Meriden C of E Primary School - National Curriculum by Year Group

Computing

Foundation Stage	ELG Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.			Skills from 40-60 months (Development matters) • Completes a simple program on a computer. • Uses ICT hardware to interact with age-appropriate computer software.		
	Year 1	**Year 2**	**Year 3**	**Year 4**	**Year 5**	**Year 6**
Finding things out	Recognise common uses of information technology beyond school. Understand programs are executed by following precise and unambiguous instructions. *RESEARCH* • Know that information is all around us in a variety of forms. *WORKING WITH DATA* • Use key words to describe objects (My World, Word bank with text program). • Use a pictogram to answer simple questions. • Enter data into a graphing package to create a pictogram and use it to find answers to simple questions. • Present verbally what has been learnt from a pictogram.	Recognise common uses of information technology beyond school. Understand what algorithms are and how they are implemented as programs as programs on digital devices. Understand programs are executed by following precise and unambiguous instructions. *RESEARCH* • Use menus to locate information on a webpage • Use an index to locate information. • Use key words to locate information. • Use hot links, hyperlinks to search for information on the internet. • Use a binary database to answer questions. • Use a graphing program to answer questions. • Use a database to answer questions. *WORKING WITH DATA* • Know that there are	Use logical reasoning to explain how some simple algorithms work Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content. *RESEARCH* • Use a database to generate bar charts and interpret data. • Use the database to answer simple questions by sorting a field. • Use the database to answer simple questions by using search criteria. *WORKING WITH DATA* • Add a record to a file in a computer database.	Use logical reasoning to explain how some simple algorithms work Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content. *RESEARCH* • Search a branching database to identify objects. *WORKING WITH DATA* • Create a series of yes/no questions to identify objects. • Produce a tree diagram to identify objects. • Create a branching database which identifies objects uniquely. • Design questionnaires which match the structure of the database. • Produce and explain the meaning and purpose of pie charts. • Produce and explain the meaning and purpose of line graphs.	Use logical reasoning to explain how some simple algorithms work Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content. Understand computer networks including the internet and how they can provide multiple services, e.g. the world wide web and the opportunities that they offer for communication and collaboration. *RESEARCH* • In searches use AND, OR and NOT e.g. search for 'Birmingham AND NOT USA'. • Use 'more than, less than and including' in searches. • Use the Internet to find information using keywords and search engines. *WORKING WITH DATA* • Use graphs to provide	Use logical reasoning to explain how some simple algorithms work Use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content. Understand computer networks including the internet and how they can provide multiple services, e.g. the world wide web and the opportunities that they offer for communication and collaboration. *RESEARCH* • Use the Internet to find resources which can be edited for use in projects. • Use a favourites list to find information • Print pages from the Internet. • Use more precise search techniques to find information e.g. AND or quotation marks. • Skim and select information. • Use/create hyperlinks to find information • Make my own favourites list. • Enter a web address (URL) to find a web site.

		different programs for collecting data. • Know that there are different kinds of questions so we need to use different kinds of information programs to find our answers.		• Produce and use bar charts, pie charts and line graphs appropriately.	supporting evidence for their conclusions about relationships. • Identify some of the implications of incorrect data. • Identify incorrect and implausible data. • Identify an incorrect point on a line graph. • Enter data into cells. • Enter data and formulae into cells, modify the data, make predictions of changes and check results. • Create and use a spreadsheet to produce costings which are within budget. • Use 'SUM'.	• Copy and paste from the Internet. • Acknowledge the source of information and understand issues of copyright. • Use email to contact others to share information and ideas. _WORKING WITH DATA_ • Identify and enter the correct formulae into cells, modify the data, make predictions of changes and check them. • Copy formulae to create tables of results. • Create graphs from spreadsheets. • Create and use a spreadsheet to answer a 'What if …..?' mathematical investigation.

| Developing ideas and making things happen | Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Create simple programs

MAKING THINGS HAPPEN
(Control and sensing)

• Put instructions in the correct sequence to achieve the correct results.
• Give instructions in a common language.
• Write a sequence of instructions for others to carry out.
• Write instructions in an agreed format using standardised unit lengths.
• Predict the outcome of a set of instructions and test the results.
• Write sets of instructions and interpret them correctly and make and test predictions.

