

Aldwyn Primary School - Computing Overview



Nursery

Autumn 1

Autumn 2

Spring 1

Spring 2

Summer 1

Summer 2

Nursery (3 and 4 year olds)

- Explore how things work
- Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.
- Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.
- Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
- Knows that information can be retrieved from computers.
- Use and incorporate everyday computing into their learning and play activities.
- Navigate age-appropriate software through an interactive touch screen.

Reception

Autumn 1

Autumn 2

Spring 1

Spring 2

Summer 1

Summer 2

Reception

- Completes a simple program on a computer.
- Use and incorporate everyday computing into their learning and play activities.
- Uses ICT hardware to interact with age-appropriate computer software.

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Year 1

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Mouse Skills Learners will use different websites to help improve their mouse skills. Holding & moving the mouse. Using a mouse can be difficult with such small hands and there are many different skills to master such as click, left and right click, double click and using the scroll wheel. Hand-eye coordination Left & right Click. Double Click. Drag “n” Drop. Identify and launch links on a website. Able to run and complete mouse skill games.</p> <p>Using Clicker 8 paint Reinforce mouse movement. Left click to select items. Drag “n” drop.</p>	<p>E-safety Stranger danger, staying safe, not meeting up with strangers, not accepting or downloading files, and most importantly telling an adult if something makes them worried or uncomfortable.</p> <p>Digital Writing & Keyboard Skills use technology purposefully to create, organise, store, manipulate and retrieve digital content. Find letters on the keyboard and create simple documents. Use the spacebar, know how to type capital letters and correct work. Save to the correct place and re-open.</p>	<p>Login Skills / How can we paint using computers? This lesson introduces learners to the freehand tools available for digital painting. Learners make marks on a screen and explain which tools I used and draw lines on a screen and explain which tools have been used. Learners use a variety of paint programs to draw a picture and copy it into their working document. To use the shape tool and the line tools. They will add several digital drawings to a document, add text and save it.</p>	<p>Using shapes and lines This lesson introduces learners to the line and shape tools and revisits the fill and undo tools used for digital painting. Learners create their own digital painting in the style of an artist. To use the shape tool and the line tool. I can make marks with the square and line tools I can use the shape and line tools effectively. I can use the shape and line tools to recreate the work of an artist. I can save and retrieve my work.</p> <p>Key vocabulary primary colours, shape tools, line tool, fill tool, undo tool</p>	<p>Data & Information – Grouping Data This lesson introduces learners to data and information. Learners will begin to understand that objects have many different labels that can be used to put them into groups. I can describe objects using labels. I can match objects to groups. I can identify the label for a group of objects. Group and count, I can count objects, I can group objects, I can count a group of objects.</p> <p>Key vocabulary Data, labels, count, group.</p>	<p>Programming Moving a robot. Learners will be introduced to early programming concepts. Children will start to write simple code based on moving objects around the classroom. Children are introduced to the concept of algorithms and learn this code run in a stick order and is simply a set of instructions that the computer will follow. Learners will use online version of a BeeBot and will be able to predict the outcome of a command on a device and link commands together. Learners will correct any mistakes in their program - debug their route.</p>

