Adel Primary School

COMPUTING Curriculum

Early Years to Year 6

Our Computing curriculum has been designed to ensure that pupils are equipped to use information technology to create programs, systems and a range of content. The curriculum has been planned to ensure that pupils become digitally literate – able to safely use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active, responsible participants in a digital world.

The curriculum is structured in a manner to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

EYFS Autumn 1	EYFS Autumn 2	EYFS Spring 1	EYFS Spring 2	EYFS Summer 1	EYFS Summer 2
Online Safety Spotlight (first session of half term) That for most people the internet is an integral part of life and has many benefits	Online Safety Spotlight (first session of half term) The risks of excessive time spent on electronic devices and the impact of positive and negative content online on their own and others' mental and physical wellbeing.	Online Safety Spotlight (first session of half term) The importance of keeping personal information private	Online Safety Spotlight (first session of half term) Where and how to report things that concern you.	Online Safety Spotlight (first session of half term) What to do if you see something that you don't like on a computer/electronic device	Online Safety Spotlight (first session of half term) How to respond safely to adults that you do not know.
Half term 1: Introduction to computing: using online resources to allow children to familiarise themselves with computers and improving mouse control.	Programming 1: All about instructions (Unit 2 Kapow) **Session 1** Following instructions Children follow instructions as part of practical activities and games **Session 2** Giving simple instructions Children guide others through an obstacle course by giving simple instructions **Session 3** Dressing up instructions Children follow instructions and give instructions to others related to a dressing up game **Session 4** Debugging instruction (washing hands) The children give instructions to an adult on how to wash hands. The adult follows the instructions very specifically. The children have to change the instructions to make sure they get the desired outcome. **Session 5** Predictions Using pictures of a process, children make predictions about what the outcome will be.	Computing systems and networks 2: Exploring hardware (Unit 3 Kapow) **Session 1** Exploring hardware tinker tray Children explore disconnected computer hardware (keyboards, mice, headphones, speakers) **Session 2** Real world tinker tray Children explore everyday technology (Mobile phones, walkie talkies, iPads, cameras etc.) **Session 3** Pictures of play Children learn how to take a picture of something they have made using an iPad. **Session 4** Picture walk Children take pictures of things that they see using an iPad. **Session 5** Class photo album Children take their own selfie pictures using iPads. Create a class photo album using the photos.	Programming 2: Programming Bee-Bots (Unit 4 Kapow) **Session 1** Understanding arrows Children follow visual instructions (arrows) to move in a specified direction. **Session 2** Introducing the Bee-Bot Children explore using the Bee-Bots in the classroom. **Session 3** Simple Bee-Bot programming Children follow simple instructions (arrows) to program the Bee-Bot. **Session 4** Understanding algorithms Children follow simple instructions (arrows) to move themselves in a specified direction. **Session 5** Programming a Bee-Bot Children experiment with programming a short sequence using the Bee-Bots.	Data handling: Introduction to data (Unit 5 Kapow) **Session 1** Loose parts play Children explore and play with oose parts, sorting and categorising them. **Session 2** Sorting ourselves The children explore sorting themselves into different groups based on different criteria. **Session 3** Yes or no? Children answer a series of yes/no questions by sitting down or standing up. **Session 4** Creating a branching database The adult creates a branching database with a small group of children by using the yes/no questions from the previous session. **Session 5** Exploring pictograms Children use pictures of fruit to create a pictogram of the fruit that their class likes.	Computing systems and networks 1: Using a computer (Unit 1 Kapow) **Session 1** Keyboards Children look at a keyboard and see if they can point out any letters or numbers that they recognise **Session 2** Logging in and out Children practice logging in and out of the computers using their own login details **Session 3** Mouse control Children practise moving the mouse pointer to different places on the screen **Session 4** Mouse control – clicking Children use an online paint tool to click **Session 5** Mouse control – clicking and dragging Children use an online resource to click and drag objects across the screen.