• Use a cassette recorder to collect and store information as sound. | Use technology purposefully to create, organise, store, manipulate and retrieve digital content.

Create simple programs

MAKING THINGS HAPPEN
(Control and sensing)

• Enter single commands to control a floor turtle and predict the outcome.
• Enter a sequence of commands to control a floor turtle and predict the outcome.
• Programme the floor turtle to repeat instructions.
• Solve a problem and explain to others how to use the 'tools' or 'keys'.
• Work with others to make decisions and solve a problem.
• Using Roamer or similar, plan and carry out a simple 'journey' using the language and rules of Logo | Use sequence, selection and repetition in programs, working with variables and various forms of input and output.

Select, use and combine a variety of software on a range of digital devices.

MAKING THINGS HAPPEN
(Control and sensing)

• Locate and record sounds, compare ways of recording and storing sounds.
• Understand how musical phrases can be organised and re-organised using icons.
• Use ICT to create, organise and reorganise sounds. | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.

Use sequence, selection and repetition in programs, working with variables and various forms of input and output.

Select, use and combine a variety of software on a range of digital devices that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

MAKING THINGS HAPPEN
(Control and sensing)

• Compare the language of Logo using a floor turtle and a screen turtle.
• Produce two shapes on screen and learn to move the screen turtle using PENUP and PENDOWN. | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.

Use sequence, selection and repetition in programs, working with variables and various forms of input and output.

Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

MAKING THINGS HAPPEN
(Control and sensing

• Write a procedure to control one output device e.g. light, using WAIT.
• Write a precise sequence of instructions to control a number of output devices e.g. traffic lights.
• Write a sequence of instructions, test it and correct any errors or omissions.
• "What happens when …?". | Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.

Use sequence, selection and repetition in programs, working with variables and various forms of input and output.

Select, use and combine a variety of software on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

MAKING THINGS HAPPEN
(Control and sensing)

• Learn that an input device can be used to cause an event.
• Write a procedure to check inputs and switch on an output.
• Write and test a procedure to check two inputs and an output event.
• Write procedures for inputs and outputs to simulate everyday events or to test on working models. |

DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)	DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)	DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)	DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)		DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)
• Explore a simple adventure game • Solve a simple problem. • Choose an option. • Achieve a desired effect by choosing particular options. • Use a variety of types of information - text, pictures, sound, colour.	• Try out ideas using art and text/publishing programs to create greetings cards and other useful outcomes.	• Use a simulation to make and explore predictions and to identify patterns. • Use Logo to make and explore predictions and to identify patterns e.g. that you need a space, that the number relates to steps or degrees, that the bigger the number the bigger the turn. • Demonstrate to others and/or prepare a list of instructions for others to use. • Enter data into a computer simulation i.e. make a choice. • Solve an adventure game or similar and describe or show in diagrams how this was achieved. • Demonstrate a more planned approach to solving problems rather than a random choice of options.	• Use the repeat instruction and predict what will happen. • Name and edit sequences of instructions. • Combine procedures to form a new procedure. • Use Logo to make and explore predictions e.g. that the number of repeats affects the shape of a polygon. • Use Logo to solve problems in shape angle and measure	• Use a sensor to record changes in temperature, light or sound. • Use a sensor to take a series of accurate readings over a period of time and explain the advantages of using a computer to do this. • Use a sensor to monitor external conditions in relation to the environment e.g. noise pollution. • Discuss the advantages of using a remote sensor. *DEVELOPING IDEAS AND TRYING THINGS OUT (Modelling)* • Use a graphical model to solve a problem - identifying patterns and relationships, perhaps working to scale. • Use the features of programs and a variety of media to create suitable presentations for particular audiences e.g. PowerPoint. • Use spreadsheet models to solve problems.	• Use sensors in a geography or science experiment to record changes in the environment over a period of time and explain the results e.g. testing insulation properties by measuring the drop in temperature of the liquid in two containers.