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Year 2

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Creating Documents Learners use technology purposefully to create, organise, store, manipulate and retrieve digital content. They will become more familiar with using a keyboard and mouse to enter and remove text. Add content, pictures and text. Learners will begin to explore the different tools that can be used in word processors to change the look of the text. Save the document with the correct name, find and load the file for further editing. Learners use capital letters, full stops and commas where necessary. Learners will make comparisons between using a computer for writing and writing on paper. The learners will discuss how the two methods are the same and different and think of examples to explain this.</p>	<p>e-safety Stranger danger, staying safe, not meeting up with strangers, not accepting or downloading files, and most importantly telling an adult if something makes them worried or uncomfortable. Introducing Google Apps, Google Slides, digital images. Children learn the steps that allow them to log into Google Cloud and access work. They work collaboratively on a Google Jamboard adding pictures and text. Children learn how to access Google Classroom and open assigned work. They add and manipulate images and text to produce a presentation all about themselves. Using their new skills, they make a Christmas card to take home.</p>	<p>Pictograms Learners will begin to understand what the term data means and how data can be collected in the form of a tally chart. They will learn the term 'attribute' and use this to help them organise data. They will then progress onto presenting data in the form of pictograms and finally block diagrams. Learners will use the data presented to answer questions. During this unit of work learners will use online pictogram tool which can be accessed online using a desktop, laptop or tablet computer. Worksheets will be a mix of paper and online hosted on Google Classroom.</p>	<p>Introduction to Coding This unit develops learners' understanding of instructions in sequences and the use of logical reasoning to predict outcomes. Children start by making a simple algorithm to guide them around a room or how to get to school. Learners will use given commands in different orders to investigate how the order affects the outcome. Learners will start to use simple block programming to solve a series of challenges, learn how to debug their errors and mistakes. They make use of loops, repetition and sequences. Children will explore and then test those algorithms as young programmers and debug them.</p>	<p>Introduction to Scratch In this unit learners are introduced to the concept of block coding and how block can be slotted together in a "sequence" to make a program. Children are introduced to the different sections that make up the scratch program and start to make simple animations. Learners look at repetition and the use to loops in reducing the amount of code required for a series of actions to take place. Children work through several challenges to create a simple animation and a chatbot.</p>	<p>Digital Music In this unit, learners will be using a computer to create music. They will listen to a variety of pieces of music and consider how music can make them think and feel. Learners will compare creating music digitally and non-digitally. Learners will look at patterns and purposefully create music. learners will explore rhythm. They will create patterns and use those patterns as rhythms. Learners will explore how music can be used in different ways to express emotions and to trigger their imaginations. Children Scratch to create their own music and animate a sprite.</p>

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Year 3

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Using Google Classroom & Research using Google Search.</p> <p>Log into a computer using their own login. Launch Google Chrome and log into Google Workspace for Education.</p> <p>Introduction to using Google Classroom. How to join a class, find assigned work and open a new assignment. Open a Google Slide template, add text and pictures relating to the given topic. Change backgrounds and produce transparent text boxes.</p> <p>Transfer written research onto each slide.</p> <p>Complete and present slideshow.</p>	<p>Word processing.</p> <p>Format document into different styles.</p> <p>Use some of the main keyboard shortcuts.</p> <p>Insert images.</p> <p>Apply specific effects to an image. Format text style including font, text size and colour.</p> <p>Understand how to use the spell checker.</p> <p>Add or delete rows or columns in a table</p> <p>Use acquired skills to complete a document, Find and complete assignments on Google Classroom. Complete document or presentation linked to current topic work.</p>	<p>Data Handling / Branching Databases.</p> <p>Learners will start to explore questions with yes/no answers, and how these can be used to identify and compare objects. They will create their own yes/no questions, before using these to split a collection of objects into groups.</p> <p>Learners will continue to develop their understanding of ordering objects/images in a branching database structure. They will use attributes to create questions with yes/no answers and will apply these to given objects.</p> <p>Learners will compare the efficiency of different branching databases.</p> <p>Learners will independently plan a branching database that will identify different types of animals.</p>	<p>Coding</p> <p>Learners recap on the Scratch and familiarising themselves with the basic layout of the screen.</p> <p>Key vocabulary Scratch, programming, blocks, commands, code, sprite, costume, stage, backdrop. Learners will be able to explain the relationship between an event and an action. They will be able to program and choose which keys to use for actions and explain my choices.</p> <p>Children will be able to choose a character for my project and program suitable size. Learners will be able to a programming extension and choose blocks to set up my program. Learners</p>	<p>Desktop publishing, Creating pictures / editing images</p> <p>Learners will become familiar with the term's 'text' and 'images' and understand that they can be used to communicate messages. Learners look at using images and text to communicate a message effectively. We introduced to the term's 'templates', 'orientation', and 'placeholders' within desktop publishing software. learners will think about the different ways information can be laid out on a page. 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. Children create posters and documents that include their own image that has been changed and edited in several different ways.</p>	<p>Creating media – Stop Frame Animation</p> <p>Learners will use a range of techniques to create a stop-frame animation using Chromebooks or computers. Next, they will apply those skills to create a story-based animation. This unit will conclude with learners adding other types of media to their animation, such as music and text. Children will create an effective digital flip book style animation and will explain how an animation/flip book works. Learner will work in groups to plan an educational animation and create a storyboard describing the story and events. Children will explain ways to make my animation better and add media. Children will export their finish animation and evaluate my final film.</p>

