

Computer Systems and Networks Whole-School Progression Map



Welcome to Digital Sparks! Our whole-school computing scheme is designed to cultivate curiosity and foster responsible online citizenship in an ever-evolving digital landscape. Our mission is to nurture digital creators, engage critical thinkers and logical computer scientists, move away from passive technology consumption towards active, informed and ethical use of technology. Through a focused approach on building digital skills, we aim to prepare children for the future workforce, ignite their passion for computing and foster lifelong learners adaptable to rapid advancements in technology.

Digital Sparks employs a spiral curriculum where key concepts are progressively built upon and revisited to deepen understanding and application across a variety of contexts. This systematic approach enhances retention and reduces forgetting, supporting children in making meaningful connections in their learning.

This whole-school progression map for the Computer Systems and Networks strand of Digital Sparks outlines a comprehensive framework across six units of work, each designed to provide children with the knowledge and skills required to understand the world of computer systems and networks. Key skills and concepts are intentionally revisited across the six units, ensuring that children's knowledge is progressively built upon and refined. This progression map is structured to represent the key outcomes for KS1, LKS2 and UKS2 and clearly delineates the sequence of learning, indicating where prerequisite knowledge must be secured before moving on to more complex concepts.

This **Computer Systems and Networks Whole-School Progression Map** has been written to support educators who have chosen to adopt Digital Sparks in part or in full.

Disclaimer: Please note that this progression map is created by Twinkl and is based on our interpretation of the 2014 [national curriculum](#) objectives as well as recent DfE and Ofsted guidance documentation (including the [Research review series: computing - GOV.UK](#)). This progression guidance is intended to serve as a guide for educators, who should use their professional judgement and consider the abilities of their own students when planning and delivering computing lessons to ensure they are delivering a skill-building, progressive computing curriculum.

Technology and Its Uses Whole-School Progression Map						
	Computer Systems and Networks 1	Computer Systems and Networks 2	Computer Systems and Networks 3	Computer Systems and Networks 4	Computer Systems and Networks 5	Computer Systems and Networks 6
Technology and How It Helps Us	I know the difference between technology and information technology. I know some examples of information technology in the home, at school and in the wider world. I know how information technology is used in different places. I know some examples of how information technology is used by people in different jobs. I know some ways that information technology can help us.	I know the key parts of a desktop computer and a laptop. I know some common icons used on digital devices.		I can identify some different digital devices.		

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Collaboration	I know that digital devices can perform more than one task. I know that information technology can be connected to share information.	I know that digital devices use information technology to help them work.		I know some ways that digital devices have changed the way we work. I can identify the key skills for communicating and collaborating. I know the effective ways of communicating and collaborating with more than one person.	I can identify antivirus software. I can identify devices that help reduce the risk of hacking.	

Technology and Its Uses Whole-School Progression Map						
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Technological Change	I know some ways that information technology has changed. I know the names of some people who have helped to change information technology. I can order some developments in information technology on a timeline. I know about some developments in information technology. I know some examples of how information technology might change. I know some ways information technology might help us in the future. I can create a new digital device of the future.			I can give examples of changes in communication technology. I know how communication technology has become more effective.		

Digital Literacy and Online Safety Whole-School Progression Map

	Computer Systems and Networks 1	Computer Systems and Networks 2	Computer Systems and Networks 3	Computer Systems and Networks 4	Computer Systems and Networks 5	Computer Systems and Networks 6
Search Technology		I know what a search engine is. I can use a child-friendly search engine to find images on the Internet. I can use keywords to narrow down search results.	I can use a search engine to find information. I can explain how the Internet works.			I can explain what a web crawler (or spider) is and how it visits pages on the World Wide Web. I can describe how search engines store information from the Internet by creating an index. I can explain how search engines make it easier for us to find the information we want. I know some of the criteria that page ranking programs use to decide page ranking. I know how algorithms are used to rank search results. I know what Search Engine Optimisation (SEO) is. I know why web pages use SEO. I know how SEO can help web pages improve their ranking on a search engine results page.

Digital Literacy and Online Safety Whole-School Progression Map

	Computer Systems and Networks 1	Computer Systems and Networks 2	Computer Systems and Networks 3	Computer Systems and Networks 4	Computer Systems and Networks 5	Computer Systems and Networks 6
Using Search Technology		I know some things that might go wrong while using the Internet. I know some ways to use the Internet safely. I know who can help me if I'm upset or worried by something I see on the Internet.	I know how to search for information safely. I can identify how to trust a website is safe.		I know what malware is. I can list at least three types of malware.	I know how to check if an online source is reliable. I can identify reliable online information by checking multiple sources. I can identify signs of bias by looking for language that reflects opinions rather than facts. I can analyse online sources to determine which are reliable and which are biased.

Digital Literacy and Online Safety Whole-School Progression Map

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The Internet and Its Uses		I know what the Internet is. I know some ways we can use the Internet. I know some icons that help us access the Internet on digital devices. I can locate the address bar in a familiar web browser. I can use a keyboard to type a web address into an address bar.	I know what the Internet is. I know what the Internet can be used for. I know what the World Wide Web is. I know how content can be viewed on the World Wide Web. I know and understand how content can be created and posted online.	I can recognise and identify the different collaborative elements of online communication software. I can safely and effectively use online communication software to collaborate.		I know what critical thinking is. I understand why critical thinking is important. I know why I need to think critically when viewing online content. I can use critical thinking to form my own opinion about online content.

Networking and Connectivity Whole-School Progression Map

	Computer Systems and Networks 1	Computer Systems and Networks 2	Computer Systems and Networks 3	Computer Systems and Networks 4	Computer Systems and Networks 5	Computer Systems and Networks 6
Connectivity			I can describe how devices are connected to each other. I can explain what devices can do once they are connected to each other. I can describe how the devices in my school are connected to each other.	I can explain how networks help us to communicate and collaborate with each other.	I can explain how the networks help us. I can explain the advantages and disadvantages of different network topologies.	
Networks			I can describe what a computer network is. I can name some of the devices that can form a computer network. I can describe my school network and the devices that form it.	I know what a network is.	I can list examples of networks. I can explain why a network is needed. I know what topology means. I can draw and identify different network topologies. I know the definition of a MAC address. I know the definition of an IP address. I can give an example of an IP address.	