**Computing Progression of Skills**

**OUR VISION FOR TREWIRGIE INFANTS’SCHOOL**

**‘We care, we help, we succeed’**

**OUR MISSION:**

* To inspire children to engage in learning, and be valued members of a caring, supportive, and successful school.
* For all our children to develop life- long learning skills; to be independent and creative thinkers and to be socially confident.
* To enable children to be successful through a curriculum that captures their interests, stimulates their ideas, encourages inquisitiveness and critical thinking and meets their needs.

***At Trewirgie Infants’ & Nursery School, our aim is to equip children for their future lives in an ever changing technological world. We ensure children are equipped with the skills they need to thrive in the current climate which has technology at its heart. Computing is taught to foster a passion and enthusiasm for a range of technologies through cross-curricular and progressive skills.***

***The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content.***

***Computing supports pupils to become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.***

***Our school uses Purple Mash to support the learning of each strand of the Computing curriculum. Each child has a log in and password to use at school and at home meaning children can access their school work at home as a way of extending their Computing learning. Purple Mash also offers opportunities for children to complete cross curricular work, helping to embed their Computing skills at every opportunity.***

**Curriculum statement**

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| **INTENT**  (curriculum design, coverage and appropriateness) | **IMPLEMENTATION**  (curriculum delivery, teaching and assessment) | **IMPACT**  (attainment and progress) |
| At Trewirgie, we recognise that Computing and the use of technology plays a fundamental role in how we live our lives. We aim to promote the skills; our children need to thrive in our ever-changing world growing into competent, responsible future global citizens and creative users of technology. Our curriculum fosters strong cross-curricular links with maths, literacy, science and creativity. Every lesson builds on knowledge, skills and understanding from previous lessons and prior learning in earlier year groups. Lessons are taught in a logical progression, systematically and explicitly enough for all children to acquire the intended knowledge and skills. Lessons follow a logical sequence and moves learning forward. | Across the school, children are encouraged to use hardware and software, safely and with purpose. They use technology to handle data, record their work, further their learning and express themselves. The promotion of E-Safety is incredibly important for all children, staff and parents. | By the end of Key Stage 1, our children will have a range of experiences using different software and hardware. Children have developed their knowledge and skills in each subject over 3 years of teaching. |

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| EYFS Update 2021-21 |
| It is important to mention that although ‘Understanding the World- Technology’ is no longer part of the Early Years curriculum that Julian Grenier (Creator of the new Develop Matters framework) states that it is because technology is woven into a child’s everyday life and is understood as a way that children may record and develop their play and thinking, switching fluidly between first-hand and on-screen experiences.  As a school we have decided to continue to include the EYFS skills progression in this document, we do this recognising that the skills learnt will not be taught as standalone objectives but will be skills that will be developed through pupils interests as they record and develop their play and thinking. |

Computing: Year overview 2022-2023

Year 1

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| Information technology  Animated Story books 1:6 (How can we create and save an ebook?) | Digital Literacy  E-Safety 1:1  Digital Literacy  Technology Outside School 1:9 | Computer Science  Maze runners 1:5 (What is an algorithm?) | | Computer Science  Lego Builders 1:4  (Is this algorithm in the right order?) | Computer Science  Coding 1:7 (How can we create our own programmes?) |
| Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | | Summer 2 |

Year 2

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| Digital Literacy  E-Safety 2:2 | Computer Science  Coding 2:1 (What does an algorithm do? Does this algorithm work?) | Information Technology  Presenting ideas 2:8 (How can we present a story in different ways?) |
| Autumn | Spring | Summer |