Year 1 Autumn 1	Year 1 Autumn 2	Year 1 Spring 1	Year 1 Spring 2	Year 1 Summer 1	Year 1 Summer 2
Online Safety Spotlight (first session of half term) Using the internet safely To recognise what the internet is and how to use it safely. **Basic computer functions** Learners will develop their understanding of technology and start to become familiar with the different components of a computer by developing their keyboard and mouse skills. **Session 1** Learners will become familiar with the term 'technology'. They classify what is and what is not technology in their school. **Session 2** Learners will get to know the main parts of a desktop computer. **Session 3** Learners build on their mouse skills. **Session 4** Learners will begin to use the computer keyboard for a purpose. **Session 5** Children use a keyboard to edit text, by writing a sentence and then deleting letters **Session 6** Children explore why we have rules in school and how those rules help us Online Safety and Exploring Purple Mash (Unit 1.1 Purple Mash) Program: Various on Purple Mash	Online Safety Spotlight (first session of half term) Online emotions To identify how people's feelings and emotions can be affected by online content. **Digital Painting** Learners will develop their understanding of a range of tools used for digital painting. **Session 1** Introduce learners to the freehand tools available for digital painting **Session 2** Introduce learners to the line and shape tools and revisits the fill and undo tools used for digital painting. **Session 3** Introduce learners to a range of shape tools. **Session 4** This lesson increases learners' understanding of the available paint tools and encourages them to select the best tools to create a digital painting in the style of Wassily Kandinsky. **Session 5** Learners select appropriate colours, brush sizes, and brush tools to independently create their own image in the style of an artist. **Session 6** Compare their preferences when creating paintings on computers (Unit 1.2 Teach Computing) Program: 2Paint on Purple Mash	Online Safety Spotlight (first session of half term) Always be kind and considerate To recognise how to treat others, both online and in person. **Instructions and algorithms** Children to begin to think logically about scenarios. Children will be introduced to the term 'algorithm'. **Session 1** Learn that an algorithm is a precise, step-by-step set of instructions. **Session 2** Students follow and create simple instructions on the computer. **Session 3** Learn how the order of instructions affects the result. **Session 4** Learn the functionality of the basic direction keys: forwards, backwards, left and right. Add a unit of measurement to the direction **Session 5** Learn to create and debug a set of instructions (algorithm). **Session 6** Create a longer algorithm for an activity. (Unit 1.4 and 1.5 Purple Mash) Program: 2Go and 2DIY on Purple Mash	Online Safety Spotlight (first session of half term) Posting and sharing online To recognise the importance of being careful when posting and sharing online. **Grouping and sorting** In this unit, the children will sort items by different criteria away from the computer. At the computer, they will use Grouping on Purple Mash to sort items. This is an early stage of logical, algorithmic thinking. **Session 1** Children sort various items offline using a variety of criteria. Children follow a logical process to categorise objects. **Session 2** Sort items on the computer using the 'Grouping' activities in Purple Mash. **Session 3** Children discuss and illustrate the transport used to travel to school. Children contribute to the collection of class data. **Session 4** Children contribute to a class pictogram. Children discuss what the pictogram shows. **Session 5** Children collect data from rolling a die 20 times and record the results. Children represent the results as a pictogram. Grouping and sorting (Unit 1.2 Purple Mash) Pictograms (Unit1.3. Purple Mash) Program: 2Count on Purple Mash	Online Safety Spotlight (first session of half term) How much time should we spend on technology? To discuss ways to balance time spent online and offline **Programming animations** Introduce children to on-screen programming through ScratchJr. They will use programming blocks to use, modify, and create programs. **Session 1** During this lesson learners will become accustomed to the ScratchJr. **Session 2** Learners will discover that blocks can be joined together in ScratchJr. They will use a **Start** block to run their programs. **Session 3** Learners will discover that some blocks in ScratchJr have numbers underneath them. They will learn how to change these values. **Session 4** Learners will be taught how to add and delete sprites in ScratchJr. how to add programming blocks to give instructions to each of the sprites. **Session 5** Learners will choose appropriate backgrounds and sprites for a 'Space race' project. **Session 6** Learners create their projects on-screen in ScratchJr. (Unit 1.6 Teach Computing) Program: Scratch Jr (only available on iPads)	Online Safety Spotlight (first session of half term) Recap on online safety taught throughout the year. **Animated Story Books** Children develop the skills to create, organise, store, manipulate and retrieve digital content through the creation of their own animated story book. **Session 1** Children recognise the difference between a traditional book and an e-book. Children drawing tools to create a picture and add text to a page. **Session 2** Children open previously saved work. Children add an animation to a page. **Session 3** Children add sound to the page. **Session 4** Children add a background to the page and use the additional drawing tools on My Story mode. Children can change the font style and size. **Session 5** Children use the copy and paste function to add more pages to their animated e-book. Children share their e-books on a class story book display board. (Unit 1.6 Purple Mash) Program: 2Create a Story on Purple Mash

