Cambridgeshire Progression in Computing Capability

Understanding technology:

Purpose of study ~ Computing programmes of study: Key stages 1 and 2

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.

Theme Overview: Understanding Technology

Children's natural curiosity has always driven them to develop an understanding of the world around them and this is no different when it comes to understanding technology; both how it works and what it can do for us. From their first, early experiences with technology, pupils begin to make sense of how it works and the opportunities it can provide. Throughout their time in primary education, pupils now need to extend that understanding to include computer networks such as the Internet, and the services they can provide such as the World Wide Web. Teachers need to provide practical, fun experiences that allow pupils to make links with their existing understanding of the world around them. In doing so, pupils will ultimately become much more effective creators and users of digital content.

the ict service
education
info@theictservice.org.uk

Draft - August 2020
www.theictservice.org.uk/primary-computing

Cambridgeshire Progression in Computing Capability

	Early Capability		Middle Capability		Later Capability	
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	▪ Recognise common uses of information technology beyond school		▪ 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			
Cambridgeshire Capability Statements	Pupils recognise and can give examples of common uses of **information technology** they encounter in their daily routine.	Pupils recognise common uses of **information technology** beyond school, including those which they don't frequently encounter in their daily routine. Pupils understand that computers are not intelligent but can appear to be when following **algorithms**. They can share examples of this.	Pupils understand that **computers** (in various forms) generally accept **inputs** and produce **outputs** and can give examples of this. Pupils recognise - and can describe - some of the services offered by the **Internet**, especially those used for communication and collaboration.	Pupils develop a basic understanding of how computers can be linked to form a **local network** such as those found in schools. Pupils recognise that there is a difference between the **Internet** and the **World Wide Web.** They can recognise and describe some of the services offered by the **Internet**, especially those used for communication and collaboration.	Pupils know that there is a difference between the **Internet** and the **World Wide Web** and understand that the web is just one of the services offered by the Internet (as well as, e.g. **email** and **VoIP services** such as Skype). They appreciate how **search results** are ranked, including an understanding of the use of different **algorithms** to prioritise results. Pupils understand that the highest-ranking search results may not always be the most relevant. They appraise search results based on their **relevance** and **trustworthiness**, and can explain what is meant by 'fake news'	Pupils understand and can explain how **computer networks** work, including the **Internet.** They begin to understand how **data** travels across **networks** in **packets** and how these can be broken up and reconstructed. When accessing information online, pupils recognise that **opinions** may be presented as **facts.** They can describe why an opinion may easily become popular online but they understand that this doesn't necessarily make it true. They understand that some online content may be commercially sponsored such as **adverts in search results** or content presented by **social media influencers**.

More specific guidance for individual year group teachers can be found in the phase overviews at www.theictservice.org.uk/primary-computing

the ict service.
education
info@theictservice.org.uk

Draft - August 2020
www.theictservice.org.uk/primary-computing