ICT SCHEME OF WORK

EYFS	ICT Scheme of Work	Blue Gate Fields Infant School Learn | Grow | Achieve

About this unit

This unit covers all the requirements of Understanding the World in a way that's intended to develop childrens' understanding of the concepts, practices and perspectives that underpin programming and other aspects of computer science, while providing ample opportunity for creative, collaborative project work in which children can acquire the information technology skills they'll need. It will also help children to understand the implications of technology for individuals and society as they become digitally literate.

The approach adopted here is one grounded in the best primary practice. Ideas of learning through experiment, discussion and making are woven through the scheme. The topic-based approach provides enough flexibility for you to link these activities with work in other subjects

Enquiry One: Developing ideas and making things happen – Modelling and simulation, Logo and control and Data Logging

ICT SKILSS	ICT KNOWLEDGE AND UNDERSTANDING
• Respond to simple cause and effect toys (push a button to hear a sound). • Choose and use appropriate role play electronic toys in the course of their play (builders' sets, doctors' equipment, kitchen equipment, cash dispensers etc.). • Play with a simple adventure programme or simulation. (At the Doctors, At the vets) • Use simulation / role play software as an impetus for their own investigations. Begin to compare reality with virtual worlds. • Respond appropriately to what happens in simulations and begin to notice that different responses result in different outcomes. • Play with a variety of electronic toys. • Play with old remote controls in role play • Use a remote control to operate devices (TV, robot, toys) • Play with simple toys that respond immediately to a single command • Give simple instructions to another child to navigate them around a course. • Program a simple floor robot (Bee Bot / Roamer) to carry out a short sequence of steps (planning ahead) • Begin to understand cause and effect when controlling toys • Play with equipment that simulates control devices (traffic lights, pelican crossing, scanner devices, cash tills etc.	• Begin to understand computers are good at represent real or fantasy situations. • Talk about the rules found in a simulation. • Understand computer representation allows the user to make choices and that different decisions produce different outcomes • Understand that devices respond to commands • Talk about devices in the home that are controlled by commands. • Begin to be aware of and have opportunities to use computer controlled devices in the outside world (pelican crossing, automatic doors, cash point machines supermarket technology) • Be aware that digital devices (such as metal detectors, thermometers and microphones) can be used to show external changes.

- Use a metal detector to search for buried treasure.
- Respond to simple timing devices
- Respond to simple data loggers and software that show variation in sound levels, for example, on a simple visual display
- Children are not expected to develop their own skills in using data logging equipment until KS2. Demonstrations by adults of a data logger monitoring live data (e.g. changing sound levels over time) can be used very effectively however.

ASSESSMENT OPPORTUNITIES	ICT OUTCOMES
• Use a computer simulation of an everyday scenario. • Explain what the choices are and the outcomes of different choices. • Give reasons why it is useful to have simulations of real situations. • Use a variety of programmable toys and explain what they can do. • Give examples of devices that are controlled by computers in the real world.	Modelling and Simulation EYFS: Complete a simple program on a computer. Use ICT based toys appropriately in role play. Y1: Make simple choices to control a simple simulation program. Y2: Children are able to play an adventure game and use a simple simulation, making choices and observing the results. Their conversation shows they understand that computers are good at replicating real life events and allowing them to explore contexts that are otherwise not possible Logo and Control EYFS: Use programmable toys to support their learning. Y1: Control simple everyday devices to make them produce different outcomes. Y2: Control a device, on and off screen, making predictions about the effect their programming will have. Children can plan ahead.