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| **Digital Literacy**  ***National Curriculum aim:***  ***Recognise common uses of information technology beyond school.***  ***Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.*** | | |
| EYFS | YEAR 1 | YEAR 2 |
| * I can recognise some uses of technology in the world around me * I can use some technology independently | * I can name different ways technology is used at home and school * I can use a username and a password to log on with support * I know where to go for help if I have concerns   1.1 Online safety and Exploring Purple Mash  1.9 Technology Outside School | * I can use a username and a password to log on independently * I can keep personal information private * I know where to go for help and support if I have concerns about content I see on the internet or other online technology   2.2 Online Safety |
| **Q. Can I make this work?**  Intent: Children beginning to recognise that technology is in different places in the world around them.  Implementation: Children could look in their environment and find the technology in their classroom  Future learning: Children will independently be able to recognise uses of technology and be able to explain how they know it is technology.  **Q. What technology can you see?**  Intent: to use technology as a basis for discussion about how often it is used in everyday life  Implementation: Use of IWB, tablets, cameras etc  Future learning: Children will gain an understanding about what is meant by technology and will identify a variety of examples both in and out of school. | **Lesson 1: Q. What should I do if I am worried about something online?**  Builds on: Children have used technology supported previously and have been using a shared log in  Intent: Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons.  Implementation: Unit 1.1 Online Safety and Exploring PM Lesson 1  Future learning: children will begin to discuss and understand the importance of technology and the variety of uses for it in everyday life.  **Lesson 2: Q. Does this use technology?**  Builds on: children have begun to recognise technology in the world around them with support.  Intent: Children will understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.  Implementation: Unit 1:1 Lesson 2  Future learning: children will begin to discuss and understand the importance of technology and the variety of uses for it in everyday life.  **Lesson 3: Q. Why do teachers use technology?**  Builds on: Previously children have begun to recognise some technology in the world around them  Intent: Children to take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.  Implementation: Unit 1:9 Lesson 1/2  Future learning: Children will be exposed to and given opportunities to use more varied technology and become more familiar with Purple Mash | **Lesson 1:Q. What is online safety?**  Builds on: Children have previously explored what to do if they are worried about something online They need to revisit this to ensure it is embedded as they progress through the school.  Intent: Children Contrast using Purple Mash as a safe and secure searching and computer program w with searching the Internet where there is much more content and not all of it is for children.  Implementation: Unit 2.2 Online Safety – lesson 3  Future learning: Children will demonstrate the importance of having a secure password and not sharing this with anyone else. They will also be learning to explain the negative implications of failure to keep passwords safe and secure.  They know more than one way to report unacceptable content and contact.  **Lesson 2: Q. Can you send an email?**  Builds on: Children have not used email before but have gained an understanding of the need to be safe online.  Intent: Children to begin to gain knowledge and understanding about sharing more globally on the Internet. To introduce Email as a communication tool using 2Respond simulations.  To understand how we talk to others when they aren’t there in front of us.  To open and send simple online communications in the form of email.  Implementation: Unit 2.2 Online Safety – lesson 2  Future learning: They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2respond in Purple Mash. They know more than one way to report unacceptable content and contact.  **Lesson 3: Q. What should I put online?**  Builds on: Children have previously learnt about the importance of keeping information, such as their usernames and passwords, private.  Intent: Children can explain what a digital footprint is. Children can give examples of things that they wouldn’t want to be in their digital footprint.  Implementation: Unit 2.2 Online Safety – lesson 3  Future learning: Children can explore key concepts relating to online safety using concept mapping. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact. |
| **Computer Science**  ***National Curriculum aim:***  ***Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.***  ***Create and debug simple programs.***  ***Use logical reasoning to predict the behaviour of simple programs.*** | | |
| EYFS | YEAR 1 | YEAR 2 |
| * I can program a programmable toy * I can use simple programs | * I understand what an algorithm is * I understand that programs need precise instructions to work * I can independently create simple programs | * I understand that algorithms are implemented as programs on digital devices * I can debug simple programs * I can use logical reasoning to predict the behaviour of a simple program |
| **Q. What does this do?**  Intent: Children begin to explore and use a range of technology (e.g. BeeBots, cameras, computers)  Implementation :  Future learning: Giving children opportunities to experiment and build up resilience with new technology will support coding and algorithm work.  **Q. How does this work?**  Intent: Children to use a huge range of equipment in the classroom and outside settings to gain an understanding about how it works. What do I need to do to make something happen. This could be buttons, switches, pulling, pushing, moving swiping etc  Implementation:  Future learning: Children will them be exposed to more opportunities for making this work using computer programs.  **Q. Can you use this program?**  Intent: Chn will be given opportunities to explore programs such as 2PaintaPicture. And use the tools appropriately with exploration in mind.  Implementation:  Future learning: Children will be given purpose when using programs and support will be withdrawn to improve independence. | **Unit 1.5 Maze Explorers: Q. What is an algorithm?**  Builds on: EYFS – children have had a chance to explore and use a range of equipment to see what happens without being concerned about the consequences and it doing the correct thing.  Intent: Children will begin to gain an understanding that a set of programming needs to be in the right order for it to be successful. They need to have opportunities to see what happens if things go wrong. Introduce the term algorithms.  Implementation: Using 2Go/Beebots  1) Children can use diagonal direction keys to move the characters in the right direction.  2) Children know how to create a simple algorithm.  3) Children know how to debug their algorithm.  Ext: Pupils to experiment with changing the background on 2Go  Future learning: Unit 1.4 Lego Builders – instruction/Algorithm writing.  **Unit 1.4 Lego Builders: Q. Is this algorithm in the right order?**  Builds on: Skills learning in Unit 1.5 Maze runners on using the arrow keys effectively.  Intent: This unit encourages children to begin to think logically about scenarios which involve following instructions. They need to have opportunities to see what happens if things go wrong and the importance of the algorithms they make/create/write being precise.  Implementation:  1) Following a set of instructions (introduce the concept of being precise.  2) Creating a set of instructions on the computer (introducing the term algorithm)  3) Following a recipe and correcting errors (introducing the term debugging)  Future learning: Unit 1.7 Computing Becoming more familiar with the different algorithms that they come across in everyday life, start to develop their own and debug existing ones using 2Code.  **Unit 1.7 Coding: Q. How can we create own programmes?**  Builds on: Unit 1.4 Lego builders pupils understanding of coding/algorithms and instructional writing.  Intent: Children to produce a piece of work on the computers or complete an activity.  Implementation: 2Code   1. Children can create a simple program using code blocks. 2. Children can use event, object and action code blocks. 3. Children can notice when their code executes when their program is run. 4. Children to edit/design their background/scene.   Future learning: Children will begin to use logical reasoning to complete more complex programs | **Unit 2.1 Coding: Q: What does an algorithm do? Does this algorithm work?**  Builds on: Y1 – children have discussed and gained an understanding that algorithms are a set of instructions to achieve a goal.  Intent: Children to be exposed to a range of algorithm (PM – designing simple programs) and discover how to debug them.  Implementation:   1. Recapping what an algorithm is from Year 1 2. Children can plan an algorithm that includes collision detection. 3. Children can create a program that uses a timer-after command/ different objects types including a button object. 4. Children can explain what debug (debugging) means. Pupils to debug simple programs.   Future learning: KS2 – They will further this by designing, writing and debugging programs to accomplish a specific goal. |

