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|  | Foundation Stage | | | YEAR 1 | | YEAR 2 | | YEAR 3 | | | YEAR 4 | | | YEAR 5 | | YEAR 6 | | |
| **E-SAFETY** | ***Children recognise that technology is used in places such as schools and homes.*** | | | ***Pupils should be taught to use technology purposefully to organise and manipulate digital content.*** | | | | ***Pupils should be taught to use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour, identify a range of ways to report concerns about content and contact. Be discerning in evaluating digital content.*** | | | | | | | | | | |
|  | | | Skills | Knowledge | Skills | Knowledge | Skills | | Knowledge | Skills | Knowledge | | Skills | Knowledge | Skills | Knowledge | |
| - I can tell an adult if I see something I don’t like.  - I know not to tell a stranger information about me. | | | -I can keep my password private.  -I can tell you what  personal information  is.  -I can tell an adult when I see something  unexpected or  worrying online.  -I can talk about why  it’s important to be  kind and polite.  -I can recognise an age appropriate website.  -I can agree and follow sensible  e‐safety rules. | Ability to make a password that they can remember that includes certain criteria. | -I can explain why I need to keep my password and personal information private.  -I can describe the things that happen online that I must tell an adult about.  -I can talk about why I should go online for a short amount of time.  -I can talk about why it is important to be kind and polite online and in real life.  -I know that not everyone is who they say they are on the  internet. | Keep personal information private and adapt passwords to match criteria.  Awareness of safe adults and what can be shared.  Aware of the effects of having an online presence. | I can talk about what  makes a secure password and why they are important.  -I can protect my personal information when I do different things online.  -I can use the safety  features of websites as  well as reporting concerns to an adult.  -I can recognise websites  and games appropriate for my age.  -I can make good choices about how long -I spend online.  -I ask an adult before downloading files  and games from the  internet.  -I can post positive  comments online. | | Keep personal information private and adapt passwords to match criteria.  Awareness of safe adults and what can be shared.  Aware of the effects of having an online presence.  Understand how downloading online can allow access to my network.  Aware of what is appropriate to see online and what to do if concerned. | -I can choose a secure  password when I am using a website.  -I can talk about  the ways I can protect  myself and my friends  from harm online.  -I can use the safety features of websites as well as reporting concerns to an adult.  -I know that anything I post online can be seen by others.  -I choose websites and  games that are  appropriate for my age. -I can help my friends make good choices about the time they spend online.  -I can talk about why I need to ask a trusted adult before downloading files  and games from the  internet.  -I comment positively and respectfully  online. | Refined password choices and know how to adapt to improve security.  Understand the ability to have an online identity and how this may help or hinder my privacy.  Aware of what I share can be seen beyond when it is posted. | | -I protect my password and other personal information.  -I can explain why I need to protect myself and my friends and the best ways to do this, including reporting  concerns to an adult.  -I know that anything I post online can be seen, used and may affect others.  -I can talk about the dangers of spending too long online or playing a game.  -I can explain the importance of communicating kindly  and respectfully.  -I can discuss the importance of choosing an age appropriate  website or game.  -I can explain why I  need to protect my  computer or device from harm.  -I know which resources on the internet I can download and use. | Refined password choices and know how to adapt to improve security.  I know the effects of false identities online, how to spot them and how to maintain safe online.  I can communicate online appropriately and maintain a positive presence online. | -I protect my password and  other personal  information.  -I can explain the  consequences of sharing too much information about myself online.  -I support my friends to  protect themselves and  make good choices online, including reporting concerns to an adult.  -I can explain the  consequences of spending too much time online or on a game.  -I can explain the  consequences to myself  and others of not  communicating kindly and respectfully.  -I protect my computer or device from harm on the internet. | Multiple refined password choices and know how to adapt to improve security.  Mature awareness of what should be shared online.  I know how to deal with negativity online and have multiple ideas to support this.  I know how to create different identities online and know which is needed depending on where the presence is. | |
| **PROGRAMMING** | ***They select and use technology for particular purposes.*** | | | ***Pupils should be taught to 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.*** | | | | ***Pupils should be taught to design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.*** | | | | | | | | | | |