Year 2 Autumn 1	Year 2 Autumn 2	Year 2 Spring 1	Year 2 Spring 2	Year 2 Summer 1	Year 2 Summer 2
Online Safety Spotlight (first session of half term) What happens when I post online? To decide which information is safe to share online. **Information technology around us** Learners will develop their understanding of what information technology (IT) is and will begin to identify examples. **Session 1** Learners will identify devices that are computers and consider how IT can help them. **Session 2** Learners will identify examples of IT and be able to explain the purpose of them in the school setting. **Session 3** Learners will begin to explore IT in environments beyond school, including home and familiar places. **Session 4** Learners will explore the benefits of using IT in the wider world. They will focus on the use of IT in a shop and how devices can work together. **Session 5** Learners will consider how they use different forms of information technology safely, in a range of different environments. **Session 6** Learners will think about the choices that are made when using information technology, and the responsibility associated with those choices. (Unit 2.1 Teach Computing)	Online Safety Spotlight (first session of half term) How do I keep my things safe online? To practise keeping information safe and private online. **Creating pictures** This unit explore some of the templates and functions of digital painting alongside learning about artists and art movements. **Session 1** Children describe the main features of impressionist art. Children then use 2Paint a Picture to create art based upon this style. **Session 2** Children explore what pointillism is. They then use 2Paint a Picture to create art based upon this style. **Session 3** Children explore the art of Piet Mondrian. They then use 2Paint a Picture to create art based upon this style. **Session 4** Look at art that uses repeating patterns (e.g. William Morris). Children combine more than one effect in 2Paint a Picture to enhance patterns. **Session 5** Children look at and discuss surrealist art. They then use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart. (Unit 2.6 Purple Mash) Program: 2Paint a Picture on Purple Mash	Online Safety Spotlight (first session of half term) It's my choice To recognise when to deny permission online. **Robot algorithms** This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. **Session 1** Learners will follow instructions given to them and give instructions to others. **Session 2** Learners will focus on sequences, and consider the importance of the order of instructions. **Session 3** Learners will use logical reasoning to make predictions. They follow a program step by step and identify what the outcome will be. **Session 4** Learners will design, create, and test a mat for a floor robot. **Session 5** Learners will design an algorithm to move their robot around the mat that they designed in Session 4. **Session 6** Learners will take on a larger programming task. They will break the task into chunks and create algorithms for each chunk. Learners will also find and fix errors in their algorithms and programs. (debugging). (Unit 2.3 Teach Computing) Devices: Bee Bots/Pro Bots (Floor Robots)	Online Safety Spotlight (first session of half term) Is it true? To recognise that not everything online is true. **Presenting ideas** In this unit children explore different ways of presenting ideas and create their own presentation to share with the class. **Session 1** Children use the story of Goldilocks to examine a traditional tale presented in different formats (as a mind map, as a quiz, as an e-book and as a fact file). **Session 2** Children use 2Quiz on Purple Mash to create their own quiz about Goldilocks and the three bears. **Session 3** Introduce children to presentation software (PowerPoint, SMART Notebook). Allow children to explore the functions of either/both pieces of software **Sessions 4-5** Use the remaining sessions to allow children to research a topic of their choice (or alternatively use something that the class has studied). They should create a presentation that they can deliver to the rest of the class. **Session 6** Children deliver their presentations to the rest of the class in the classroom. (Unit 2.8 Purple Mash) Program: SMART Notebook/ PowerPoint	Online Safety Spotlight (first session of half term) Should I share? Recap on units from Year 1 and Year 2 about what should and shouldn't be shared online. **Programming quizzes** Learners begin to understand that sequences of commands have an outcome. They use and modify designs to create their own quiz questions in ScratchJr. **Session 1** Learners recap what they know already about the ScratchJr app. **Session 2** Learners will discover that a sequence of commands has an 'outcome'. **Session 3** learners will be taught how to use the **Start on tap** and **Go to page** (**Change background**) blocks. They create an animation based on the seasons. **Session 4** Learners will look at an existing quiz design. They choose backgrounds and characters for their own quiz projects. **Session 5** Learners will create their own quiz question designs including their