Knowledge Progression Document for KS1 Computing -

Procedural Knowledge (knowing how):
 1. Basic Computer Skills:
  - Navigating the computer desktop and launching applications.
  - Using a mouse or touchpad for clicking and dragging.
  - Opening and closing files or programs.

2. Online Safety:
  - Recognising and following safe online practices, such as not sharing personal information.
  - Understanding basic online etiquette, like being respectful and not cyberbullying.
  - Identifying trusted adults who can help with online concerns.

3. Digital Tools and Creativity:
  - Using basic digital tools for drawing, painting, and simple graphic editing.
  - Creating digital stories, drawings, or simple animations.
  - Understanding the concept of creativity and expression through digital media.

Declarative Knowledge (knowing that):

1. Parts of a Computer:
  - Identifying and naming basic computer components, such as the monitor, keyboard, and mouse.
  - Recognising the power button and basic on-screen icons.

2. Introduction to Coding Concepts:
  - Awareness of the idea that computers follow instructions (code).
  - Understanding simple programming concepts like sequences and patterns.
  - Recognising the concept of cause and effect in coding.

3. Types of Digital Devices:
  - Differentiating between types of digital devices, like computers, tablets, and smartphones.
  - Recognising the purposes of various digital devices in daily life.

4. Online Resources:
  - Introduction to educational websites and digital resources.
  - Familiarity with basic online navigation, like clicking links and buttons.
  - Awareness of the existence of search engines and their purpose.

5. Internet Safety:
  - Recognising the importance of asking for permission before using the internet.
  - Awareness of not clicking on unfamiliar links or sharing personal details online.
  - Knowledge of the need to report any uncomfortable online experiences to a trusted adult.

This knowledge progression document outlines the key procedural and declarative knowledge areas for Computing in KS1. It provides a foundation for students to develop their computing skills and digital literacy as they progress through the primary curriculum.

What skills and knowledge do our EYFS children take into the y1 curriculum?

In EYFS, children develop foundational skills and knowledge that lay the groundwork for their computing learning in Year 1. Directional language is taught – forward, back, left and right to support future developments in coding. Children develop foundational skills (processing, off and on, input and output) in their hands on use of a range of technological devices including ipad, keyboards and touch screens. Children are taught the concepts of safety, privacy and sharing – which move through the primary curriculum as key concepts of online safety.

Implementation

We use a comprehensive range of tools including: MicroBits, Beebots, Chromebooks and iPads. These are regularly updated to ensure children have access to up-to-date technology. Computing is taught in units, enabling children to develop and build upon their knowledge and understanding of each area of computing. Our scheme is derived from the NCCE (National Centre for Computing Education) 'Teach computing' resource. Each strand of computing (coding, digital literacy, online safety, digital creativity) is covered and revisited so that pupils retain and build upon prior learning. children access key concepts and skills to develop their knowledge, skills and understanding as digital citizens.

Learning to be a computer scientist at East Tilbury Primary

Intent

At East Tilbury Primary School, we are committed to delivering a creative and exciting computing curriculum that ignites a passion for learning about the digital world. Our intent is for all pupils to be inspired, knowledgeable and aspirational. In computing this means children learn through a well-designed sequential curriculum. The different aspects of computing, such as coding, digital literacy and online safety, are taught to support children to acquire the knowledge and skills they will need to be successful and digitally literate in an ever-changing digital word.

Knowledge Progression Document: Computing (KS2) Procedural Knowledge (knowing how):

1. Coding and Programming:
   - Writing and debugging code using block-based and text-based programming languages.
   - Creating algorithms to solve problems and complete tasks.
   - Understanding key programming concepts, such as variables, loops, conditionals, and functions.
2. Computer Systems and Hardware:
   - Identifying and explaining the components of a computer system, including CPU, RAM, storage devices, and peripherals.
   - Demonstrating the ability to troubleshoot common hardware issues.
   - Understanding how data is processed within a computer system.
3. Data Handling and Databases:
   - Creating, maintaining, and querying databases.
   - Sorting, filtering, and analysing data using spreadsheet software.
   - Understanding data protection and privacy laws, including GDPR.
4. Networks and Internet:
   - Explaining the concept of computer networks and their importance.
   - Understanding how the internet works, including the role of servers, browsers, and web addresses.
   - Demonstrating safe and responsible internet usage.
5. Online Safety and Cybersecurity:
   - Recognising online risks and threats, such as phishing, malware, and cyberbullying.
   - Implementing security measures, including password management and antivirus

Declarative Knowledge (knowing that):

1. Programming Languages:
   - Familiarity with block-based programming languages like Scratch and text-based languages like Python.
   - Understanding the syntax and structure of coding languages.
   - Knowledge of how coding languages are used to create software and applications.
2. Computer History and Evolution:
   - Knowledge of the history and development of computers and technology.
   - Recognizing key milestones and innovations in computing.
   - Understanding the impact of technology on society.
3. Data and Information:
   - Understanding the difference between data and information.
   - Knowledge of data types, data representation, and data conversion.
   - Awareness of data ethics and responsible data usage.
4. Software and Applications:
   - Familiarity with various software applications, including word processing, spreadsheets, and presentation software.
   - Knowledge of software installation and updates.
   - Understanding the purpose and use of different software tools.
5. Emerging Technologies:
   - Awareness of emerging technologies such as artificial intelligence (AI), virtual reality (VR), and the Internet of Things (IoT).
   - Understanding potential applications and implications of these technologies

This knowledge progression document outlines the key procedural and declarative knowledge areas for Computing in KS2. It provides a clear pathway for pupils to develop their digital understanding, skills, and vocabulary as they progress through the primary curriculum.

Vocabulary Progression Document: Computing

Foundation Stage (EYFS):

1. Basic Technology Terms:
   - Computer, screen, keyboard, mouse, button, click, touch, on/off, screen time

2. Simple Programming Vocabulary:
   - Sequence, instructions, algorithm, code, command, pattern, repeat, problem-solving

3. Online Safety Terms:
   - Safe, share, private, personal information, permission, consent, stranger, chat

Key Stage 1 (KS1):

1. Technology Devices and Components:
   - Monitor, desktop, laptop, tablet, hardware, software, browser, operating system

2. Introduction to Coding Concepts:
   - Debugging, sequence, loops, events, sprites, block-based coding

3. Online Safety Vocabulary:
   - Cyberbullying, password, login, online etiquette, privacy settings, digital footprint

Key Stage 2 (KS2):

1. Coding and Programming Terms:
   - Algorithm, variables, debugging, functions, loops, variables, binary, hexadecimal

2. Digital Literacy Vocabulary:
   - Internet, search engine, website, hyperlink, download, upload, multimedia, cloud storage

3. Data and Information Terminology:
   - Data, information, input, output, spreadsheet, database, data protection, encryption

4. Online Safety and Digital Citizenship:
   - Phishing, malware, online identity, social media, copyright, responsible use, online communities

This vocabulary progression document outlines the key computing-related terms and concepts for primary schools following the national curriculum. It provides a guideline for developing students' vocabulary and understanding of computing terms as they progress through their primary education.

Resources to use:

NCCE scheme (teachcomputing.org)
Current planning resources
Outdoor Classroom and computing suite resources