| Skills | Knowledge | | Skills | Knowledge | Skills | Knowledge | Skills | Knowledge | | Skills | Knowledge | | Skills | Knowledge | Skills | | Knowledge |
| - I can recognise the success and failures of an action.  - I can follow simple instructions to control a digital device.  - I can order steps of a known task.  - I understand cause and effect e.g. pressing buttons/ lifting flaps will achieve a sound/ movement etc… | Know that objects can be controlled | | - I can explain what a given command will do.  - I can act out a given word.  - I can combine forwards and backwards commands to make a sequence.  - I can combine four direction commands to make sequences.  - I can plan a simple program.  - I can find more than one solution to a problem.  - I can choose a command for a given purpose.  - I can show that a series of commands can be joined together.  - I can identify the effect of changing a value.  - I can explain that each character has its own instructions.  - I can design the parts of a project.  - I can use my algorithm to create a program  - I can debug when I when my programme goes wrong. | Know what an algorithm is, and how they are implemented as programmes on digital devices. Know programs execute by following precise instructions.  Know that programs can be created and altered | - I can describe a series of instructions as a sequence.  - I can To explain what happens when we change the order of instructions.  - I can use logical reasoning to predict the outcome of a program (series of commands).  - I can explain that programming projects can have code and artwork.  - I can design an algorithm.  - I can create and debug a program that I have written.  - I can explain that a sequence of commands has a start.  - I can explain that a sequence of commands has an outcome.  - I can create a program using a given design.  - I can change a given design. | Know what an algorithm is, and how they are implemented as programmes on digital device.  Know programs execute by following precise and unambiguous instructions. Know that order of commands will affects an outcome.  Know that programs can be created and debugged. | -I can put programming commands into a sequence to achieve  a specific outcome.  - I can identify that commands can be connected and where the start of the sequence is.  -I keep testing my program and can recognise when I need to debug it.  -I can use repeat commands.  -I can break an open‐ended problem up into smaller parts.  -I can detect a problem in an algorithm which could result in the programme not working.  - I can develop the appearance of my project by considering design choices.  - I can program movement, adapt when necessary and explain the purpose. -I can describe the algorithm I will need  for a simple task. | Know the inks between action and events. Know that using commands actions can happen | | - I can identify that accuracy in programming is important.  - I can create a program in a text based language.  - I an explain what “repeat” means and use it to produce a given outcome.  - I can decompose a task into small steps.  - I can create a program that uses count-controlled loops to produce something and develop those skills in other programs.  - I can explain that there are infinite and count-controlled loops.  - I can develop and modify a design that uses two or more infinite or controlled loops  - I can design and create a project that includes repetition. | Know the term loop | | -I can control a simple circuit connected to a computer.  - I can use a loop to make my programme change when a condition is met.  - I can design and make a project that uses a controllable system.  - I can use selection to affect the output of a programme.  - I can design, create and evaluate a program that uses selection. | Know the terms control, circuit and component | * I can explain and use variables in a program. * I can design, create and evaluate a project that includes variables. * I can create a program to run on a controllable device. * I can make a program that changes with user input. * I can design and develop a project to use inputs and outputs on a controllable device. * I can use a conditional statement to compare a variable to a value | | * Know the variable. Know the term operand |
| **HANDLING DATA** |  | | | Skills | | | | Knowledge | | | | | | | | | | |
| Skills | | | Skills | Knowledge | Skills | Knowledge | Skills | | Knowledge | Skills | | Knowledge | Skills | Knowledge | Skills | Knowledge | |
