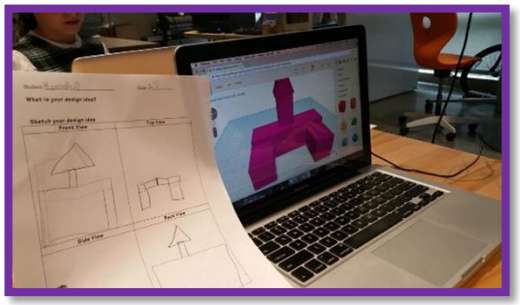
The Meadows Primary School - **Computing**







Introduction to computing

- Intent: **Why we do what we do**
- Implementation: **How we teach computing**
- Impact: **How we will know if we have been successful**

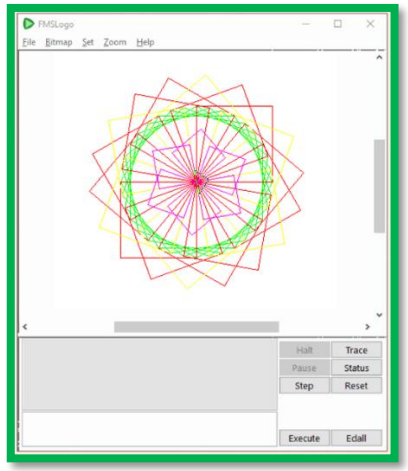
Planning:

- **Whole school long term planning**
- **A learning journey through Computing at The Meadows**
- **Progression of skills**

Computing policy

How can you help your child at home?

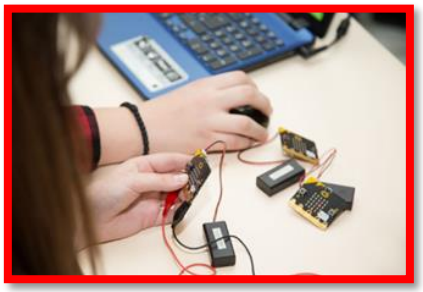
Introduction to Computing at The Meadows



At the Meadows, we want pupils to be creators and masters of technology rather than merely ‘users’. Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We follow a broad curriculum than builds each year on previous learning in order to extend and broaden pupils’ knowledge and skills. Through their computing education our pupils will be confident and responsible users of technology as a tool, and they will be fluent with a range of technological tools.

A well-developed understanding of how to use technology safely in the modern world is incredibly important for our children as they get older and so online safety is embedded throughout the Computing and PSHE curriculum. We also have discrete online safety sessions each term during our ‘enrichment weeks’ to ensure we are addressing specific or developing issues around online communication and use of technology.

❖ Intent: **Why we do what we do.**



At the Meadows, we want pupils to be creators and masters of technology rather than merely 'users'. This will prepare them to be able to control and adapt technology to serve the purposes they require as well as enabling them to enter in to the ever-increasing list of careers where confidence with a command of technology is essential. As a school, we want to respond to new developments in technology and educated our children so that they are confident developing their own computing skills, understanding and interest beyond the end of their school life.

Technology is everywhere and will play a pivotal part in students' lives. Therefore, we want to model and educate our pupils on how to use technology positively, responsibly and safely. We want our pupils to be creators, not just consumers, and our broad curriculum encompassing computer science, information technology and digital literacy reflects this. We will ensure that our teaching meets, and hopefully exceeds, the requirements of the national curriculum programmes of study for Computing. Beyond Computing as a subject, we want our pupils to see technology as a tool that can be applied to many areas of work and life in order to enhance learning or provide greater flexibility or opportunities.

We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. Building our knowledge in this subject will allow pupils to effectively demonstrate their learning through creative use of technology. We recognise that technology can allow pupils to share their learning in creative ways but with these opportunities for online interactions there are also risks and responsibilities. Through experience and guidance we want our pupils to become confident navigating these, and future, issues in an informed and responsible way. Young people will always be a step ahead of educators in what is the latest technology or trend, and so we view e-safety as a continuous conversation between our teachers and our pupils' experience of technology and the online world. We will respond to new technological issues and concerns as they arise and encourage our pupils to be able to share their concerns and experiences with us. E-Safety will be formally embedded in our Computing and PSHE curriculum, but like technology itself, it will also exist informally through all our school life and classroom conversations.

