| ***EYFS***  |  |  |
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| ***Three and Four-Year-Olds*** | Personal, Social and Emotional DevelopmentPhysical DevelopmentUnderstanding 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.
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| ***Reception*** | Personal, Social and Emotional DevelopmentPhysical DevelopmentExpressive 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.
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| ***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 privateTell you what personal information isTell an adult when I see something unexpected or worrying onlineTalk about why it’s important to be kind and politeRecognise an age appropriate websiteAgree and follow sensible e-Safety rules. | Explain why I need to keep my password and personal information privateDescribe the things that happen online that I must tell an adult aboutTalk about why I should go online for a short amount of timeTalk 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 importantProtect my personal information when I do different things onlineUse the safety features of websites as well as reporting concerns to an adultRecognise websites and games appropriate for my ageMake good choices about how long I spend onlineAsk an adult before downloading files and games from the InternetPost positive comments online | Choose a secure password and screen name when I am using a websiteTalk about the ways I can protect myself and my friends from harm onlineUse the safety features of websites as well as reporting concerns to an adultKnow that anything I share online can be seen by othersChoose websites, apps and games that are appropriate for my ageHelp my friends make good choices about the time they spend onlineTalk about why I need to ask a trusted adult before downloading files and games from the InternetComment positively and respectfully online and through text messages | Choose a secure password and screen nameProtect my password and other personal informationExplain why I need to protect myself and my friends and the best ways to do this, including reporting concerns to an adultKnow that anything I post online can be seen, used and may affect othersTalk about the dangers of spending too long online or playing a gameExplain the importance of communicating kindly and respectfullyDiscuss the importance of choosing an age-appropriate website, app or gameExplain why I need to protect my computer or device from harm | Protect my password and other personal informationExplain the consequences of sharing too much about myself onlineSupport my friends to protect themselves and make good choices online, including reporting concerns to an adultExplain the consequences of spending too much time online or on a gameExplain the consequences to myself and others of not communicating kindly and respectfullyProtect my computer or device from harm on the Internet |
| **Algorithms and Programming** | Give instructions to my friend and follow their instructions to move aroundDescribe what happens when I press buttons on a robotPress the buttons in the correct order to make my robot do what I wantDescribe what actions I will need to do to make something happen and begin to use the word algorithmBegin to predict what will happen for a short sequence of instructionsBegin to use software/apps to create movement and patterns on a screenUse the word debug when I correct mistakes when I program | Know that an algorithm is a set of instructionsGive instructions to my friend (using forward, backward and turn) and physically follow their instructionsTell you the order I need to do things to make something happen and talk about this as an algorithmMake a program more efficient using a loopProgram a robot or software to do a particular taskLook at my friend’s program and tell you what will happenUse programming software to make objects moveWatch a program execute and spot where it goes wrong so that I can debug it | Break an open-ended problem up into smaller partsPut programming commands into a sequence to achieve a specific outcomeUse diagrams to express solutions e.g. flowchartKeep testing my program and can recognise when I need to debug itUse repeat commandsDescribe the algorithm I will need for a simple taskDetect 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 partsUse an efficient procedure to simplify a programUse a sensor to detect a change which can select an action within my programKnow that I need to keep testing my program while I am putting it togetherRecognise an error in a program and debug itRecognise that an algorithm will help me to sequence more complex programsRecognise 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 programRefine a procedure using repeat commands to improve a programUse a variable to increase programming possibilitiesChange an input to a program to achieve a different outputUse ‘if’ and ‘then’ commands to select an actionTalk about how a computer model can provide information about a physical systemUse logical reasoning to detect and debug mistakes in a programUse logical thinking, imagination and creativity to extend a program | Deconstruct a problem into smaller steps, recognising similarities to solutions used beforeExplain and program each of the steps in my algorithmEvaluate the effectiveness and efficiency of my algorithm while I continually test the programming of that algorithmRecognise when I need to use a variable to achieve a required outputUse a variable and operators to stop a programUse different inputs (including sensors) to control a device or onscreen action and predict what will happenUse logical reasoning to detect and correct errors in a algorithms and programs |
