeing

4. 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.	I know that an algorithm is a set of instructions. I know that an algorithm needs to be given in a correct order for it to work. I know that a programmable toy can be moved by inputting an algorithm.	I know how to write algorithms to complete specific tasks. I know how to move a programmable toy in different directions. I know how to combine commands to follow a route.	I know that a program is a collection of algorithms. I know that an algorithm needs to be given in a correct order for it to work. I know that debugging is when a program needs to be changed.	I know how to enter a sequence of commands to carry out specific tasks. I know how to correct errors in programs. I know how to reorder a sequence of instructions (debug).
Information Technology	I know that computers are used for different purposes.	I know how to move a mouse. I know how to click on an image. I know how to type on a keyboard.	I know that a keyboard is used to type words on a computer. I know that word documents can be edited.	I know how to use letters, basic punctuation, spacebar and enter key to type words and sentences. I know how to use specific keys on the keyboard to make corrections (backspace, shift key).	I know that word documents can be edited and improved.	I know how to change, add and remove words. I know how to change the font size, colour and style to edit my work.
	I know that a camera is used to take a photograph.	I know how to capture a photo on a camera or ipad.	I know that digital cameras and ipads are used to take photographs.	I know how to capture a photo.	I know that digital cameras and ipads are used to take photographs.	I know how to upload a photograph onto a computer.

	I know that sounds can be played on computers and cd players.	I know how to play a sound on a computer/cd player.	I know that cameras need to be held still so that the photo is not blurry. I know that sounds can be recorded on different devices.	I know how to record an audio recording. I know how to playback an audio recording.	I know that devices need to be moved slowly and carefully to get the best quality video. I know that sounds can be recorded on different devices.	I know how to change the size of a photo within a document. I know how to move an image within a document. I know how to capture a video. I know how to playback a video clip.
			I know how to open apps on a computer.	I know how to paint with different colours on an app. I know how to correct mistakes using the undo button or eraser. I know how to use different tools to create an image.	I know that icons on a screen represent an app.	I know how to access apps on a screen by double clicking the icon.
					I know that information can be presented in different ways.	I know how to add information to a simple database. I know how to present data in a pictogram. I know how to present data in a bar chart. I know how to read different charts to answer questions about data.
Digital Literacy &	I know that information can be found on the	I know how to play age-appropriate games online safely.	I know that the internet is a place where I can search for information.	I know how to access the internet by clicking on the chrome icon.	I know that the internet is a place where I can search	I know how to open a website via favourites.

research	internet. I know that the internet can be used to watch videos and play games.		I know that a hyperlink is a word or picture that can be clicked on to find additional information.	I know how to double click on hyperlinks to find additional information. I know how to go to a previous page using the back button.	for information. I know that each website has a unique address. I know that a hyperlink is a word or picture that can be clicked on to find additional information. I know that not all information found on the internet will be accurate or useful.	I know how to open a website by typing in a unique address. I know how to use a search engine to find facts using key words.
E-safety	I know that the internet can be used to watch videos and play games. I know that others can be unkind online as well as offline. I know that I can talk to a trusted adult about anything that makes me feel worried.	I know how to speak kindly to others online. I know how to talk to a trusted adult about anything that makes me feel worried online.	I know that I need to follow rules to keep safe online. I know what private information is and that I shouldn't share it online. I know that bullying can happen online as well as offline. I know that I need to talk to a trusted adult about anything that makes me feel worried online.	I know how to interact with others respectfully online. I know how to talk to a trusted adult about anything that makes me feel worried online.	I know how to stay safe by going to appropriate websites for my age. I know that the messages or 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. I know that I must always ask someone's	I know how to behave safely and respectfully online. I know how to talk to a trusted adult about anything that makes me feel worried online.

					permission before taking a photo/video.	

6. PLANNING

Computing Short-term Planning

Year Group: 1   Term: Autumn 1   Topic: Traditional Tales

	Objectives	Teaching & Activities	Assessment	Resources	Differentiation
Session 1	**I know that an algorithm is a set of instructions.** I can write algorithms to complete specific tasks. ☺ **Key Vocabulary:** **Algorithm** **Instruction** **Simple** **Sequence** **Accurate**	Show the children the hexagons with this half term's vocabulary. Go through each word and talk about what they mean. **Algorithm** – instructions, accurate **–** correct, **simple –** not too many instructions at once, **sequence –** having your instructions in the right order. Model giving a child an instruction 'Go over there'. **Key Question: Is my instruction easy to follow? Why not?** It's not precise – I haven't given enough information and told the child exactly where 'there' is. Explicitly teach that when we create an 'algorithm', we need to make sure that our **instructions are simple and sequenced**. Show the example on the IWB and model what the algorithm says. Discuss how it doesn't make sense. What needs to go first? Show the next slide and reiterate that for an algorithm to work, it needs to be in the correct order. Allow the children to work with a partner giving each other 2+ step instructions. Share good examples with the rest of the group.	Focus chn for next lesson:	Key word hexagons Sports equipment e.g. balls, hoops Large space Left and right direction signs	**SEND:** Go through some 1 step instructions with class teacher to start off. e.g. Hop on one leg. Shake your left hand Once confident, complete 1 step with a partner, progressing to 2 step when ready.

8. Subject Specific enhancements

E-safety assemblies

Autumn 1 - *Week 6 (11.10.22)*
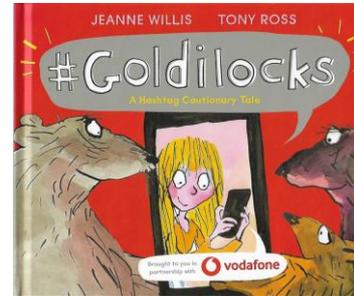
Whole School Assembly – Autumn 1

E-safety objectives
- I can identify how to keep myself safe online. - I know what happens to information, comments or images that are put online.
Starter Activity
Introduce the new characters linked to the new E-safety charter on Powerpoint slides. Explain that the School Council have spent time thinking of our new E-safety Superhero names! **Star** is Internet SMART. She knows that it is not right to share personal information with people online. **Sonic** is Internet ALERT. When researching online, he is quick to check the information with a grown-up to check 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 it 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.
Main Lesson
Explain that in today's story, we are going to use our E-safety charter heroes to help us learn from this character's choices. Go through the powerpoint, reading #Goldilocks and stopping at key points to discuss some of Goldilocks choices. What would our Internet Superheroes do??
Plenary
Give children some time at the end to think about the story and what they could do next time they are online to keep safe.

E-safety newsletters to parents/carers

Autumn e-safety newsletter sent out to parents (Autumn 2, Week 6 - *9.12.22*)
- Reflecting the term's e-safety focus
- Resources for parents to complete with their children
- Information sharing with parents (Links to further reading about information sharing)

Spring e-safety newsletter sent out to parents (To be sent out Spring 1, Week 6 - *10.02.22*)
- Theme surrounding Safer Internet Day topic