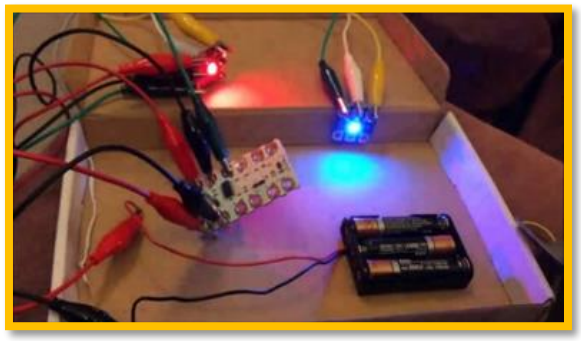


Technology is a tool, and like any tool it can be used to improve productivity, create better outcomes and ease our lives, but tools can also be dangerous and inefficient when misused. Knowing how and when to use a tool properly is the best to ensure its best use. Through their computing education we want our pupils to be confident and responsible users of technology as a tool. We want our pupils to be fluent with a range of tools to best express their understanding and have the independence and confidence to choose the best tool to fulfil a task or challenge. We also

understand the accessibility opportunities technology can provide for our pupils and will look for opportunities where technology can be used to aide pupils in this regard. We want our pupils to leave school skilled, responsible and empowered in their use of technology.

- Implementation: **How we teach Computing at The Meadows**

We follow a broad curriculum than builds each year on broaden pupils' knowledge and skills. We follow the 'Teach developed in consultation with the National Centre of DfE based on the latest research and consultation with structure where the same five core strands are taught each learning. Due to the nature of our year group cohorts and on a two-year rolling programme to ensure all pupils receive through the school.



previous learning in order to extend and Computing' scheme of work, which was Computing Excellence (NCCE) and the teachers. The scheme uses a spiral year, building on the previous year's class organisation, our curriculum will run the full curriculum as they progress up

In KS1 & KS2 Computing lessons will be scheduled for each week, though some classes may choose to group this scheduled time in to less frequent but extended lessons when appropriate. In the EYFS, Computing will be integrated into the children's learning as required by the new EYFS Framework, though no discrete lessons will be formally scheduled.

As technology consists of a mixed and fluent ecology of hardware and software, the record of pupils' learning will reflect this. Where possible, digital work will be saved to each class's drive on SharePoint, though some work may also be shared and submitted through the class's Microsoft Teams portal. Work done on iPads will be uploaded and saved to Seesaw when possible. As the curriculum also features knowledge based learning, 'unplugged' paper-based activities will be stored in an individual pupil plastic folder in each class.

❖ Impact: **How we will know if we have been successful**

Through their computing education our pupils will be confident and responsible users of technology as a tool and they will be fluent with a range of technological tools. They will have the independence and confidence to choose the best tool to complete a task or challenge successfully. Our pupils will be able to identify hardware and software that could be used to complete or improve an activity, and be able to work collaboratively using chosen software and hardware. Our pupils will also be able to confidently find a suitable system for saving, uploading or sharing content they have created while understanding and managing potential risks that may need to be considered.



Our pupils will be happy to discuss with teachers contemporary issues regarding e-safety and any new developments that may arise. They will be able to explain how they can use technology responsibly and what steps they can take to keep safe online.

These skills and knowledge will be evidenced by work that the pupils produce, which will be stored in a suitable and easy to access location, depending on the type of content created and the devices used to create it. Children's progress and development will be monitored frequently by class teachers and the subject leader.

Whole school long term planning

	Year 1 Wrens	Years 1/2 Robins	Year 2 Owls	Year 3 Puffins	Year 3&4 Kingfishers	Year 4 & 5 Kestrels	Year 5 Hawks	Year 6 Eagles &
Cycle A	Year 2 SOW	Year 2 SOW	Year 2 SOW	Year 3 SOW	Year 4 SOW	Alternative Year 4/5 SOW	Alternative Year 4/5 SOW	Year 6 SOW
Cycle B	Year 1 SOW	Year 1 SOW	Year 1 SOW	Year 3 SOW	Year 4 SOW	Year 5 SOW	Year 5 SOW	Year 6 SOW

