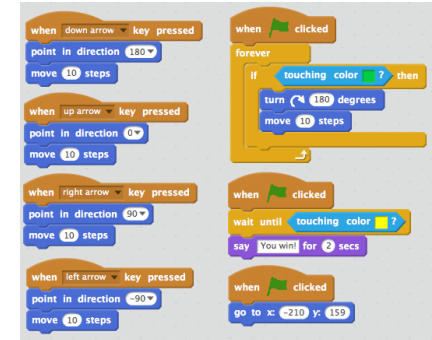




# COMPUTING



## at Ashlands Primary School

### INTENT



**At Ashlands Primary School, we believe computing prepares pupils to participate in a continually changing world in which many aspects of everyday life are increasingly transformed by access to varied and developing technology. We recognise that computing is an important tool in both the society we live in and in the process of teaching and learning.**

**Pupils use computing tools to find, explore, analyse, exchange and present information responsibly, creatively and with discrimination. They learn how to effectively employ computing to enable speedy access to ideas and experiences from a wide range of sources.**

Our vision is for all teachers and learners in our school to become confident users of computing so that they can develop the skills, knowledge and understanding which enable them to use appropriate computing resources effectively as powerful tools for teaching and learning.

By the end of year 6, pupils will learn to:

- Understand how networks can be used to retrieve and share information, and how they come with associated risks.
- Select and create a range of media including text, images, sounds, and video.
- Understand how data is stored, organised, and used to represent real-world artefacts and scenarios.
- Understand the activities involved in planning, creating, and evaluating computing artefacts.
- Understand what a computer is, and how its constituent parts function together as a whole.
- Understand how individuals, systems, and society as a whole interact with computer systems.

- Be able to comprehend, design, create, and evaluate algorithms.
- Create software to allow computers to solve problems.
- Use software tools to support computing work.

Understand risks when using technology, and how to protect individuals and systems.

## IMPLEMENTATION

Each class will complete units of work each term based on the national curriculum using the 'Teach Computing' scheme of work (see Long Term Plan for Computing).

Each class is allocated time with laptops to accomplish their computing work units. A weekly timetable for laptops and iPads is displayed in the staffroom enabling staff to sign up for additional time. The Teach Computing curriculum is structured into units for each year group, and each unit is broken down into lessons. Units can generally be taught in any order, with the exception of programming, where concepts and skills rely on prior knowledge and experiences. A progression of skills meeting specific learning objectives can be viewed on the KS1 and KS2 Curriculum Maps:

Children may be required to work individually, in pairs or in small groups according to the nature or activity of the task.

## IMPACT






Formative assessment occurs on a lesson by lesson basis based on the lesson objectives and outcomes in the 'Teach Computing' scheme of work. These are conducted informally by the class teacher and are used to inform future planning.




The work is assessed against the 'I can' expectations for each lesson against the assessment rubric for each unit. For each objective a child is assessed as either 'Emerging', 'Meets expectations' or 'Exceeds expectations'.

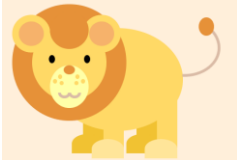
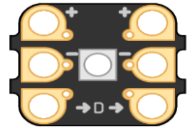
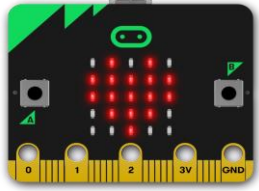

When work is completed, samples of work are kept either in the shared pupil folder for their class on the school's local network or online on Purple Mash or Google Classroom in their personal or shared class accounts.

As children progress through the learning involved in each year of study, learners become confident users of computing so that they can develop the skills, knowledge and understanding which enable them to use appropriate computing resources effectively as powerful tools for teaching and learning.

## Computing Subject Overview

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
<b>Nursery</b>	<p><b>3-4 years</b>                      We explore how things work.                      We use torches and programmable toys.                      We gather information from technology.                      We take photographs using our iPads.</p>					
<b>Reception</b>	<p><b>Children on Reception</b>                      With an adult we use the internet to find information.                      Look at maps and google Earth with an adult.                      We use story headphones.                      We take photographs using our iPads.                      We complete a game using a touch screen.                      We use torches and programmable toys.</p>					
<b>Year 1</b>	<p><b>Technology around us</b></p>  <p>Develop their understanding of technology and how it can help us.</p>	<p><b>Creating media – Digital painting</b></p> <p>Use <b>2Paint</b> on <b>Purple Mash</b> to develop their understanding of a range of tools used for digital painting.</p>	<p><b>Creating media – Digital writing</b></p> <p>Use <b>2Write</b> or <b>2Publish</b> on <b>Purple Mash</b> to develop their understanding of the various aspects of using a computer to create and manipulate text.</p>	<p><b>Data and information – Grouping data</b></p> <p>Label, group and search (important aspects of data and information).</p>	 <p>Use <b>BeeBots</b> to explore using individual commands, both with other learners and as part of a computer program.</p>	<p><b>Introduction to animation</b></p> <p>Use <b>ScratchJr</b> to explore the way a project looks by investigating sprites and backgrounds.</p>
<b>Year 2</b>	<p><b>IT around us</b></p> <p>Look at information technology at school and beyond, in settings such as</p>	<p><b>Creating media – Digital photography</b></p> <p>Learn to recognise that different devices can be used to capture photographs and will gain experience</p>	<p><b>Creating media – Making music</b></p>  <p>Use</p>	<p><b>Data and information – Pictograms</b></p> <p>Learners will use the <b>J2Data</b> website resources to begin to understand what data means</p>	<p><b>Robot algorithms</b></p> <p>Use instructions in sequences and use logical reasoning to predict outcomes.                      Use <b>BeeBots</b> to</p>	<p><b>An introduction to quizzes</b></p>  <p>Recaps learning from the Year 1 <b>ScratchJr</b></p>