Exchanging and sharing information	Use technology safely and respectfully, keeping personal information private.	Use technology safely and respectfully, keeping personal information private.	Use technology safely, respectfully and responsibly, recognising acceptable/ unacceptable behaviour.	Use technology safely, respectfully and responsibly, recognising acceptable/ unacceptable behaviour.	Use technology safely, respectfully and responsibly, recognising acceptable/ unacceptable behaviour.	Use technology safely, respectfully and responsibly, recognising acceptable/ unacceptable behaviour.
	Understand where to go for help and support.	Understand where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Identify a range of ways to report concerns about content and contact.	Identify a range of ways to report concerns about content and contact.	Identify a range of ways to report concerns about content and contact.	Identify a range of ways to report concerns about content and contact.
	• Print out work unaided. • Assemble meaningful sentences. • Use a word bank to create simple sentences. • Enter single letters from a keyboard to write words and sentences. • Explain meaning from sounds, pictures and text. • Know that computers can use icons to provide information and instructions. • Use a painting program to create a representation and simple patterns • Select and add stamps or clipart to a picture. • Record and play sounds	• Select and use appropriate tools to create pictures and patterns. • Control the pen and then flood fill pictures. • Save work. • Know when and how to use the SPACE BAR. • Know when and how to use the RETURN / ENTER key.	• Read and respond to e-mails. • Send annotated replies to e-mails. • Send e-mails. • Attach files to e-mails. • Use the shift key to type characters, such as question marks.	• Use the symmetry tool to create patterns. • Use a variety of materials, created on and away from the computer; and use them to make a final image. • Use sound effects and music with text. • Create repeating patterns using the stamps and/or copy tool.	• Use a desk top publishing package or multimedia package to create presentations for particular audiences. • . • Use knowledge of text marking to extract key points from texts. • Use images from a scanner or digital camera in projects. • Create objects using an object based graphics package. • Create multimedia presentations.	• Create sample screens and link them in different ways e.g. linear, branching structures, web-like structures. • Design pages and links which present the user with clear information. • Use email to contact others to share information and ideas. • Use a scanner or digital camera to create images for use in design. • Create a page of sounds which are activated by appropriately named and positioned buttons.

Reviewing, modifying and evaluating work as it progresses	To be able to evaluate and apply information technology, including new or unfamiliar technologies.	To be able to evaluate and apply information technology, including new or unfamiliar technologies.	To detect and correct errors in algorithms and programs. Solve problems by decomposing them into smaller parts Confident, creative and competent users of ICT	To detect and correct errors in algorithms and programs. Solve problems by decomposing them into smaller parts Confident, creative and competent users of ICT	To detect and correct errors in algorithms and programs. Solve problems by decomposing them into smaller parts Confident, creative and competent users of ICT	To detect and correct errors in algorithms and programs. Solve problems by decomposing them into smaller parts Confident, creative and competent users of ICT
	• Move words into the correct positions. • Move pictures into the correct positions.	• Create sentences, save and edit them later. • Correct and edit pictures using appropriate tools like UNDO. • Save work in text form.	• Alter font type, size and colour for emphasis and effect. • Amend text and save changes • Amend text using the correct key combinations. • Create and amend tunes using compositional software	• Use font sizes and effects appropriately. • Use cut and paste to organise and reorganise text on screen e.g. bullet points. • Edit text using delete, insert and overwrite as appropriate. • Know how to use a spellcheck. • Use a variety of brush sizes and effects to create pictures. • Select areas, copy and resize them.	• Use the understanding of the editing tools of a word-processor to write different versions and genres of texts. • Understand the limitations of paint packages for modelling. • Use object based graphics packages to manipulate shapes, move, rotate, resize.	• Evaluate a webpage and recognise the features of good page design.