Computing Curriculum Development

Scheme of Work

Reception

	Learning Objectives	Examples
Using technology	• Use a simple program on the computer/tablet • Use a range of hardware and software, camera, board, tablet, computer, bee bot, code a pillar • Select and use technology for a purpose, ie, a camera for a photo, a toaster for toast, a fridge for cooling	Selecting on the IWB, playing a game. Use a camera, tablet, netbook Use everyday technology such as light switches remote controls, fridge or freezer for its purpose
Digital literacy	• Begin to develop understanding of safety online through discussions when accessing technology	Talk about the WWW and how it connects lots of people Discuss keeping ourselves safe Internet safety stories
Information Technology	• Understand information can be retrieved from computers, ie, find a picture or information on the internet with support	Find pictures and songs together on the internet Talk about the register and how we use it to store information
Algorithms and programming	• Use a programmable robot to direct. • Explore the use of the directional buttons and what they do	Use a code a pillar or bee bot to explore giving instructions. Use partners to direct using positional language

Scheme of Work

Year One

	Learning Objectives	Examples
Using technology	Develop skills in using different tools to control technology. • Begin to use and understand the purpose of a range of different technology. • Begin to develop typing skills, to enable independent access to computers.	Using a mouse Selecting on the IWB Use a camera, tablet, netbook Typing using keyboard in Word/notes Logging into and out of the computer as a class Talk about arrangement of keys on a keyboard (could be printed for role play)
Digital literacy	• Understand the importance of keeping personal information safe private • Use all technology safely	Class ICT passport or rules to follow Play guess the person game: giving too much or little information to keep selves secret Safer internet stories
Information Technology	• Create digital content with support • Store digital content with support • Retrieve digital content with support • Use a camera purposefully • Use a website to find information	Type work or make pictures Load images Save work with support Open work with support Take photographs Look on the internet for information
Algorithms and programming	• Create a series of instructions with two or more steps • Plan a journey for a programmable robot including a turn • Discuss the journey and if the instructions were precise enough	bee bots Partners to direct as robots 100 grid on playground/work cards with counters

Computing Curriculum Development

Scheme of Work

Year Two

Theme	Learning Objectives	Examples

Using technology	• To continue to develop typing skills, speed and accuracy to enable independent and efficient access to a computer. Begin accessing own profile • To understand the purpose of, and begin to independently use a range of different technology. Research online in smaller groups	Dance mat typing Log in and out using class Log in, Log in and out individually Camera Tablet I pad
Digital Understanding and Safety	• Develop understanding of how technology is used in and out of school • Use technology respectfully and with caution • Know where to go for help if they are concerned	Talk about phones, TV, internet, email, skype IT Passport/Class Rules Safer internet resources and stories shared
Information Technology	• Use and Navigate the internet to complete searches and find information in small groups • Begin to organise digital content in appropriate ways • Retrieve and manipulate digital content	Search Engines Begin to save work in own folders Find and change own work
Algorithms and programming	• Understand an algorithm is a simple set of instructions • To understand when we press keys on a computer, button on a camera or icon on a tablet it uses precise instructions to achieve the outcome • Write a simple program with 4 or more steps including turns and direction • Find errors and amend instructions given to achieve a desired outcome(debug) • Predict what the outcome of a simple program will be (ie, where a robot will end) (logical reasoning) • Understand that programs require precise instructions to work accurately	Play blind fold partners Talk about wrong instructions and what happens Play cover the keyboard and see how accurate instructions are Use Bee bot/floor turtle Make mistakes on the computer-talk about effect Follow instructions with fingers to predict end place- test with bee bot

Computing Curriculum Development

Scheme of Work

Year Three

Theme	Learning Objectives	Examples

Using technology (objectives throughout KS2)	Continue to develop typing skills to develop competency in digitalizing written work, including Capital letters, full stops and commas. • Understand the purpose of a range of different technology. • Independently use a range of technology • Make decisions for themselves about when to use technology, explaining own choices. • Decide upon which piece(s) of technology to use, which software/tools to use on the technology and be able to explain own choices to others with simple reasons.	Dance mat typing Word Look at data bases, publisher and power point and decide on which is best use for different purposes
Digital Literacy	• Identify where technology is best used and where it adds little or no value • Understand there are different ways they can get help if they are concerned • Understand what computer networks do and how they provide services • Respectfully and responsibly use technology	Allow independent choice of when to digitalize some work IT Passport/Class Rules Understand Logging in system and how our school is networked Discuss online use and cyber bullying
Information Technology	• Collect information • Design and create content • Manipulate and improve digital images • Present information • Search for information on the internet • Use a range of software for similar purposes	Look at data bases, publisher and power point and decide on which is best use for different purposes Crop a photo
Algorithms and Programming	• Design a sequence of instructions, including directional instructions • Work with various forms of input (putting information into the computer system, camera's images, text, data, video's) • Work with various forms of output (what the computer sends out, ie, images on screen, printing, sound,)	Floor turtle Maths coding game

	• Write programmes that accomplish specific goals, begin to access Scratch as a class	Direct the car to the finish line