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Year 4					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>Using Technology to discover Geography Year 4 explore from the highest mountain to the deepest depths of the oceans with Google Maps and Google Earth. We use 3D views and street views to bring places alive. Children use Google maps to explore their own area and realise the limitation of Google Maps when exploring the hills of the peak district, so we switch to OS maps. We use Google Jamboard to share our knowledge and understanding. Children research the population of the continents and visualise that data in a graph using Google Sheets. Children complete a geography worksheet, finding suitable pictures and researching information.</p>	<p>Introducing Digital Devices. How does a digital device work? Sorting digital and non-digital devices. Input, Processing, Output. What parts make up a digital device. How do digital devices help us. How am I connected. How are computers connected – introduction to computer networks. What does my home network look like. What does our school network look like. Identifying the different part of a computer. A look at the Raspberry Pi and BBC micro bit.</p>	<p>Repetition in Shapes. This lesson will introduce pupils to programming in Logo. Logo is a text-based programming language where pupils type commands that are then drawn on screen. Learners will create programs by planning, modifying, and testing commands to create shapes and patterns. Pupils will learn the basic Logo commands and will use their knowledge of them to read and write code. Using their knowledge learners move to Scratch and design algorithms to draw complex shapes learning about repetition and loops. Children will also look at the principle of “Compose / Decompose”, Decompose — break something down into smaller parts.</p>	<p>Editing & Audio production. Learner will record and re-record their voices to improve their recordings. They will edit the recordings, removing long pauses and mistakes. Learners will also listen to a range of podcasts and identify the features of a podcast.</p> <p>Podcast Production. Learner will plan their own podcast. Produce and record a script on a subject they are interested in. They will remove any mistakes add interviews, music and sound effect. Learners can demonstrate making a more engaging recording by importing sound, aligning it, and setting the volume of tracks.</p>	<p>Coding - Repetition in Games. Students will explore the concept of repetition in programming using the Scratch environment. Learners look at the difference between count-controlled and infinite loops and use their knowledge to modify existing animations and games using repetition. Their final project is to design and create a game which uses repetition, applying stages of programming design throughout. Children look at different types of loops: infinite loops and count-controlled loops. learners look at a model project that uses repetition. They then design their own games based on this model.</p>	<p>Graphic Design - 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. They will consider the impact that editing images can have and evaluate the effectiveness of their choices. learners to the concept of editing images. They will go on to explore when we need to rotate and crop an image as well as how to use an image editor to make these changes. Learners then use copy and paste within one image and between two images to produce a combined image. Learning will use A.I. to make changes to their image and we introduce animation in the form of GIF's.</p>

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Year 5					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>E-safety – passwords and keeping safe online. As part of keeping children safe in education year 6 have been looking at e-safety, fake news and online scams. Online Safety is being aware of the nature of the possible threats that you could encounter whilst engaging in activity through the Internet, these could be security threats, protecting and managing your personal data, online reputation management, and avoiding harmful or illegal content. Identify rules for avoiding unsafe, dangerous or risky online situations and behaviours. Use strategies to use when encountering potentially unsafe, dangerous or risky online situations and behaviours. The dangers of sharing too much information online. Knowing who to turn to for help and support.</p>	<p>3D Modelling & Virtual Reality. Tinkercad & Sketchup Describe what 3D modelling is. Talk about its development and who uses it? Understand how 3D models are designed and can describe the different layers. Describe what BIO Printing is. Describe what Virtual Reality is? What it can be used for? Describe the connection between 3D modelling and VR. Virtual Reality & A.I. Good and bad sides of virtual reality. Describe what Facebook’s Metaverse is. The future connection between VR and social media sites. Design your own VR world & characters.</p>	<p>Scratch Code Club Learn how to program your own interactive stories, games and animations.</p>	<p>Computing systems and networks - Systems and searching Students develop their understanding of computer systems and how information is transferred between systems and devices. Learners consider small-scale systems as well as large-scale systems. We recap on the input, output, and process aspects of a variety of different real-world systems. Learners discover how information is found on the World Wide Web, through learning how search engines work (including how they select and rank results) and what influences searching, and through comparing different search engines.</p>	<p>Programming -Selection in quizzes. Learners will 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 depending on whether a condition is ‘true’ or ‘false’ They are introduced to the blocks for using conditions in programs using the Scratch programming environment. They modify the conditions in an existing program and identify the impact this has. Learners consider how the ‘if... then... else...’ structure can be used to identify two responses to a binary question (one with a ‘yes or no’ answer).</p>	<p>Making A Movie - Video Production Learn how to create short videos by working in groups. As they progress, they will be exposed to topic-based language and develop the skills of capturing, editing, and manipulating video. Learners will be introduced to video as a media format. Use examples of videos featuring production and editing techniques that they will work towards using their own videos. Learners will plan a video by creating a storyboard. Learners will complete their video by removing unwanted content and reordering their clips. Then export their finished video and evaluate the effectiveness of their edits. Finally, they will consider how they could share their video with others.</p>