| - I can create simple tally charts | | | I can talk about different ways in which information can be shown.  -I can use technology to collect information, including photos, video and  sound.  -I can sort different kinds of  information and present it to others.  -I can add information  to a pictograph and talk to you about what I have found out. | Understand and use technology purposefully to create, and store, digital content. | - I can recognise that we can count and compare objects using tally charts.  - I can recognise that objects can be represented as pictures.  - I can create a pictogram.  - I can select objects by attribute and make comparisons.  - I can recognise that people can be described by attributes.  - I can explain that we can present information using a computer. | Understand and use technology purposefully to create, organise, store, manipulate, and retrieve digital content. | -I can collect data to help me answer a question.  -I can talk about the  different ways data can be organised.  -I can make a branching  Database and use it to identify objects.  -I can add to a database.  - I can explain why it is helpful for a database to be well structured. | | Know that data and information can be collected, analysed, evaluated and presented | - I can explain that data gathered over time can be used to answer questions  - I can use a digital device to collect date automatically  - I can explain that a data logger collects “data points” from sensors over time.  - I can use data collected over a long duration to find information.  -I can use a data logger to monitor changes and can talk about the information collected.  - I can identify and use data collected to answer questions. | | Know that data can be collected over time  Know that dataloggers are a device that collects data | -I can use a spreadsheet and database to collect and record data.  -I can choose an appropriate tool to help me collect data.  -I can present data in an appropriate way.  -I can search a database using different operators to refine my search.  -I can talk about mistakes in data and suggest how it could be checked.  - I can outline how grouping and then sorting data allows us to answer questions.  - I can apply my knowledge of a database to ask and answer real-world questions. | Know how flat file data base can be used to organise data in records | - I can identify questions which can be answered using data.  - I can explain that objects can be described using data.  - I can use formulas to manipulate my data.  - I can create a spreadsheet to plan an event.  - I can choose suitable ways to present my data. | The that maths combined with computers can help collate, analyse and evaluate data | |
| **MULTIMEDIA** | ***They select and use technology for particular purposes. Children recognise that a range of technology is used in places such as homes and schools.*** | | | ***Pupils should be taught to use technology purposefully to create digital content*** | | | | ***Pupils should be taught to select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals.*** | | | | | | | | | | |
|  | | | Skills | Knowledge | Skills | Knowledge | Skills | | Knowledge | Skills | | Knowledge | Skills | Knowledge | Skills | Knowledge | |
| - I can create simple digital content.  - I can make marks on a digital device to communicate my ideas.  - I can use cameras to take photos. | | | -I can describe what different freehand tools do.  - I can use the shape tool and the line tools.  - I can make careful choices when painting a digital picture.  - I can explain why I chose the tools I used.  - I can use a computer on my own to paint a picture.  - I can compare painting a picture on a computer and on paper.  - I can use a computer to write.  - I can add and remove text on a computer.  - I can identify that the look of text can be changed on a computer.  - I can make careful choices when changing text.  - I can explain why I used the tools that I chose.  - I can compare writing on a computer with writing on paper. | Know that work belongs to someone | -I can use a digital device to take a photograph.  - I can make choices when taking a photograph.  - I can describe what makes a good photograph.  - I can decide how photographs can be improved.  - I can use tools to change an image.  - I can recognise that photos can be changed.  - I can say how music can make us feel.  - I can identify that there are patterns in music.  - I can describe how music can be used in different ways.  - I can show how music is made from a series of notes.  - I can create music for a purpose.  - I can review and refine our computer work. | Know that work belongs to someone.  I can use a range of mediums to capture media and edit the outcomes. | -I can create different effects with different  technology tools.  - I can sequence drawings and photographs to create an animation.  -I can combine a mixture of text, graphics and sound to share my ideas  and learning.  - I can recognise how text and images can convey information.  -I can consider page layout and choose appropriate settings which I know how to edit.  - I can consider the benefits of desktop publishing.  -I can use appropriate  Keyboard commands  to amend text on my device, including making use of a spellchecker.  -I can evaluate my  work and improve its effectiveness.  -I can use an appropriate tool to share my work online. | | Know terms templates and orientation  Know the term copywrite and ownership.  Know that software can be used on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals. | - I can use a digital device to record, combine and edit sounds.  - I can explain that a digital recording is stored as a file  - I can evaluate the editing choices I make.  - I can explain that digital images can be changed and then change them.  - I can describe how images can be changed for different uses  - I can make good choices when selecting different editing tools and evaluate how those changes can improve an image.  - I can recognise that not all images are real. | | Know that devices can be used to record digital audio Know to use technology safely.  