| ***EYFS*** |  | |  | | | |
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| ***Three and Four-Year-Olds*** | Personal, Social and Emotional Development  Physical Development  Understanding the World | | * Remember rules without needing an adult to remind them. * Match their developing physical skills to tasks and activities in the setting. * Explore how things work. | | | |
| ***Reception*** | Personal, Social and Emotional Development  Physical Development  Expressive Arts and Design | | * Show resilience and perseverance in the face of a challenge. * Know and talk about the different factors that support their overall health and wellbeing:   - sensible amounts of ‘screen time’.   * Develop their small motor skills so that they can use a range of   tools competently, safely and confidently.   * Explore, use and refine a variety of artistic effects to express   their ideas and feelings. | | | |
| ***ELG*** | Personal, Social and Emotional Development  (Managing Self)  Expressive Arts and Design  (Creating with Materials) | | * Be confident to try new activities and show independence,   resilience and perseverance in the face of challenge.   * Explain the reasons for rules, know right from wrong and try to behave accordingly. * Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. | | | |
| ***End of Key stage Expectations*** | 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 purposefully to create, organise, store, manipulate and retrieve digital content 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 | | 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  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  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, including collecting, analysing, evaluating and presenting data and information  Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact | | | |
|  | **Year 1** | **Year 2** | **Year3** | **Year 4** | **Year 5** | **Year 6** |
| **Topics** | **Autumn:**  **Spring:**  **Summer:** | **Autumn:**  **Spring:**  **Summer:** | **Autumn:**  **Spring:**  **Summer:** | **Autumn:**  **Spring:**  **Summer:** | **Autumn:**  **Spring:**  **Summer:** | **Autumn:**  **Spring:**  **Summer:** |
| **Online Safety** | Keep my password private  Tell you what personal information is  Tell an adult when I see something unexpected or worrying online  Talk about why it’s important to be kind and polite  Recognise an age appropriate website  Agree and follow sensible e-Safety rules. | Explain why I need to keep my password and personal information private  Describe the things that happen online that I must tell an adult about  Talk about why I should go online for a short amount of time  Talk about why it is important to be kind and polite online and in real | Talk about what makes a secure password and why they are important  Protect my personal information when I do different things online  Use the safety features of websites as well as reporting concerns to an adult  Recognise websites and games appropriate for my age  Make good choices about how long I spend online  Ask an adult before downloading files and games from the Internet  Post positive comments online | Choose a secure password and screen name when I am using a website  Talk about the ways I can protect myself and my friends from harm online  Use the safety features of websites as well as reporting concerns to an adult  Know that anything I share online can be seen by others  Choose websites, apps and games that are appropriate for my age  Help my friends make good choices about the time they spend online  Talk about why I need to ask a trusted adult before downloading files and games from the Internet  Comment positively and respectfully online and through text messages | Choose a secure password and screen name  Protect my password and other personal information  Explain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adult  Know that anything I post online can be seen, used and may affect others  Talk about the dangers of spending too long online or playing a game  Explain the importance of communicating kindly and respectfully  Discuss the importance of choosing an age-appropriate website, app or game  Explain why I need to protect my computer or device from harm | Protect my password and other personal information  Explain the consequences of sharing too much about myself online  Support my friends to protect themselves and make good choices online, including reporting concerns to an adult  Explain the consequences of spending too much time online or on a game  Explain the consequences to myself and others of not communicating kindly and respectfully  Protect my computer or device from harm on the Internet |
| **Algorithms and Programming** | Give instructions to my friend and follow their instructions to move around  Describe what happens when I press buttons on a robot  Press the buttons in the correct order to make my robot do what I want  Describe what actions I will need to do to make something happen and begin to use the word algorithm  Begin to predict what will happen for a short sequence of instructions  Begin to use software/apps to create movement and patterns on a screen  Use the word debug when I correct mistakes when I program | Know that an algorithm is a set of instructions  Give instructions to my friend (using forward, backward and turn) and physically follow their instructions  Tell you the order I need to do things to make something happen and talk about this as an algorithm  Make a program more efficient using a loop  Program a robot or software to do a particular task  Look at my friend’s program and tell you what will happen  Use programming software to make objects move  Watch a program execute and spot where it goes wrong so that I can debug it | Break an open-ended problem up into smaller parts  Put programming commands into a sequence to achieve a specific outcome  Use diagrams to express solutions e.g. flowchart  Keep testing my program and can recognise when I need to debug it  Use repeat commands  Describe the algorithm I will need for a simple task  Detect a problem in an algorithm which could result in unsuccessful programming | Use logical thinking to solve an open-ended problem by breaking it up into smaller parts  Use an efficient procedure to simplify a program  Use a sensor to detect a change which can select an action within my program  Know that I need to keep testing my program while I am putting it together  Recognise an error in a program and debug it  Recognise that an algorithm will help me to sequence more complex programs  Recognise that using algorithms will also help solve problems in other learning such as Maths, Science and Design and Technology | Decompose a problem into smaller parts to design an algorithm for a specific outcome and use this to write a program  Refine a procedure using repeat commands to improve a program  Use a variable to increase programming possibilities  Change an input to a program to achieve a different output  Use ‘if’ and ‘then’ commands to select an action  Talk about how a computer model can provide information about a physical system  Use logical reasoning to detect and debug mistakes in a program  Use logical thinking, imagination and creativity to extend a program | Deconstruct a problem into smaller steps, recognising similarities to solutions used before  Explain and program each of the steps in my algorithm  Evaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithm  Recognise when I need to use a variable to achieve a required output  Use a variable and operators to stop a program  Use different inputs (including sensors) to control a device or onscreen action and predict what will happen  Use logical reasoning to detect and correct errors in a algorithms and programs |