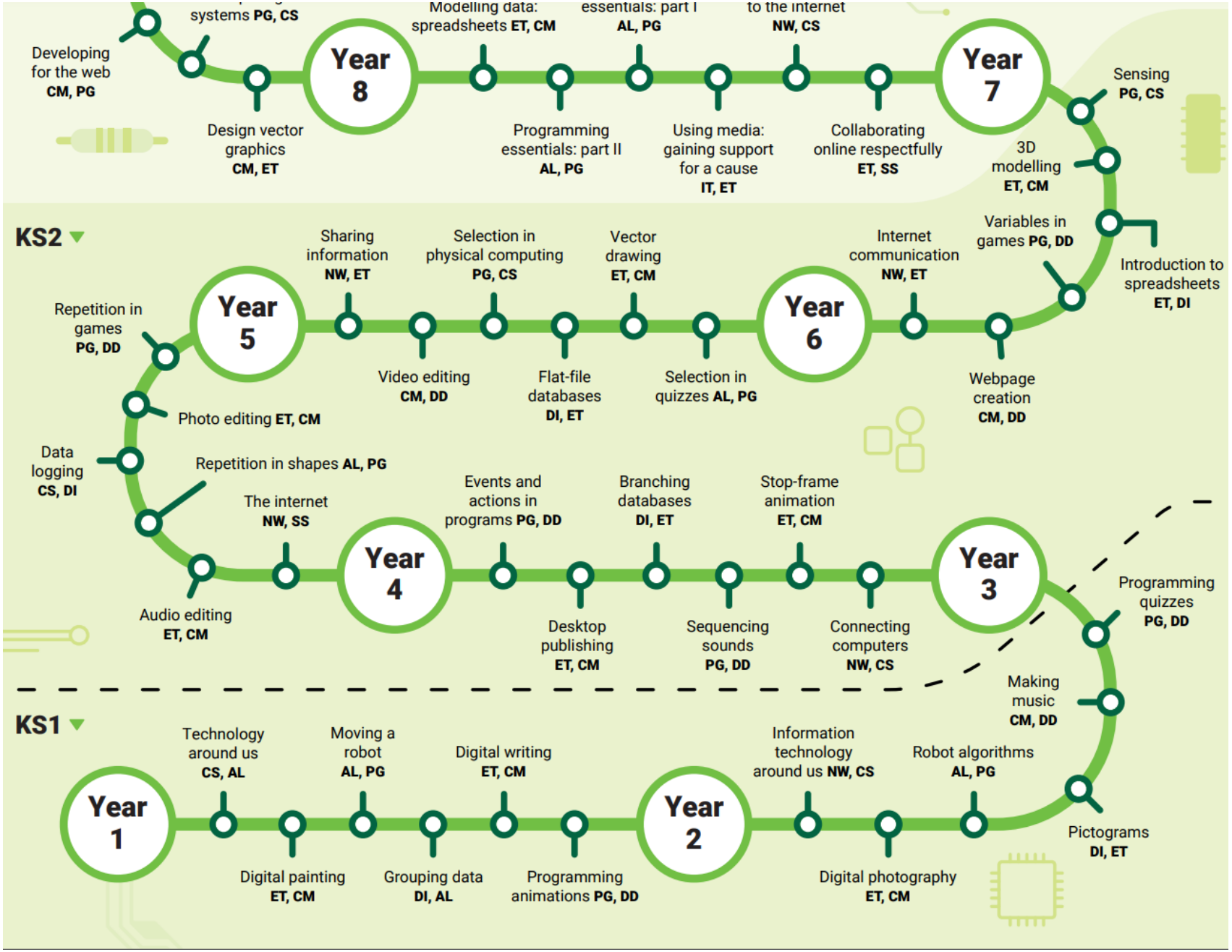
Key Stage 1

	Autumn		Spring		Summer	
Year 1 **Cycle B:** Wrens Robins Owls	**Technology around us** Recognising technology in school and using it responsibly.	**Digital painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	**Moving a robot** Writing short algorithms and programs for floor robots, and predicting program outcomes.	**Grouping data** Exploring object labels, then using them to sort and group objects by properties.	**Digital writing** Using a computer to create and format text, before comparing to writing non-digitally.	**Programming animations** Designing and programming the movement of a character on screen to tell stories.
Year 2 **Cycle A:** Wrens Robins Owls	**Information technology around us** Identifying IT and how its responsible use improves our world in school and beyond.	**Digital photography** Capturing and changing digital photographs for different purposes.	**Robot algorithms** Creating and debugging programs, and using logical reasoning to make predictions.	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Making music** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	**Programming quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.