own questions, artwork, and algorithms to create more complex programs. **Session 6** Learners think about how they could improve their designs by adding additional features. Also, they will find and correct errors in programs (debug). (Unit 2.6 Teach Computing) Program: Scratch Jr (only available on iPads)	Online Safety Spotlight (first session of half term) Recap on online safety taught throughout the year. **Digital music** Learners will compare creating music digitally and non-digitally. **Session 1** Learners will listen to and compare two pieces of music and describe how this music generates emotions **Session 2** Children use untuned percussion instruments and computers to hear the different rhythm patterns that they create. **Session 3** Students experiment with the pitch of notes to create their own piece of music **Session 4** Children use a computer to create and refine musical patterns. **Session 5** Learners will choose an animal and create a piece of music using the animal as inspiration. **Session 6** Learners retrieve and review their work. They spend time making improvements and then share their work with the class. (Unit 2.5 Teach Computing) Program: Chrome Music Lab. *To save work in Chrome Music Labs, learners need to save the link to their creation, for example by copying and pasting it into a word document. Learners may need some support with this.*

Year 3 Autumn 1	Year 3 Autumn 2	Year 3 Spring 1	Year 3 Spring 2	Year 3 Summer 1	Year 3 Summer 2
Online Safety Spotlight (first session of half term) Beliefs, opinions and facts on the internet To understand how the internet can be used to share beliefs, opinions and facts. **Connecting computers** Learners will be introduced to computer networks, including devices that make up a network's infrastructure, such as wireless access points and switches and discover the benefits of connecting devices in a network. **Session 1** Introduce the concepts of input, process, and output and how to protect devices using secure passwords. **Session 2** Learners will develop their knowledge of the relationship between inputs, processes, and outputs. **Session 3** Learners create two pieces of work (one digital and one non-digital) with the same focus. Then compare and contrast the two approaches. **Session 4** Learners will learn to explain how and why computers are joined together to form networks. **Session 5** This lesson introduces key network components, including a server and wireless access points. **Session 6** Learners will further develop their understanding of computer networks. (Unit 3.1 Teach Computing)	Online Safety Spotlight (first session of half term) Who should I ask? To explain what should be done before sharing information online. **Stop frame animation** Learners use a range of techniques to create a stop-frame animation. Then, they apply those skills to create a story-based animation. **Session 1** Children learn about simple animation techniques and create their own animations in the style of flip books (flick books) using sticky notes. **Session 2** Children apply learning from previous lesson to make a stop-frame animation using an iPad. **Session 3** Children create a storyboard showing the characters, settings and events that they would like to include in their own stop-frame animation next lesson. **Session 4** Children use iPads to carefully create stop-frame animations based on their plans from the previous session. **Session 5** Children evaluate their animations from last session and try to improve them by creating a brand-new animation based on their feedback. **Session 6** Children add other media and effects into their animations, such as music and text. (Unit 3.2 Teach Computing) Program: Stop Motion App on iPads	Online Safety Spotlight (first session of half term) When being online makes me upset To identify the effects that the internet can have on people's feelings. **Introduction to programming** This unit explores the concept of sequencing in programming through Scratch. **Session 1** This lesson introduces learners to a new programming environment: Scratch. **Session 2** Learners will create movement for more than one sprite. **Session 3** Children are introduced to the concept of sequences by joining blocks of code together. They will also learn how event blocks can be used to start a project in a variety of different ways. **Session 4** Learners have the opportunity to experiment with sequences in a simple program where order is and is not important. **Session 5** Children learn how to use costumes to change the appearance of a sprite, and backdrops to change the appearance of the stage. **Session 6** Learners will create a musical instrument in Scratch. (Unit 3.3 Teach Computing) Program: Scratch,	Online Safety Spotlight (first session of half term) Sharing of information To understand the ways personal information can be shared on the internet. **Branching databases** Learners will develop their understanding of what a branching database is and how to create one. Software available here: https://www.j2e.com/jit5#branch **Session 1** Learners will start to explore questions with yes/no answers. They will create their own yes/no questions to split a collection of objects into groups. **Session 2** Learners will develop their understanding of using questions with yes/no answers.They will learn how to arrange objects into a tree structure. **Session 3** Children use an online database tool to arrange objects into a branching database, and will create their own questions with yes/no answers. **Session 4** use attributes to create questions with yes/no