ROOTED IN GOD'S LOVE, EVERYONE GROWING TOGETHER
TO BECOME THE BEST THAT WE CAN BE

Computing Curriculum Overview

2024/25

Subject Leader: Miss Walker

BARROW U.R.C. PRIMARY SCHOOL

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Intent, Implementation and Impact

Our Vision

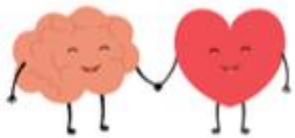
Rooted in God's love, we will grow and learn together through the delivery of an enriched and creative curriculum. We are passionately committed to developing happy, well-rounded children who can reach their full potential with the skills, knowledge, and experiences to achieve their dreams. Our Curriculum drivers help to drive and shape our curriculum and are incorporated across all subjects and themes. Our Drivers are:

Achievements & Aspirations

Active Citizens

Diversity

Healthy Advocates



Resilience

Intent

At Barrow URC Primary School, our aim is for pupils to understand the principals of information technology and computation, how digital systems work and how to put this knowledge to use through programming. Pupils should become digitally literate and competent in computational thinking, enabling them to be active participants in a digital world. Our computing curriculum is rooted in respect for others and the safe, responsible use of digital media and information.

Implementation

We will use the following approaches in our teaching of Computing:

- We teach six computing units per academic year which incorporate one online safety lesson within each unit.
- We teach specific key vocabulary for pupils to use, modelled by the class teacher;
- Lessons which are closely linked to the Computing Skills & Knowledge Progression, ensuring progression and depth of knowledge and skills;
- Cross-curricular learning and activities to support subject knowledge in different situations with particularly deep links with mathematics, science and design technology.
- Questioning and to support learner's knowledge; and to encourage pupils to apply their learning in an open manner that creates discussion and debate within class;
- Trips and opportunities such as experts who enhance the learning experience for the pupils.
- In ensuring high standards of teaching and learning in computing, we implement a bespoke curriculum that allows progression of knowledge and skills both within and across year groups.
- We fulfil the requirements of the National Curriculum for Computing; providing a broad, balanced and differentiated curriculum that equips pupils to use computational thinking and creativity to understand and change the world.

Impact

We will assess the impact of the curriculum by:

- Reflection on standards achieved against the lesson objective and key skill.
- Pupil discussions about their learning,
- Sticky knowledge will be assessed by revisiting units taught during Pupil Voice sessions as well as through links in learning across units.
- Pupil will have an increased subject specific vocabulary through technical and subject specific vocabulary being used across all units.
- Learning will be assessed through the implementation of a subject specific consolidation task usually through the creation of a final piece that encompasses the skills learnt in that unit.
- Children will be inspired to follow future careers related to this, e.g. We are Robotic Engineers, We are YouTubers, We are Graphic Designers etc.

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Whole School Programme of Study:

Computing

Computing – Whole School Programme of Study (2023/24)

Computing – Whole School Programme of Study (2023/24)

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2	Online Safety
Year 1	Computing Systems and Network: Improving Mouse Skills	Programming: Algorithms unplugged	Skills Showcase: Rocket to the moon	Programming: Bee-Bots	Creating Media: Digital Imagery	Data Handling: Introduction to data	Online Safety sessions will take place for one session each term
Year 2	Computing Systems and Network: What is a computer?	Computing Systems and Network: Word Processing	Programming: Algorithms and debugging	Programming: Scratch Jr.	Creating Media: Stop Motion	Data Handling: International Space Station	Online Safety sessions will take place for one session each term
Year 3	Computing Systems and Network: Networks	Programming: Programming Scratch	Computing Systems and Network: Emailing	Programming: Journey inside a computer	Creating Media: Video trailers	Data Handling: Comparison cards	Online Safety sessions will take place for one session each term
Year 4	Computing Systems and Network: Collaborative Learning	Programming: Further coding with Scratch	Creating Media: Website Design	Skills Showcase:: HTML	Programming: Computational Thinking	Data Handling: Investigating weather	Online Safety sessions will take place for one session each term
Year 5	Computing Systems and Network: Search engines	Programming: Programming Music	Data Handling:: Mars Rover 1	Programming: Microbit	Creating Media: Stop Motion Animation	Skills Showcase: Mars Rover 2	Online Safety sessions will take place for one session each term
Year 6	Computing Systems and Network: Bletchley Park and the History of Computers	Computing Systems and Network:	Data Handling:: Big Data 1	Programming: Intro into Python	Data Handling: Big Data 2	Skills Showcase: Inventing a product	Online Safety sessions will take place for one session each term

Computing in EYFS

In the Early Years Foundation Stage (EYFS) at Barrow URC Primary School, computing education is designed to introduce young children to technology in a meaningful and developmentally appropriate way. The EYFS framework comprises seven key areas of learning, each with specific Early Learning Goals (ELGs). Computing education is seamlessly integrated into these areas to promote exploration, creativity, and digital literacy. Here's an explanation of how computing is taught at Barrow URC Primary School within the context of the EYFS framework and its ELGs:.