| **Handling Data** | Talk about the different ways in which information can be shown  Use technology to collect information, including photos, video and sound  Sort different kinds of information and present it to others  Add information to a pictograph and talk to you about what I have found out | Talk about the different ways I use technology to collect information, including a camera, microscope or sound recorder  Make and save a chart or graph using the data I collect  Talk about the data that is shown in my chart or graph  Know the difference between data e.g. text, number  Starting to understand a branching database  Tell you what kind of information I could use to help me investigate a question (e.g. filtering out data – only show girls with brown eyes) | Talk about the different ways data can be organised  Search a ready-made database to answer questions  Collect data help me answer a question  Add to a database  Make a branching database  Use a data logger to monitor changes and can talk about the information collected | Organise data in different ways  Collect data and identify where it could be inaccurate  Plan, create and search a database to answer questions  Choose the best way to present data to my friends  Analyse and evaluate data and information and I know that poor quality data leads to unreliable results and inaccurate conclusions | Use a spreadsheet and database to collect and record data  Choose an appropriate tool to help me collect data  Present data in an appropriate way  Search a database using different operators to refine my search (AND, OR, NOT)  Talk about mistakes in data and suggest how it could be checked | Plan the process needed to investigate the world around me  Select the most effective tool to collect data for my investigation  Check the data I collect for accuracy and plausibility  Interpret the data I collect  Present the data I collect in an appropriate way  Use the skills I have developed to interrogate a database |
| **Multimedia / ICT** | Be creative with different technology tools  Use technology to create and present my ideas  Use the keyboard or a word bank on my device to enter text  Save information in a special place and retrieve it again | Use technology to organise and present my ideas in different ways  Use the keyboard on my device to add, delete, capitalise using shift and space text for others to read  Tell you about an online tool that will help me to share my ideas with other people  Save and open files on the device I use | Create different effects with different technology tools  Combine a mixture of text, graphics and sound to share my ideas and learning  Use appropriate keyboard commands to amend text on my device, including making use of a spellchecker  Evaluate my work and improve its effectiveness  Use an appropriate tool to share my work online | Use photos, video and sound to create an atmosphere when presenting to different audiences  Confident to explore new media to extend what I can achieve  Change the appearance of text to increase its effectiveness  Create, modify and present documents for a particular purpose  Use a keyboard confidently and make use of a spellchecker to write and review my work  Use an appropriate tool to share my work and collaborate online  Give constructive feedback to my friends to help them improve their work and refine my own work | Use text, photo, sound and video editing tools to refine my work  Use the skills I have already developed to create content using unfamiliar technology  Select, use and combine the appropriate technology tools to create effects that will have an impact on others  Select an appropriate online or offline tool to create and share ideas  Review and improve my own work and support others to improve their work | Talk about audience, atmosphere and structure when planning a particular outcome  Confidently identify the potential of unfamiliar technology to increase my creativity  Combine a range of media, recognising the contribution of each to achieve a particular outcome  Tell you why I select a particular online tool for a specific purpose  Can be digitally discerning when evaluating the effectiveness of my own work and the work of others |
| **Technology in our Lives (Digital Literacy)** | Recognise the ways we use technology in our classroom  Recognise ways that technology is used in my home and community  Use links to websites to find information  Begin to identify some of the benefits of using technology  Recognise different parts of a computer e.g. screen, mouse, keyboard | Tell you what a computer is and where we can find them  Tell you why I use technology in the classroom  Tell you why I use technology in my home and community  Starting to understand that other people have created the information I use  Understand that not all the information I have found is of a good quality e.g. search results  Talk about the differences between the Internet and things in the physical world | Save and retrieve work on the Internet, the school network or my own device  Talk about the parts of a computer e.g. USB, Wifi button  Tell you ways to communicate with others online  Describe the World Wide Web as the part of the Internet that contains websites  Use search tools to find and use an appropriate website  Think about whether I can use images that I find online in my own work | Tell you whether a resource I am using is on the Internet, the school network or my own device. E.g. Netflix on Smart TV  Identify key words to use when searching safely on the World Wide Web  Think about the reliability of information I read on the World Wide Web  Tell you how to check who owns photos, text and clipart  Create a hyperlink to a resource on the World Wide Web  Recognise that websites use different methods to advertise products | Describe different parts of the Internet  Use different online communication tools for different purposes  Use a search engine to find appropriate information and check its reliability  Recognise and evaluate different types of information I find on the World Wide Web  Talk about the way search results are selected and ranked  Describe the different parts of a webpage  Find out who the information on a webpage belongs to  Know which resources on the Internet I can download and use  Describe the ways in which websites advertise their products to me | Tell you the Internet services I need to use for different purposes  Know the difference between physical, wireless and mobile networks  Describe how information is transported on the Internet  Select an appropriate tool to communicate and collaborate online  Talk about the way search results are selected and ranked  Check the reliability of a website  Tell you about copyright and acknowledge the sources of information that I find online  Know that websites can use my data to make money and target their advertising |