answers, and will apply these to given objects. **Session 5** Learners independently plan a branching database by creating a physical (paper/card) representation of one that will identify different types of dinosaur. (Unit 3.4 Teach Computing) Program: https://www.j2e.com/jit5#branch	Online Safety Spotlight (first session of half term) Rules of social media platforms To understand the rules for social media platforms. **Events and actions in programs** Learners begin by moving a sprite in four directions (up, down, left, and right). They then explore movement within the context of a maze, using design to choose an appropriately sized sprite. This unit also introduces programming extensions, through the use of **Pen** blocks. **Session 1** Learners will investigate how characters can be moved using 'events'. **Session 2** Learners will program a sprite to move in four directions: up, down, left, and right. **Session 3** Introduce learners to extension blocks in Scratch using the **Pen** extension. Learners will use the pen down block to draw lines. **Session 4** Learners will be given the opportunity to use additional **Pen** blocks. **Session 5** Explore the process of debugging, specifically looking at how to identify and fix errors in a program. **Session 6** Learners will design and create their own projects to move a sprite around a maze. (Unit 3.6 Teach Computing) Program: Scratch	Online Safety Spotlight (first session of half term) Recap on online safety taught throughout the year. **Desktop Publishing** Learners use desktop publishing software to edit and improve premade documents and create their own pieces of work using desktop publishing software. **Session 1** Learners will become familiar with the terms 'text' and 'images' and understand that text and images need to be used carefully. **Session 2** Learners make careful choices regarding font size, colour, and type in an invitation. **Session 3** The learners will create their own magazine template. **Session 4** Learners will add their own content (text and images) to the magazine templates they created in lesson 3. **Session 5** They will look at a range of page layouts such as letters and newspapers, and begin to think about the purpose of each of these. **Session 6** Learners will explain what desktop publishing means in their own words. (Unit 3.5 Teach Computing) Program: Use Microsoft Publisher

Year 4 Autumn 1	Year 4 Autumn 2	Year 4 Spring 1	Year 4 Spring 2	Year 4 Summer 1	Year 4 Summer 2
Online Safety Spotlight (first session of half term) What happens when I search online? To describe how to search for information within a wide group of technologies and make a judgement about the probable accuracy. **The Internet** Learners will apply their knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure. **Session 1** Learners will explore how a network can share messages with another network to form the internet. **Session 2** Describe the parts of a network. **Session 3** Explore what can be shared on the World Wide Web and where websites are stored. **Session 4** Analyse a website and identify the key parts, then consider what content can be added to websites. **Session 5** Explore who owns the content on the World Wide Web. **Session 6** Gain an appreciation of the fact that not everything they see on the internet is true, honest, or accurate. (Unit 4.1 Teach Computing)	Online Safety Spotlight (first session of half term) How do companies encourage us to buy online? To describe some of the methods used to encourage people to buy things online. **Audio production** Learners will use GarageBand to produce a podcast, which will include editing their work, adding multiple tracks, and opening and saving the audio files. **Session 1** Learners record their voices using an iPad, and reflect on what makes a good audio recording. **Session 2** Learners will record and re-record their voices to improve their recordings. They will edit the recordings, removing long pauses and mistakes. **Session 3** Learners plan their own podcast which they will work on in future lessons. **Session 4** Record the voice tracks for their podcast. They will review their recordings and re-record if necessary. **Session 5** Learners will develop their podcast further by adding content such as sound effects and background music. **Session 6** Learners will evaluate their own podcasts and that of others. (Unit 4.2 Teach Computing) Program: Garage Band	Online Safety Spotlight (first session of half term) Fact, opinion or belief? To explain why lots of people sharing the same opinions or beliefs online do not make those opinions or beliefs true. **Repetition in shapes** Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. They will use Logo, a text-based programming language. **Session 1** Introduce pupils to programming in Logo. Pupils will learn the basic Logo commands, and will use their knowledge of them to read and write code. **Session 2** Pupils will create algorithms for their initials. **Session 3** Learners create algorithms for drawing a square. They will use this algorithm to program a square the 'long' way, and the 'short' way. **Session 4** Pupils will work with count-controlled loops in a range of contexts to create shapes. **Session 5** In this lesson, pupils will focus on decomposition. They will break down everyday tasks into smaller parts. **Session 6** Pupils will apply the skills that they have learnt in this unit to create a program containing a count-controlled loop to create a design for wallpaper. (Unit 4.3 Teach Computing) Program: Logo	Online Safety Spotlight (first session of half term) What