Computing Curriculum Development

Scheme of Work

Year Four

Theme	Learning Objectives	Examples
Using technology	Continue to develop typing skills to develop competency in digitalizing written work, including Capital letters, Full stops, commas, question marks and exclamation marks.	Dance mat typing Word

	• Understand the purpose of a range of different technology. • Independently use a range of technology • Make decisions for themselves about when to use technology, explaining own choices. • Decide upon which piece(s) of technology to use, which software/tools to use on the technology and be able to explain own choices to others with good reasoning.	Look at data bases, publisher and power point and decide on which is best use for different purposes. Choose when to digitalise work to create a better outcome, i.e when adding images, borders
Digital Literacy	• Recognize acceptable and unacceptable behavior using technology • Understand the use of search engines and think about the terms used to search carefully	IT Passport Discuss online use and cyber bullying
Information Technology	• Collect and present data • Produce and upload visual and audio content • Select and use software to accomplish given goals	Data bases to show results Publisher Take and load photos and videos
Algorithms and programming	• Debug a programme finding more than two faults • Experiment with variables to control models on programmes such as scratch • Give an on screen robot specific instructions that takes them from A-B, • Accurately predict and explain why they think something will happen	Find mistakes in a set of instructions. (bee bot sequence, math's coding, secret letter writing, cars on mat) Scratch Logo

Computing Curriculum Development

Scheme of Work

Year Five

Theme	Learning Objectives	Examples
Using technology	Continue to develop typing skills to develop competency in digitalizing written work, including punctuation related to SPAG work • Understand the purpose of a range of different technology,	Dance mat typing Word Look at data bases, publisher and power point and decide on which is best use for different purposes

	identify when data bases, spread sheets and presentation software is most appropriately used. • Independently use a range of technology • Make decisions for themselves about when to use technology, explaining own choices about its effect and how it enhances the outcome. • Decide upon which piece(s) of technology to use, which software/tools to use on the technology and be able to explain own choices to others with vaild and accurate reasons.	Choose when to digitalise work to create a better outcome, i.e when adding images, borders, videos, presenting
Digital Literacy	• Understand that you have to make choices when using technology and that everything is not always true or safe • Understand the use of search engines and how results are ranked	-IT Passport -Discuss online use and cyber bullying Research data on various sites to compare validity -Look at hits on a page
Information Technology	• Look at and analyse information • Edit and use images and film for a purpose • Evaluate information	Data bases/graphs Publisher Power point Take and load photos and videos Photo story3, add movement, sound, edit mistakes
Algorithms and programming	• Combine sequences of instructions and procedures to have a planned effect/output • Design algorithms that use repetition and two way selection • Use technology to control an external device	-Design PowerPoint inserting image, timing, audio. -Choice flow diagrams to show if, then -Write algorithm as a flow chart for car park barrier (if no of cars less than 50 open, if 50 don't open), coin machine, roller coaster start, fire alarm) -Write simple data base formula -Math's problems and solutions -Scratch -Logo External device (ie, turn on the screen, link laptop to hall, wireless tablet to screen use)

Computing Curriculum Development

Scheme of Work

Year Six

Theme	Learning Objectives	Examples
Using technology	Continue to develop typing skills to develop competency in digitalizing written work, including all punctuation learnt in SPAG. • Understand the purpose of a range of different technology. Identify when data bases, spread sheets, image, audio and	Dance mat typing Word Look at data bases, publisher and power point and decide on which is best use for different purposes Choose when to digitalise work to create a better outcome, i.e when adding images, borders, audio, video.

	presentation software is most appropriately used. • Independently use a range of technology • Make decisions for themselves about when to use technology to improve their work, explaining own choices about its effect, enhancement on the end product, and edit to improve further • Decide upon which piece(s) of technology to use, which software/tools to use on the technology and be able to explain own choices to others and how enhancements have been made • Use software to analyse and present data to a group accurately	Input data and produce graphs to support work on data bases
Digital literacy	• Discuss the risks of online use of technology • Identify how to minimise risks of using technology • Identify personal information suitable and not suitable to give- giving reasons and explanations • Identify and understand a range of ways to report concerns • Evaluate Digital content from search engines and talk about ranking order and appropriateness of searches	IT Passport/Classroom rules Discuss online use and cyber bullying. Identify the risk presented when certain information is given- ie, first name, surname, address Research data on various sites to compare validity of its content Look at hits on a page
Information Technology	• Select, use and combine software on a range of digital devices • Use a range of technology for a specific project combining skills and content	Data bases/graphs Publisher PowerPoint Take and load photos and videos Photo story3
Algorithms and programming	• Design a solution by breaking a problem up • Explain how an algorithm works • Explore what if? Questions by planning different scenarios for controlled devices	Design PowerPoint inserting image, timing, audio, video, editing timings and flow as required Choice flow diagrams to show if, then

	• Use logical reasoning to detect errors in algorithms • Use selection in programmes and develop independent programming in scratch • Work with variables • Recognise that different solutions can exist for the same problem.	Write algorithm as a flow chart for car park barrier (if no of cars less than 50 open, if 50 don't open), coin machine, roller coaster start, fire alarm) adding in more variables to effect outcome Write simple data base formula Math's problems and solutions Scratch Logo