| **Handling Data** | Talk about the different ways in which information can be shownUse technology to collect information, including photos, video and soundSort different kinds of information and present it to othersAdd 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 recorderMake and save a chart or graph using the data I collectTalk about the data that is shown in my chart or graphKnow the difference between data e.g. text, numberStarting to understand a branching databaseTell 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 organisedSearch a ready-made database to answer questionsCollect data help me answer a questionAdd to a databaseMake a branching databaseUse a data logger to monitor changes and can talk about the information collected | Organise data in different waysCollect data and identify where it could be inaccuratePlan, create and search a database to answer questionsChoose the best way to present data to my friendsAnalyse 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 dataChoose an appropriate tool to help me collect dataPresent data in an appropriate waySearch 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 investigationCheck the data I collect for accuracy and plausibilityInterpret the data I collectPresent the data I collect in an appropriate wayUse the skills I have developed to interrogate a database |
| **Multimedia / ICT** | Be creative with different technology toolsUse technology to create and present my ideasUse the keyboard or a word bank on my device to enter textSave information in a special place and retrieve it again | Use technology to organise and present my ideas in different waysUse the keyboard on my device to add, delete, capitalise using shift and space text for others to readTell you about an online tool that will help me to share my ideas with other peopleSave and open files on the device I use | Create different effects with different technology toolsCombine a mixture of text, graphics and sound to share my ideas and learningUse appropriate keyboard commands to amend text on my device, including making use of a spellcheckerEvaluate my work and improve its effectivenessUse an appropriate tool to share my work online | Use photos, video and sound to create an atmosphere when presenting to different audiencesConfident to explore new media to extend what I can achieveChange the appearance of text to increase its effectivenessCreate, modify and present documents for a particular purposeUse a keyboard confidently and make use of a spellchecker to write and review my workUse an appropriate tool to share my work and collaborate onlineGive 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 workUse the skills I have already developed to create content using unfamiliar technologySelect, use and combine the appropriate technology tools to create effects that will have an impact on othersSelect an appropriate online or offline tool to create and share ideasReview and improve my own work and support others to improve their work | Talk about audience, atmosphere and structure when planning a particular outcomeConfidently identify the potential of unfamiliar technology to increase my creativityCombine a range of media, recognising the contribution of each to achieve a particular outcomeTell you why I select a particular online tool for a specific purposeCan 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 classroomRecognise ways that technology is used in my home and communityUse links to websites to find informationBegin to identify some of the benefits of using technologyRecognise different parts of a computer e.g. screen, mouse, keyboard | Tell you what a computer is and where we can find themTell you why I use technology in the classroomTell you why I use technology in my home and communityStarting to understand that other people have created the information I useUnderstand that not all the information I have found is of a good quality e.g. search resultsTalk 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 deviceTalk about the parts of a computer e.g. USB, Wifi buttonTell you ways to communicate with others onlineDescribe the World Wide Web as the part of the Internet that contains websitesUse search tools to find and use an appropriate websiteThink 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 TVIdentify key words to use when searching safely on the World Wide WebThink about the reliability of information I read on the World Wide WebTell you how to check who owns photos, text and clipartCreate a hyperlink to a resource on the World Wide WebRecognise that websites use different methods to advertise products | Describe different parts of the InternetUse different online communication tools for different purposesUse a search engine to find appropriate information and check its reliabilityRecognise and evaluate different types of information I find on the World Wide Web Talk about the way search results are selected and rankedDescribe the different parts of a webpageFind out who the information on a webpage belongs toKnow which resources on the Internet I can download and useDescribe the ways in which websites advertise their products to me | Tell you the Internet services I need to use for different purposesKnow the difference between physical, wireless and mobile networksDescribe how information is transported on the InternetSelect an appropriate tool to communicate and collaborate onlineTalk about the way search results are selected and rankedCheck the reliability of a websiteTell you about copyright and acknowledge the sources of information that I find onlineKnow that websites can use my data to make money and target their advertising  |