is a bot? To explain that technology can be designed to act like or impersonate living things. **Introduction to Microbits** Students will develop their use of some core computing concepts through coding and making practical projects. **Session 1** Students create their first programs and transfer them to their micro:bits. **Session 2** Children create a simple animation to learn about sequence and simple loops. **Session 3** Children start learning about inputs and outputs using buttons and icons on the display. **Session 4** Children make an automatic nightlight and discover how logic, conditionals and inputs and outputs combine to make a simple control system. **Session 5** Children combine skills from the previous lessons to turn their micro:bit into an electronic simulation of a popular game of chance (rock, paper, scissors). (Unit: First lessons with Microbit) https://microbit.org/teach/lessons/	Online Safety Spotlight (first session of half term) What is my #TechTimetable like? To explain how technology can be a distraction and identify when I might need to limit the amount of time spent using technology. **Repetition in games** Learners will explore the concept of repetition in programming using the Scratch environment. **Session 1** Learners use Scratch, a block-based programming environment, to create shapes using count-controlled loops. **Session 2** Learners look at different types of loops: infinite loops and count-controlled loops. They practise using these within Scratch. **Session 3** Learners create designs for an animation of the letters in their names. The animation uses repetition to change the costume (appearance) of the sprite. **Session 4** Learners look at an existing game and match parts of the game with the design. They make changes to a sprite in the existing game to match the design. **Session 5** Learners look at a model project that uses repetition. They then design their own games based on the model project. **Session 6** Learners build and evaluate their games, using the designs they created in Lesson 5. (Unit 4.6 Teach Computing) Program: Scratch	Online Safety Spotlight (first session of half term) Recap on online safety taught throughout the year. **Photo editing** Learners will develop their understanding of how digital images can be changed and edited, and how they can then be resaved and reused. **Session 1** Introduce learners to the concept of editing images and discuss whether or not editing is ethical. They learn how to rotate and crop an image. **Session 2** Look at the effect that different colours and filters can have on an image. **Session 3** Introduce pupils to the cloning tool and its use in both changing a photo and retouching. **Session 4** Learners use copy and paste within one image and between two images to produce a combined image. **Session 5** Learners will apply all the skills they have learnt in the unit so far to create their own project. **Session 6** Learners will review the image that they created in Lesson 5. After they have reviewed their image, they will have the opportunity to make changes to their image. (Unit 4.5 Teach Computing) Program: GetPaint.net

Year 5 Autumn 1	Year 5 Autumn 2	Year 5 Spring 1	Year 5 Spring 2	Year 5 Summer 1	Year 5 Summer 2
Online Safety Spotlight (first session of half term) Online protection To understand how apps can access personal information and how to alter the permissions. **Systems and searching** Learners develop their understanding of computer systems and how information is transferred between systems and devices.. They learn how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines. **Session 1** Learners are introduced to the concept of a system. They begin to understand that components can work together to perform a task. **Session 2** Learners consider how larger computer systems work. **Session 3** Learners are introduced to a range of search engines **Session 4** They conduct their own searches and break down, in detail, the steps needed to find things on the web. **Session 5** Learners take part in an unplugged activity to find out about how a webpage's content can influence where it is ranked in search results. **Session 6** Learners explore how someone performing a web search can influence the results that are returned. (Unit 5.1 Teach Computing)	Online Safety Spotlight (first session of half term) Online communication To be aware of the positive and negative aspects of online communication. **Video Production** Learners will learn how to create short videos by working in pairs or groups. **Session 1** Learners will be introduced to video as a media format. They will see examples of videos featuring production and editing techniques that they will work towards using their own videos. **Session 2** Learners will explore the capabilities of a digital device (iPad) that can be used to record video. **Session 3** Learners will use a storyboard to explore a variety of filming techniques. **Session 4** Learners will plan a video by creating a storyboard. Their storyboard will describe each scene, and will include a script, camera angles, and filming techniques. **Session 5** Learners will film the scenes of their video. **Session 6** Learners will complete their video by removing unwanted content and reordering their clips. They will share their finished films by mirroring the iPad to the screen in the classroom. (Unit 5.2 Teach Computing) Program: iMovie	Online Safety Spotlight (first session of half term) Online reputation To understand how online information can be used to form judgements. **Data handling** Students learn about data through