SUGGESTED RESOURCES

- Paint program with stamps e.g. Fresco
- 2 simple city
- Story maker
- Modelling websites e.g. BBC Class clips, Cbeebies, Poisson rouge
- Remote control toys and devices
- Floor robot (Roamer)
- Mats and obstacles
- Roamer world
- Roamer world project launcher
- 2go
- 2DIY maze
- Digital camera
- Video camera
- CD Player
- Microphone

TECHNICAL VOCABULARY

Simulation, made-up, real, programmable, instructions, forwards, play, stop, record, data logger, data logging software

Enquiry Two: Exchanging and Sharing Information– Sound and Music, Digital imagery, Text Processing and Multimedia and Electronic communication (email, video conferencing)

ICT SKILSS	ICT KNOWLEDGE AND UNDERSTANDING
Sound Recorders • Respond to pre-recorded sounds. • Use tape recorders (broken ones too, in role play). • Use voice amplifying or changing equipment and notice the effect. • Use simple music devices, such as karaoke machines to play sounds and respond appropriately to them. • Use simple buttons to play back recorded sounds (remotely and on computer). • Record sounds with a microphone (remotely and connected to a computer). Music • Explore electronic keyboards (music) possibly linked to a computer if appropriate. • Compose music using icons to represent musical phrases (Compose World, 2Simple Music Toolkit). Graphics Packages • Use the tools in a simple painting program (e.g. brush, fill tool, colour selection, stamp) perhaps on a whiteboard or interactive screen. • Use an object based graphics program (such as ActivInspire) to create a scene by dragging objects into place on a background. Digital photographs • Use a digital camera (both real and in role play). • With help download images from a camera to computer. • Experiment with light and images using OHPs, torches, fairy lights etc. Use digital camera to record the result. Video • Capture simple short video clips. • With help download captured video to simple software. (Digital Movie Creator 3) Text Processing and Multimedia • Developing mouse control – moving, clicking, dragging etc. • Use simple drag and drop matching software – first with pictures or sounds moving to letters and text. • Begin to use a keyboard (with support) and notice the effect on screen. • With support (and a lower case keyboard) type simple words, their name, etc...	• Understand that technological devices can be used to record and play back sounds. • Be aware that sound can be recorded on the computer as a sound file. • Recognise that an electronic keyboard can be used to select and control sounds. • Understand that computers are good for still and moving images (video). • Understand there are a variety of tools in a graphics package and they each have a different purpose. • Understand digital still or video cameras (and later visualiser or scanners) can capture an image. • Talk about their use of a paint package and their choice of tools. • Understand that a keyboard and mouse are key tools for navigating a computer and for entering text. • Begin to understand that ICT can be used to communicate ideas in different ways. (E.g. text, images, tables, sound). • Know that text comes in different colours, sizes and styles. • Begin to understand that all kinds of ICT tools are used for different modes of communication • Understand that messages can be sent electronically over distances and that people can reply to them. • Understand that communications can be in pictures, sound and text

• With help add captions to photographs, graphics and sound (perhaps choosing words from a prepared word list). • With help begin to create simple talking pages in ActivInspire, PowerPoint or Clicker5 <u>Electronic communication</u> • Use telephones / walkie talkies in role play. • With support, write and send a short email from a class account (eg a letter to Santa). • With adult help (at home and in the setting) use a VLE type environment to maintain dialogue with parents for their learning journey. • With adult help and supervision participate in a simple video conference.	<u>E Safety</u> • Due regard for safety needs to be taken by supervising adults. If and where appropriate discuss the need for this with children

ASSESSMENT OPPORTUNITIES	**ICT OUTCOMES**
• Record sounds from the environment using a variety of ICT sources e.g. sound buttons, photo album, and microphone. • Create a short composition using icons to represent phrases. • Take digital images and videos • Describe and talk about their work when using. • ICT and their choice of tools. • Log onto the computer using their username. • Create a simple talking story. • Contribute to a class email. • With support, contribute to a forum on the VLE.	<u>Sound and Music</u> **EYFS:** Play with and respond appropriately to musical toys and devices that record sound. **Y1:** Chose suitable sounds from a bank to express their ideas. Record short speech. **Y2:** Compose music from icons. Produce a simple presentation incorporating sounds the children have captured, or created. <u>Digital Imagery</u> **EYFS:** With support where appropriate: take and use digital pictures, control and respond to video, use simple tools in a painting program. **Y1:** Use a range of simple tools in a paint package / image manipulation software to create / modify a picture. **Y2**: Use a range of tools in a paint package / image manipulation software to create / modify a picture so that it communicates a specific idea. Create a simple animation to tell a story. <u>Text Processing and Multimedia</u> **EYFS:** Use a mouse and keyboard to interact with age appropriate computer software. Begin to understand that this is a key means of communicating messages. **Y1:** Work with others and with support to contribute to a digital class resource which includes text, graphic and sound elements. **Y2:** Generate their own work, (with help where appropriate with multimedia) combining text, graphics and sound. Save, retrieve and edit their work. <u>Electronic communication</u> **EYFS:** Understand that messages are conveyed by electronic means. With support, begin to use email to communicate with others. **Y1:** Contribute ideas to a class email to another class / school etc.