Key Stage 2

	Autumn		Spring		Summer	
Year 3 **Puffins** **Cycle A & B**	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	**Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story.	**Sequencing sounds** Creating sequences in a block-based programming language to make music.	**Branching databases** Building and using branching databases to group objects using yes/no questions.	**Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose.	**Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions.
Year 4 **Kingfishers** **Cycle A & B**	**The internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**Audio editing** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes.	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game.
Year 5 **Cycle B** Kestrels Hawks	**Sharing information** Identifying and exploring how information is shared between digital systems.	**Video editing** Planning, capturing, and editing video to produce a short film.	**Selection in physical computing** Exploring conditions and selection using a programmable microcontroller.	**Flat-file databases** Using a database to order data and create charts to answer questions.	**Vector drawing** Creating images in a drawing program by using layers and groups of objects.	**Selection in quizzes** Exploring selection in programming to design and code an interactive quiz.
Year 6 **Cycle A & B** Eagles Falcons	**Internet communication** Recognising how the WWW can be used to communicate and be searched to find information.	**Webpage creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	**Variables in games** Exploring variables when designing and coding a game.	**Introduction to spreadsheets** Answering questions by using spreadsheets to organise and calculate data.	**3D modelling** Planning, developing, and evaluating 3D computer models of physical objects.	**Sensing** Designing and coding a project that captures inputs from a physical device.

A child's learning journey through Computing at The Meadows



Progression of skills & knowledge in Computing

Strand	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computing systems and networks	Recognising technology in school and using it responsibly.	Identifying IT and how its responsible use improves our world in school and beyond.	Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	Identifying and exploring how information is shared between digital systems.	Recognising how the WWW can be used to communicate and be searched to find information.
Creating media	Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally. Using a computer to create and format text, before comparing to writing non-digitally.	Capturing and changing digital photographs for different purposes. Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	Capturing and editing digital still images to produce a stop-frame animation that tells a story. Creating documents by modifying text, images, and page layouts for a specified purpose.	Capturing and editing audio to produce a podcast, ensuring that copyright is considered. Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	Planning, capturing, and editing video to produce a short film. Creating images in a drawing program by using layers and groups of objects.	Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation. Planning, developing, and evaluating 3D computer models of physical objects.
Programming	Writing short algorithms and programs for floor robots, and predicting program outcomes. Designing and programming the movement of a character on screen to tell stories.	Creating and debugging programs, and using logical reasoning to make predictions. Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.	Creating sequences in a block-based programming language to make music. Writing algorithms and programs that use a range of events to trigger sequences of actions.	Using a text-based programming language to explore count-controlled loops when drawing shapes. Using a block-based programming language to explore count-controlled and infinite loops when creating a game.	Exploring conditions and selection using a programmable microcontroller. Exploring selection in programming to design and code an interactive quiz.	Exploring variables when designing and coding a game. Designing and coding a project that captures inputs from a physical device.

Data and information	Exploring object labels, then using them to sort and group objects by properties.	Collecting data in tally charts and using attributes to organise and present data on a computer.	Building and using branching databases to group objects using yes/no questions.	Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	Using a database to order data and create charts to answer questions.	Answering questions by using spreadsheets to organise and calculate data.

How can you help your child at home?

Generally speaking, kids love to play and explore digital devices, so it should be easy to get your children learning Computing at home!

A great start is simply providing your children with the opportunity to use and explore a variety of different digital devices beyond just using a tablet or smartphone. Laptops and desktop PCs are now less commonly used by children but they are still the primary computer type used in the workplace, so allowing children to use full computers at home will help build core skills such as using a mouse or touchpad, typing and navigating a desktop operating system.

There are many free websites and apps that can be used at home to encourage creativity and learning. Below is a list of apps and websites for children and parents to explore:

KS1 pupils at home

- ScratchJr - Home
- KS1 Computing - England - BBC Bitesize
- Typing Club Junior
- Learn Computer Science - Code.org
- Daisy the Dinosaur on the App Store (apple.com)
- Programming for Kids | Kodable
- Coding App for Kids | codeSpark Academy
- Chrome Music Lab (chromeexperiments.com)

KS2 pupils at home

- ScratchJr - Home
- Scratch - Imagine, Program, Share (mit.edu)
- Learn Computer Science - Code.org
- KS2 Computing - BBC Bitesize
- Learn Touch Typing Free - TypingClub
- LightBot
- Programming for Children | Game-Based Coding | CodeMonkey
- Programming for Kids | Kodable

- Coding App for Kids | codeSpark Academy
- Tinkercad | Create 3D digital designs with online CAD | Tinkercad
- Chrome Music Lab (chromeexperiments.com)
- Draw Freely | Inkscape