a variety of unplugged activities. They write and evaluate algorithms and programs using selection and repetition to use the micro:bit as a temperature recorder, an automatic warning system and a digital assistant. **Session 1** Pupils learn about data by researching data about a person of their choosing and exploring ways data can be grouped. **Session 2** Pupils go on a treasure hunt around school to find data before learning about sensors and writing programs to record the temperature in different locations. **Session 3** Students develop their understanding of sensors through unplugged activities and by writing algorithms using repetition and selection. They then apply their understanding to design and evaluate a gadget using a sensor. **Session 4** Children plan, program and test using the micro:bit as a temperature warning system. **Session 5** Children write a program to enable the Micro:bit to be used as a digital assistant. (Unit: Data Handling) https://microbit.org/teach/lessons/	Online Safety Spotlight (first session of half term) Online bullying To discover ways to overcome bullying. **Databases** Students learn how databases can be used to organise data in records. They use tools within a database to order and answer questions about data. They will create graphs and charts to help solve problems **Session 1** Learners will create a paper version of a record card database. Using a card template, they will create a data set, with each learner creating eight to ten cards linked to a theme, e.g. animals **Session 2** Learners will use a computer-based database to examine how data can be recorded and viewed. **Session 3** Learners will investigate how records can be grouped, using both the paper record cards created in Lesson 1 and a computer-based database from J2E. **Session 4** Learners will develop their search techniques to answer questions about the data. **Session 5** Learners create charts from their data in order to answer questions about it. **Session 6** Learners use a real-life database to ask questions and find answers in the context of a flight search. (Unit 5.4 Teach Computing) Program: free J2e data platform: https://www.j2e.com/database/	Online Safety Spotlight (first session of half term) Online health To understand how technology can affect health and wellbeing. **Selection in quizzes** Learners develop their knowledge of 'selection' by revisiting how 'conditions' can be used in programming, and then learning how the 'if… then… else...' structure can be used to select different outcomes. They use this knowledge to design a quiz **Session 1** Learners revisit previous learning on 'selection' and identify how 'conditions' are used to control the flow of actions in a program. **Session 2** Learners will develop their understanding of selection by using the 'if… then… else...' structure in algorithms and programs. **Session 3** Pupils learn how questions can be asked in Scratch, and how the answer, supplied by the user, is used to control the outcomes. **Session 4** Learners will complete designs for a quiz by using design templates to identify the questions that will be asked, and the outcomes for both correct and incorrect answers. **Session 5** Learners will use the Scratch programming environment to implement the first section of their algorithm as a program. **Session 6** Learners evaluate their completed programs (Unit 5.6 Teach Computing) Program: Scratch	Online Safety Spotlight (first session of half term) Recap on online safety taught throughout the year. **Game creation** Children use 2DIY 3D within Purple Mash to design, create, make and evaluate a game. **Session 1** Children review and analyse a computer game. They describe some of the elements that make a successful game. **Session 2** Children design the setting for their game so that it fits with the selected theme. They upload images or use the drawing tools to create the walls, floor, and roof. **Session 3** Children design characters for their game. They decide upon, and change, the animations and sounds that the characters make. **Session 4** Children make their game more unique by selecting the appropriate options to maximise the playability. They write informative instructions for their game so that other people can play it. **Session 5** Children evaluate their own and peers' games to help improve the design. (Unit 5.5 Purple Mash) Program: 2DIY3D on Purple Mash

Year 6 Autumn 1	Year 6 Autumn 2	Year 6 Spring 1	Year 6 Spring 2	Year 6 Summer 1	Year 6 Summer 2
Online Safety Spotlight (first session of half term) Life online To describe online issues that give us negative feelings and know how to get help. **Communication and collaboration** Learners explore how data is transferred over the internet. **Session 1** Students learn about IP addresses and the rules (protocols) that computers have for communicating with one another. **Session 2** Learners are introduced to the concept of packets and how they are used to transfer information over the internet **Session 3** Learners consider how people can work together when they are not in the same location. They discuss ways of working and complete a collaborative online project. **Session 4** Learners are introduced to another approach to online working: reusing and modifying work done by someone else **Session 5** They explore different methods of communication, before they consider internet-based communication in more detail. **Session 6** Students categorise different forms of internet communication. They then choose which method(s) they would use for the scenarios discussed in the previous lesson and explore