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| **Information Technology**  ***National Curriculum aim:***  ***Use technology purposefully to create, organise, store, manipulate and retrieve digital content.*** | | |
| EYFS | YEAR 1 | YEAR 2 |
| * I can use technology to write words * I can use technology to take photos * I can use technology to create digital content | * I can use technology purposefully to create digital content independently * I can use technology purposefully to store or save digital content * I can use technology purposefully to manipulate digital content   1.6 Animated Story Books (5 lessons – adapt to link to Weather Reports) | * I can use technology purposefully to organise digital content * I can use technology purposefully to retrieve digital content |
| **Q. How do I take a photo?**  Intent: Children to be involved in the process of photographing work and adding to their tapestry journal.  Implementation: Using CT iPads to take photos with a grown up  Future learning: children will then continue this by taking photos and then editing, saving or manipulating them  **Q. What could I do with my photo?**  Intent: Children need to know that a photo is taken and then can be moved, printed, stored or edited.  Implementation: e.g. PM - ‘MashCam’  Future learning: Children will learn how to save and manipulate pictures.  **Q. How do you get words on the screen?**  Intent: Children to gain a knowledge that the words they can write with pencils can also be inputted into the computer.  Implementation:  Future learning: Children will develop skills to type and use computers for a variety of reasons in year 1 and 2 | **Unit 1.6 Animated Story Books: Q. How can we create and save an ebook?**  Builds on: Unit 1.4 Lego builder’s pupils understanding of coding/algorithms and instructional writing. Cross-Curricular links to Talk4Writing.  Intent: Children to use technology purposefully to create a digital storybook independently. Cross-Curricular links to Topic ‘Creating a weather report.’  Implementation: 2Create a story  1) Children should be taught how to draw/create/ add text on 2Create a story  2) Show pupils how to save their work.  3) Children to add animation to their story.  4) Children taught how to add sounds and recordings to their animation.  5) Children shown how to add a background to their story and given time to complete their books.  Future learning: Children will learn to save and edit previously created pieces of work on a computer. | **Unit 2.8 Presenting ideas: Q. How can we present a story in different ways?**  Builds on: Unit 1.6 creating an ebook.  Intent: Children know that digital content can be represented in many forms.  Implementation:   1. Children to be shown a traditional story in 3 different ways; ebook, quiz and mind map. Pupils should be given opportunities to discuss how you use each type of presentation. 2. Pupils to create their own quiz using 2quiz 3. Pupils to create their own fact file using 2Connect file   Future learning:  In KS2 they will continue to use a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information |

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| **YEAR GROUP VOCABULARY** |

browser

retrieve

navigate

password

print

open

software

command

questionnaire

research

hardware

sequence

address

code

repeat

repetition

camera

digital

data

username

algorithm

speaker

headphones

computer

type

record

play

instructions

keyboard

program

close

touch

click

camera

mouse