In EYFS, computing is taught through the following areas of learning; personal, social and emotional development, physical development, understanding the world and expressive arts and design. Through continuous provision and play, children will become more confident in trying new activities, showing independence, resilience and perseverance in the face of challenges as well as explaining reasons for different rules. They will be encouraged to express themselves creatively by using and exploring a variety of different materials, tools and techniques as well as experimenting with colour, design, texture and function to express their ideas and feelings. In EYFS, children will develop their fine motor skills allowing them to use a range of tools competently and confidently when they leave EYFS, including keyboards, tablets, cameras etc. In EYFS, children will be exposed to technology in both teaching and continuous provision but will also be taught about sensible amounts of screen time, supporting their health and wellbeing. By encouraging children to persevere and show resilience in the face of challenge, we are providing children with essential skills that will support them in their computing journey.

Computing and SEND Provision

The Computing curriculum is planned and delivered to accommodate and challenge pupils of all abilities and address a range of learning needs. Teachers of Computing will consider any additional needs of SEND pupils and will implement any relevant targets and support strategies as outlined on pupils' Individual Education Plans. Where necessary, we will provide specialist equipment, adapt room layouts, utilise adult support and allow additional time for tasks, according to the needs of our pupils.

Computing and identifying the More Able

In computing, we use this criteria to identify the characteristic of the More Able Learner;

- Be fascinated by, or passionate about computing, enjoys learning new knowledge and wants to be a successful learner while learning and applying ICT techniques quickly
- Achieves , or shows potential in a wide range of contexts across computing and demonstrates computing capability significantly above that expected for their age
- Works flexibly, processes unfamiliar information and applies their knowledge of computing, experiences and insight to unfamiliar situations,
- Communicates their thoughts and ideas well in computing,
- Transfers new skills and techniques confidently to new contexts
- Initiates ideas and solves problems using computing effectively and creatively
- Explore independently beyond their given breadth of a computing topic

Computing and provision for the More Able

At Barrow, we ensure that those children who are more able either in the subject as a whole or in individual areas of computing are provided with provision that stretches and challenges them to a deeper level. Some ways that we do this are:

Curiousity: Opportunities to explore more advanced features of software, programmes, apps and webpages to find out what they do and find alternative ways of solving problems and tasks

Interest: Opportunities to find answers to their own questions to explore issues further, validating information found from a website using a range of strategies

Problem Solving: Providing them with complex problems to explore both independently and collaboratively

Understand How to Apply Skills in Other Contexts: Opportunities to transfer and apply computing skills and techniques in new contexts and providing challenges which encourage and allow them to solve real life problems and tasks independently by making connections with concepts and recognising which strategies they have already used that will help them.

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Knowledge Organiser Examples

Computing

1.2 – Programming: Algorithms Unplugged

Prior learning

EYFS:-. Computing links in to all strands of the EYFS curriculum in different ways. See Computing Overview

Tier 2 Vocabulary

Organise , tasks, order, instructions, computer

Tier 3 Vocabulary

AI, code, bug, debug, algortithm

Enrichment

- Explore computers in provision

Job Role & Consolidation task

We are... Programmers

1. Debugging algorithms (Lesson 5)
2. Knowledge Catcher

Current learning (Skills based Objectives)

1. To understand what an algorithm is
2. To follow instructions precisely to carry out an action
3. To understand that computers and devices around us use inputs and outputs
4. To understand and be able to explain what decomposition is
5. To know how to debug an algorithm
6. Online Safety Lesson 2

National Curriculum

Pupils should be taught to:

- 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
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- 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.

Future learning

Computing systems and networks:
2.1 – What is a computer?
3.1 – Journey inside a computer
4.1 – Collaborative Learning
5.1 – Search Engines
6.1 – Bletchley Park

Key Skills

- Recognising that some devices are input devices and others are output devices.
- Learning that decomposition means breaking a problem down into smaller parts.
- Using decomposition to solve unplugged challenges.
- Developing the skills associated with sequencing in unplugged activities.
- Following a basic set of instructions.
- Assembling instructions into a simple algorithm.
- Learning to debug instructions when things go wrong.
- Learning to debug an algorithm in an unplugged scenario.

Sticky Knowledge / Unit Outcomes

- Explain what an algorithm is.
- Write clear algorithms.
- Follow an algorithm.
- Explain what inputs and outputs are.
- Create an achievable program.
- Decompose a design into steps.
- Identify bugs in an algorithm and how to fix them.