	Y2: Work collaboratively by email to share and request information of another class or story character. Begin to understand the need to abide by school e-safety rules.

SUGGESTED RESOURCES

- VLE
- Forum
- Purple mash
- school's webmail
- 2Simple Music Toolkit
- 2Sequence
- 2Create a story
- ActivInspire
- Microphones
- Recordable pen
- Talking photo album
- Voice changer
- Electronic keyboard
- Espresso
- 2Paint
- 2Animate
- 2Design and make
- 2Publish+
- Textease
- Clicker 5
- Digital camera
- Flipcam
- Visualiser
- 2Create
- 2Connect

TECHNICAL VOCABULARY

Record, playback, compose, brush, stamp, fill, video, click, double click, keyboard, mouse, email, VLE, internet safety, video conference

Enquiry Three: Finding things out – Data Handling (Database, graphing) and Research

ICT SKILSS	ICT KNOWLEDGE AND UNDERSTANDING
<u>Data Handling</u> • Begin to develop simple classification skills by carrying out simple sorting activities (probably away from the computer) • With help use simple graphing programs or other software to produce pictograms (e.g. Drag picture in an ActivInspire flipchart to record who is here today). • Sort and classify a group of items by asking simple yes / no questions. <u>Research</u> • With help (and an appropriate internet filter) search for and choose images from the internet. • With support, use appropriate websites or CD ROMs to locate small amounts of information. • Use a digital microscope to look more closely at objects. • With support, use appropriate buttons, menus and hyperlinks to navigate web sites / CD ROMs or stored information. • Access different information using a range of equipment (tape recorders, website, TV, DVD etc.) • Enter text into a search engine to find specific given web sites.	• Begin to understand that computers provide access to a variety of information in different forms. • Begin to appreciate the relationship between graphical representations and real data. • Begin to understand that ICT (the internet) gives rapid access to a wide variety of information and resources. • Talk about their use of ICT and other ways of finding information. • Begin to develop key questions and find information to answer them. At this stage children's use of the internet needs to be carefully guided by adults. It is not reasonable to allow children unsupervised access to search

	engines. Appropriately selected CD ROMs provide a good means of achieving this.

ASSESSMENT OPPORTUNITIES	ICT OUTCOMES
• Gather information about the class using photographs then transfer to a simple pictogram program. • Use a search engine to find specific information including images. • Talk about their use of ICT and ways of finding information. • With support, navigate a CD ROM/ webpage to find information.	Data Handling **EYFS:** With support, use a computer to store simple information in a structured way (this might just be pictures) **Y1:** As a class or individually with support, children use a simple pictogram or painting program to develop simple graphical awareness / one to one correspondence. **Y2:** Use a graphing package to collect, organise and classify data, selecting appropriate tools to create a graph and answer questions. Enter information into a simple branching database, database or word processor and use it to answer questions. They save, retrieve and edit their work. Research **EYFS:** With support and supervision use a simple search engine to find information (pictures perhaps) on the internet. **Y1:** As a class exercise children explore information from a variety of sources (electronic, paper based, observations of the world around them, etc.). They show an awareness of different forms of information **Y2:** Children use a search engine to find specific relevant information to use in a presentation for a topic. They save and retrieve their work.

SUGGESTED RESOURCES		
• 2count • 2graph • Internet explorer	• Child friendly search engines • TV • Espresso	• CD players • DVD • www.educationcity.com

TECHNICAL VOCABULARY
Pictogram, information, graph, search engine, equipment