	shops, hospitals, and libraries.	capturing, editing, and improving photos.	<b>ChromeMusicLab</b> on a computer to create music. Listen to a variety of pieces of music and consider how music can makes you think and feel.	and how this can be collected in the form of a tally chart.	give commands in different orders to investigate how the order affects the outcome.	unit 'Programming B – Programming animations'.
<b>Year3</b>	<p><b>Connecting computers</b></p> <p>Develop understanding of digital devices, with an initial focus on inputs, processes, and outputs. Compare digital and non-digital devices.</p>	<p><b>Creating media – Animation</b></p>  <p>Use a range of techniques to create a stop frame animation using <b>iMotion</b> on the school <b>iPads</b>.</p>	<p><b>Creating media – Desktop publishing</b></p> <p>Become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages.</p>	<p><b>Branching databases</b></p> <p>Use the <b>J2Data</b> website and its resources to develop an understanding of what a branching database is and how to create one.</p>	<p><b>Sequence in music</b></p>  <p>Explore the concept of sequencing in programming through <b>Scratch</b>. It begins with an introduction to the programming environment, which will be new to most learners.</p>	<p><b>Events and actions</b></p> <p>Explore the links between events and actions, while consolidating prior learning relating to sequencing. Begin by using <b>Scratch</b> moving a sprite in four directions (up, down, left, and right).</p>
<b>Year 4</b>	<p><b>The Internet</b></p> <p>Apply knowledge and understanding of networks, to appreciate the internet as a network of networks which need to be kept secure.</p>	<p><b>Creating media – Audio editing</b></p> <p>Examine devices capable of recording digital audio, which will include identifying the input device (microphone) and output devices (speaker or headphones).</p>	<p><b>Creating media – Photo editing</b></p>  <p>Develop an understanding of how digital images can be changed and edited using <b>Pinta</b>, and how they can then be resaved and reused.</p>	<p><b>Repetition in shapes</b></p> <p>Use repetition and loops within programming. Create programs by planning, modifying, and testing commands to create shapes and patterns.</p>	<p><b>Repetition in games</b></p> <p>Explore the concept of repetition in programming using the <b>Scratch</b> environment.</p>	<p><b>Data and info – Data logging</b></p> <p>Consider how and why data is collected over time. Consider the senses humans use to experience the environment and how computers can use special input devices called sensors to monitor the environment.</p>

<b>Year 5</b>	<b>Creating media – Vector drawing</b>	<b>Selection in quizzes</b>	<b>Sharing information</b>	<b>Data and info – Flat-file databases</b>	<b>Selection in Computing</b>	<b>Creating media – Video editing</b>
	 <p>Learn that vector images are made up of shapes. Use the different drawing tools and learn how images are created in layers.</p>	<p>Develop knowledge of ‘selection’ and ‘conditions’. Use ‘if... then... else...’ statements to select different outcomes depending on whether a condition is ‘true’ or ‘false’.</p>	<p>Develop an understanding of computer systems and how information is transferred between systems and devices.</p>	<p>Learn how a flat-file database can be used to organise data in records. Use tools within a database to order and answer questions about data.</p>	 <p>Use physical computing to explore the concept of selection in programming through the use of the Crumble programming environment.</p>	<p>Learn how to create short videos in groups. Develop the skills of capturing, editing, and manipulating video.</p>
<b>Year 6</b>	<b>Communication</b>	<b>Sensing</b>	<b>Creating media – Web page creation</b>	<b>Variables in games</b>	<b>Data and info – Spreadsheets</b>	<b>Creating media – 3D Modelling</b>
	<p>Learn about the World Wide Web as a communication tool and how we find information on the internet, through learning how search engines work.</p>	 <p>This unit is the final KS2 programming unit and brings together elements of all the four programming constructs: sequence, repetition, selection and variables.</p>	<p>Create websites for a chosen purpose. Identify what makes a good web page and use this information to design and evaluate a website using Google Sites.</p>	 <p>Explore the concept of variables in programming through games in Scratch. Learn what variables are, and relate them to real-world examples of values that can be set and changed.</p>	<p>Learn to use spreadsheets. Organise data into columns and rows to create data sets.</p>	<p>Develop their knowledge and understanding of using a computer to produce 3D models.</p>