A Curriculum For Hindhayes - Building Computing Knowledge and Skills

Hindhayes Learning Experiences EYFS	**Experiences**	Using mechanical toys. Operating simple ICT equipment – ipads, remote control vehicles, bee bots, Yoto's etc. Exploring technological toys with knobs or pulleys, or real objects such as cameras or mobile phones. Make toys work by pressing parts or lifting flaps to achieve effects such as sound, movement or new images. O bserve adults using computers to retrieve information. Using simple ICT programmes / aps in their play. Observing the use of technology at home and school. Using ICT to support learning in the classroom.	**Language**	Appropriate language will be used when children engage with technology to support future learning. **e- safety**: Choices, Internet, Website, Secret, Safe, Adult **Programming:** Equipment, Buttons, Movement, Work **Multimedia:** Screen, Mouse, Images, Keyboard, Paint **Technology in our lives:** Technology, Share, Create, Internet **Data handling:** Collect, Set of photos, Count, Organise
	Texts	Goldilocks – A Hashtag Cautionary Tale, The Magic School Bus Gets Programmed, But It's Just A Game, Troll Stinks Cultural capital books: Little people Big Dreams Alan Turing, Steve Jobs, Ada Lovelace		
	Linked Early Learning Goals: Communication and Language, - Listening and attention, Speaking. **Physical Development,** Fine Motor Skills **Personal, Social and Emotional Development** Self regulation, Managing Self, Building Relationships, **Literacy** Reading, Writing **Expressive Arts and Design,** Creating with materials, Being Imaginative **Mathematics,** Number,			

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	Computing systems and networks	**Creating media**	**Programming A**	**Data and information**	**Creating media**	**Programming B**
National Curriculum Statutory Requirements	Recognise common uses of information technology beyond school. 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	Use technology purposefully to create, organise, store, manipulate and retrieve digital content.	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. Recognise common uses of information technology beyond school.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. 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. Recognise common uses of information technology beyond school.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. 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.	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. 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.
Hindhayes Sticky Knowledge Year 1 Year 2	■ Effective use of tools — Use software tools to support computing work ■ Safety and security — Understand risks when using technology, and how to protect individuals and systems					
	■ Computer systems — Understand what a computer is, and how its constituent parts function together as a whole. ■ Impact of technology — Understand how individuals, systems, and society as a whole interact with computer systems.	■ Creating media — Select and create a range of media including text, images, sounds, and video.	■ Algorithms — Be able to comprehend, design, create, and evaluate algorithms.	■ Computer networks — Understand how networks can be used to retrieve and share information, and how they come with associated risks. ■ Data and information — Understand how data is stored, organised, and used to represent real-world artefacts and scenarios.	■ Creating media — Select and create a range of media including text, images, sounds, and video.	■ Programming — Create software to allow computers to solve problems.
	Technology around us - Knowledge Technology is used in a variety of ways in School. Technology should be used responsibly. **Information technology around us - Knowledge** Information Technology around us can be used to improve our world in school and beyond.	**Digital painting – Knowledge** Art work can be made using a variety of media including ICT. **Digital painting - Skills** Choose appropriate tools in a program to create Making comparisons with working non-digitally. **Creating media Digital Photography – Knowledge** Photographs can be taken using ICT. Photographs can be altered using apps and programs. **Creating media Digital Photography - Skills** Capturing and changing digital photographs for different purposes.	**Moving a robot - Knowledge** An algorithm is a set of instructions. Instructions can make something move or work. Instructions need to be given in the right order. **Moving a robot - Skills** Write short algorithms and programs for floor robots, and predicting program outcomes. **Robot algorithms - Knowledge** An algorithm can make something more or work. An algorithm can sometimes have a mistake. A problem in an algorithm is called a 'bug' 'Bugs' need to be repaired to solve a problem. Solving a problem in an algorithm is called 'debugging'. **Robot algorithms - Skills** Creating and debugging programs, and using logical reasoning to make predictions.	**Grouping data – Knowledge** Objects can be made from different materials. Materials have a range of properties. Some materials have more than one property. Objects can be grouped together using properties. **Grouping data - Skills** Exploring object labels, then using them to sort and group objects by properties. **Pictograms – Knowledge** Information can be collated into charts. A tally chart can be used to collect information data. A pictogram can be used to show information data. A pictogram can be made using ICT. **Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Digital writing – Knowledge** A keyboard can be used to produce writing on a screen. The shape, size and colour of digital writing can be changed using ICT. **Digital writing - Skills** Using a computer to create and format text, before comparing to writing non-digitally. **Making Music – Knowledge** A piece of music has a rhythm. A rhythm can be fast or slow A rhythm is repetitive. **Making music - Skills** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	**Programming animations – Knowledge** An animation is a short film including movement. An animation is made by taking a series of photographs or shots. An animation can be used to tell a simple story. **Programming animations – Skills** Designing and programming the movement of a character on screen to tell stories. **Programming quizzes – Knowledge** An algorithm can be used to make an interactive quiz. **Programming quizzes - Skills** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.