issues around privacy, (Unit 6.1 Teach Computing)	Online Safety Spotlight (first session of half term) Sharing online To explore the impact and consequences of sharing online. **Blogging** This unit gives children an understanding of how to plan, create and present their own blog. **Session 1** Children understand how a blog can be used as an informative text. Children learn the key features of a blog. **Session 2** Children work collaboratively to plan a blog. **Session 3** Children can create a blog or blog post with a specific purpose. Children understand that the way in which information is presented has an impact upon the audience. **Session 4** Children post comments and blog posts to an existing class blog. Children understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. They assess the effectiveness and impact of a blog. (Unit 6.4 Purple Mash) Program: 2Blog	Online Safety Spotlight (first session of half term) Creating a positive online reputation To know how to create a positive online reputation. **Variables in games** Learners explore the concept of variables in programming through games in Scratch **Session 1** Learners are introduced to variables. They see examples of real-world variables (score and time in a football match) before they explore them in a Scratch project. Learners then design and make their own project that includes variables. **Session 2** Learners understand that variables are used in programs, and that they can only hold a single value at a time. **Session 3** Learners apply the concept of variables to enhance an existing game in Scratch. **Session 4** Learners will take on the role of a games designer. Learners first design the sprites and backgrounds for their project, then they design their algorithms to create their program flow. **Session 5** Learners implement the algorithms that they created in Session 4. In doing this, they identify variables in an unfamiliar project and learn the importance of naming variables. **Session 6** Learners improve their own projects and evaluate each other's projects (Unit 6.3 Teach Computing) Program: Scratch	Online Safety Spotlight (first session of half term) Capturing evidence To describe how to capture bullying content as evidence. **Introduction to spreadsheets** Learners will be supported in organising data into columns and rows to create their own data set. Learners will be taught the importance of formatting data to support calculations, while also being introduced to formulas and will begin to understand how they can be used to produce calculated data. **Session 1** Learners explore how data can be structured in a table. Finally they will input data into a spreadsheet. **Session 2** Learners develop their understanding of the structure of a spreadsheet. They will be introduced to cell references, data items and the concept of formatting cells. **Session 3** Learners will begin to use formulas to produce calculated data. **Session 4** Learners will calculate data using the operations of multiplication, subtraction, division, and addition. They will use these operations to create formulas in a spreadsheet. **Session 5** Learners will plan and calculate the cost of an event using a spreadsheet. **Session 6** Learners create charts in Microsoft Excel. (Unit 6.4 Teach Computing) Program: Microsoft Excel	Online Safety Spotlight (first session of half term) Password protection To manage personal passwords effectively. **3D modelling** Learners will develop their knowledge and understanding of using a computer to produce 3D models. **Session 1** Learners will be introduced to the concept of 3D modelling by creating a range of 3D shapes and also examine shapes from a variety of views within the 3D space. **Session 2** Learners manipulate 3D objects digitally. They resize objects in one, two, and three dimensions. **Session 3** Learners rotate objects in three dimensions, duplicate objects, and then use grouping and ungrouping to manipulate many objects at once. **Session 4** Introduce children to the dimensions of shapes in Tinkercad which will enable them to accurately resize and move shapes. Then introduce to placeholders which can be used to create holes in objects. **Session 5** Children see how architects use 3D design to visualise and plan buildings and communicate with clients. They will explode 3D models of buildings to see what shapes they comprise of. **Session 6** Learners will create a computer 3D model based on their design. (Unit 6.5 Teach Computing) Program: TinkerCAD.	Online Safety Spotlight (first session of half term) Think before you click To be aware of strategies that help protect people online. **Sensing Movement** Leaners program a Microbit to create a step counter **Session 1** Learners apply their knowledge of if, then, else statements to create a program that features selection influenced by a random number to create a micro:bit fortune teller project. **Session 2** Learners develop programs to update the variable by moving their micro:bit using the accelerometer to sense motion. **Session 3** Pupils modify a program which will enable the micro:bit to be used as a navigational device. To code this, they will adapt the code they completed to make a basic compass **Session 4** Pupils will design the algorithm and program flow for a step counter project. **Session 5** Pupils will use the design that they have created to make a micro:bit-based step counter. Pupils test the step counter. **Session 6** Pupils design and create their own project for the micro:bit based on what they have learned. (Unit 6.6 Teach Computing) Program: MakeCode Device: Micro:bits