Know ways to report concerns re contact and content | -I can identify that drawing tools can be used to produce different outcomes.  -I can review and improve my work and support others to improve their work.  - I can use a vector drawing tool to achieve a desired effect.  - I can use a digital device to capture a video.  - I can make an informed choice to edit a video for a purpose. | Know the history of moving images.  Know the terms visual and audio.  Know terms zoom angle and pan (movement).  Know how to report content to two separate ways and the what happens as a result. | - I can use a computer to create  and manipulate three-dimensional (3D) digital objects.  - I can compare working digitally with 2D and 3D graphics.  - construct a digital 3D model of a physical object.  - I can identify that physical objects can be broken down into a collection of 3D shapes.  - I can design a digital model by combining 3D objects.  - I can develop and improve a digital 3D model.  - I can review an existing website and consider its structure.  - I can plan and create my own website.  - I can use hyperlinks to navigate around my website.  - I can consider the ownership and use of images and recognise the implications of linking own content. | Know what a webpage is and how they can be accessed. Know what an HTML code is. Know consequences of breaking copywrite. | |
| **TECHNOLOGY**  **IN OUR LIVES** | ***They select and use technology for particular purposes.***  ***Children recognise that a range of technology is used in places such as homes and schools.*** | | | ***Pupils should be taught to use technology purposefully to store and retrieve digital content and to recognise common uses of information technology beyond school.*** | | | | ***Pupils should be taught to understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.*** | | | | | | | | | | |
| Skills | | Knowledge | Skills | Knowledge | Skills | Knowledge | Skills | | Knowledge | Skills | | Knowledge | Skills | Knowledge | Skills | Knowledge | |
| - I can use a range of devices to record information in a range of formats.  - I can recognise the basic parts of a computer.  - I can use a mouse or touchscreen to target or select options on a screen. - I can understand that you can access the same content on different devices.  - I can use technology to find information.  - I can use cameras and phones in play. | | Know that computers can help us. | -I can identify technology.  - I can identify a computer and its main parts.  - I can use a mouse in different ways.  - I can use a keyboard to type.  - I can use the keyboard to edit text.  - I can create rules for using technology responsibly. | Become familiar will the term technology within school. Know the main parts of the computer. Know how to use a computer safely | -I can recognise the uses and features of information technology.  - I can identify information technology in the home.  - I can identify information technology beyond school.  - I can explain how information technology benefits us.  - I can show how to use information technology safely.  - I can recognise that choices are made when using information technology.  -I can use the keyboard on my device to add, delete and space text for others to read.  - I can save and open files on the device I use. | Become familiar with information technology at school and beyond.  Know how technology can help people.  Know how to use technology in a wider context safely | -I can save and retrieve work on the internet, the school network or my own device.  -I can talk about the parts of a computer.  -I can tell you ways to communicate with others online.  -I can describe the World Wide Web as the part of the internet that contains websites.  -I can use search tools to find and use an appropriate website.  -I can think about whether I can use images that I find online in my own work.  - I can explain that a computer network is made up of different devices and how can be used to share information. | | Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Know how to keep safe online | - I can recognise how networks physically connect and make up the internet.  - I can describe how content can be shared, added and accessed on the World Wide Web.  - I can recognise how the content of the WWW is created by people.  - I can evaluate the consequences of unreliable content. | | Know about networks and understand that the internet is a series of networks that needs to be kept secure Know the WWW is part of the internet.  Know how to keep safe online | - I can explain that computers can be connected together to form systems.  - I can recognise the role of computer systems in our lives.  - I can recognise how information is transferred over the internet.  - I can explain how sharing information online lets people in different places work together.  - I can contribute to a shared project online.  - I can evaluate different ways of working together online. | Know how information is transferred between systems and devices | -I can talk about the way search results are selected and ranked.  - I can describe how search engines, select results and why the order is important.  - I can recognise and evaluate methods of online communication. | Know the WWW is a communication tool. Know what a search engine is and how it works. Know that you can influence a search via a search engine | |