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Year 6					
Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<p>e-safety, Fake News and online scams. Recognise potentially unsafe, dangerous or risky online situations and behaviours. The dangers of sharing too much information online. Knowing who to turn to for help and support. Recognise and Understand misinformation, disinformation and hoaxes. History of fake news. Able to recognise scam email and know how to report them Learn about the many ways scammers can trick people, particularly the old. We look at some of the best fake news of the 20th century and study one practically successful scam and ask why it was so believable. Children create their own fake news headlines and create graphic to back up the story. Children also create and send several carefully crafted phishing emails.</p>	<p>Trip Planner (Intro. to Spreadsheets) Children will choose or be given one state of America. They will then plan a holiday tour of that state taking in at least six tourist destinations. Children will need to plan the departure and destination airports and choose a hotel to stay at during their holiday. The tour will need to be visualised, that is, the whole tour will need to be mapped out on Google Earth with each of the stops plotted and mapped out and information and pictures added about that location. Complete a worksheet and gather data about the population growth of their chosen state from 1900 to the present day. A graph will be created and added to their worksheet.</p>	<p>e-commerce / web site design. Understand what e-commerce is and how it has quickly developed since the introduction of the internet. Look at the most common types of e-commerce. Understand the good points of e-commerce, but also look at the downside. Look at the most used sites in the U.K along with the most successful and richest companies online. What makes a successful online company? Brainstorm ideas with the view of setting up an e-commerce website. Understand what might work and what might not. Plan their own e-commerce companies, including a business plan. Produce a logo, company profile and e-shopping website. Understand what payment methods are available and how payment can be deferred. Look at Google ads.</p>	<p>3D modelling (Clitheroe Castle) Children recall skills they used in the Year 5 lesson “3D Modelling & Virtual Reality”. Learners explore the world of 3D modelling by building a 3D model based on Clitheroe Castle. Using their Google account, they will access SketchUp, explore the different tools available to them and collaborate on their design. Learners look at what 3D modelling is, talk about its development and who uses it today. Children go on to collaborate and share their ideas and work, Designs are saved and uploaded to Google Classroom for the rest of the class for peer assessment.</p>	<p>Variables in Games. Learners explore the concept of variables in programming through games in Scratch and use variables to create a simulation of a scoreboard. Children can explain that the way a variable change can be defined and identify that variables can hold numbers or letters. Learners apply the concept of variables to enhance an existing game in Scratch. They predict the outcome of changing the same change score. Learners work at the ‘design’ level of abstraction, where they create their artwork and algorithms. Learners identify ways that my game could be improved, use variables to extend my game and share my game with others</p>	<p>BBC micro:bit Coding & Sensing Movement This brings together elements of all the four programming constructs: sequence, repetition, selection and variables. It also demonstrates the concept of INPUT. PROCESS, OUTPUT model which was covered in year 4. The unit begins with a simple program for pupils to build in and test within the new programming environment, before transferring it to their micro:bit. Children can apply my knowledge of programming to a new environment and develop their programs to update the variable by moving their micro:bit using the accelerometer to sense motion. Learners understand the micro:bit has a number of built in sensors that can be accessed and managed by software.</p>