

Angram Bank's Big Bus Curriculum

Computing



Computing

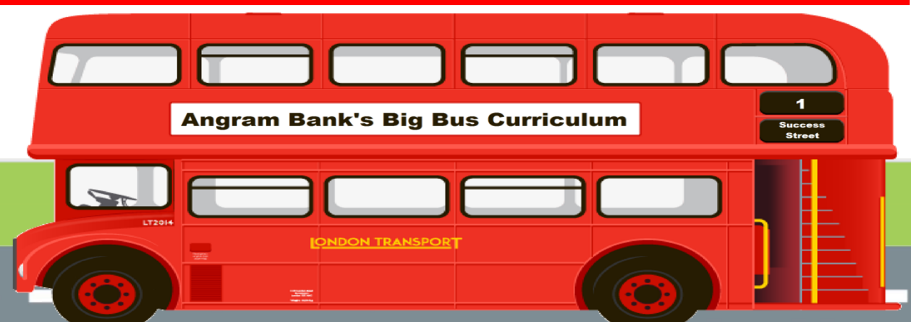
Our **intention** is to delivery a high quality computing curriculum covering all aspects of the National Curriculum that matches the needs of our children. We aim to teach children **computer science**, **information technology** and ensure children become **digitally literate** whilst providing key skills for later life. We aim to inspire children to become active and responsible participants in our increasingly digital world. We **implement** our high quality curriculum throughout school starting with the very youngest children. We use and adapt the 'Sheffield Primary Computing Scheme of Work' as a vehicle to deliver computing lessons ensuring that all sessions meet the needs of our children. We progressively and sequentially builds knowledge and understanding through discrete and cross-curricular lessons throughout school to create safe, responsible and effective users of technology. The **impact** of our curriculum is that pupils are confident and responsible users of technology. Angram Bank children enjoy applying their skills to a range of contexts showing problem solving skills and creativity. Through a high quality computing education, pupils are equipped with the knowledge, skills and concepts to understand and change the world

Design and Planning Non-Negotiables

- Sheffield Scheme of Work for Primary Computing which covers all National Curriculum statements.
- Progression framework includes skills, knowledge and concepts children should know by the end of each year group.
- Key **concepts** and vocabulary are identified and taught throughout the teaching sequence
- Key skill non-negotiables are identified for each year group
- All units have an identified end point
- Units can be taught in any order (to with it with other subjects) but unit 4 must be taught before unit 5 and not consecutively.

At the session planning stage:

- The first lesson in each unit starts with revisiting previous learning
- Teachers identify the relevant key concepts and vocabulary for each session
- **SMSC links shown in red planning and assessment books**
- Our sequences are broken down into smaller learning steps when necessary,
- We reference the progression document to identify and fill any gaps in learning.



Year	Digital Literacy, Online Safety and ICT				Computational Thinking	
	Strand 0 Key Skills	Strand 1 Communicating: Text and Images	Strand 2 Communicating: Multimedia	Strand 3 Understanding & Sharing Data	Strand 4 Programming A	Strand 5 Programming B
1	What is a Computer?; Mouse & Keyboard Skills; Logging on; Opening & saving work; Organising files; Searching for information	1.1 How do I use the school computer independently?	2.1 How do I record sounds and pictures?	3.1 How do I present data using pictures?	4.1 What is an algorithm?	5.1 What is a program?
2		1.2 How do I use a computer as a writer?	2.2 How do I create a multimedia story?	3.2 What is a branching database?	4.2 How do I improve my algorithms?	5.2 How do I improve my programs?
3		1.3 What makes a good poster?	2.3 How do I use a computer as a musician?	3.3 How do we use databases to find out information?	4.3 How do I use repetition in programs?	5.3 How do I use forever loops in programs?
4		1.4 How do I use a computer as an artist?	2.4 What makes an excellent multimedia story?	3.4 How is data shared online?	4.4 How do I write efficient programs?	5.4 How do I use selection in a program?
5		1.5 How do we collaborate online?	2.5 How do I create a radio advert?	3.5 How do I find and share data safely and responsibly?	4.5 How do I program physical systems?	5.5 How do I use variables in programs?
6		1.6 How do I use a computer as a designer?	2.6 What makes an excellent film?	3.6 Why do we use spreadsheets?	4.6 How do I build complex physical systems?	5.6 How do I design complex programs?

Angram Bank's Non-negotiable Key skills

Foundation Stage

We incorporate technology into provision to provide a solid foundation for Key Stage 1. We use the toolkit which maps technology to the Early Learning goals to prepare children for their lives in an increasingly digital world.

Year One

With support, log on to a device, start using a keyboard and mouse, open a file, save a file, create a new document.

Year Two

Following an algorithm, log on to a device, begin to use a mouse and keyboard independently, open a file, save work, find a website using a web browser.

Year Three

Independently, log on to a device, use a keyboard confidently, save a file choosing a suitable file name, use a search engine.

Year Four

Publish work including relevant edits, type with all 10 digits, copy and paste text and images, create new folders, move files, become confident with saving a file independently, use a search engine, understand left click, right click and double click.

Year Five

Use search engines precisely and compare results, begin to touch type, save media choosing a suitable file name, organise files and documents.

Year Six

Understand operating systems, touch type, use tools and filters to search, save and organise files showing an understanding of common file types and extensions (JPEG, MP3 etc)

Angram Bank's Computational Concepts

Every child will become confident with the key concepts in Computing and related vocabulary. Each unit will focus primarily on one concept and its related vocabulary but these will be referred to within other units to connect learning. The concepts are repeated in every year group with an increase in depth and vocabulary expectations..

Key Concept	Related Vocabulary (KS1)	Related Vocabulary (KS2) (in addition to KS1 vocabulary)
What is a computer? What is technology?	input devices output devices software hardware	storage networks world wide web search technology
Why do we use computers to create?	multimedia create edit digital content	design evaluate share copyright
How do computers store information and data?	charts database	search technology data handling spreadsheets interpreting data
How do we control computers?	program algorithm sequence debug	evaluate input output repetition variables selection
How do we use technology safely?	kindness online privacy passwords content ownership	copyright misinformation disinformation fake news ethics law

Computing—The National Curriculum

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. 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 also ensures that pupils 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.

Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology.

KS1

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.

KS2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.