# Year 3 - Computing - Computer Networks

## Curriculum Objectives

- Understand computer networks including the internet;
- Understand how computer networks can provide multiple services, such as the world wide web;
- Understand the opportunities computer networks offer for communication and collaboration

## Vocabulary

| | | | |
|---|---|---|---|
| technology | Solves a practical problem that | inputs | Information that is put into a computer. |
| network | A system of computers that are connected to one or another computer. | outputs | The information stored in a computer which is transmitted to a printer or a screen. |
| World Wide Web | WWW is made up of documents called pages | processes | A series of actions used to produce something or reach a goal. |
| device | A machine that is made for a particular purpose. | | |

## Links Across the Curriculum

Science—technology, the future, inventing things.

## Lessons Sequence / Key Knowledge / Disciplinary Knowledge / Skills

| Lessons Sequence | Key Knowledge | Disciplinary Knowledge / Skills |
|---|---|---|
| 1. How does a digital device work? | Children to be able to name a range of digital devices and sort these into their own criteria. Children can explain that digital devices accept inputs. Children explain that digital devices produce outputs. Children can follow a process. Children to sort a range of devices based on whether they are an input, output or a process. | Identify the required input device for the desired output response. |
| 2. What parts make up a digital device? | Children can classify input and output devices. Children can match inputs with the corresponding outputs and processes. Children can describe a simple process between input and output devices. Children can design a digital device using their knowledge of digital devices and inputs and outputs. | Classify input and output devices. |
| 3. How do digital devices help us? | Children can explain how they use digital devices for different activities. Children can recognise similarities between using digital devices and using non-digital tools. Children can suggest differences between using digital devices and using non-digital tools. | Explain how digital devices are used for different purposes. |
| 4. How am I connected? | Children can recognise the different connections they make online. Children can explain how messages are passed through multiple connections. Children can discuss why we need a network switch. | Recognise the different connections that can be made with others online. |
| 5. How are computers connected? | Children can recognise that a computer network is made up of a number of devices. Children can demonstrate how information can be passed between devices. Children can explain the role of a switch, server and wireless access point in a network. | Identify different parts of a computer network including: switch, server and wireless access point. |
| 6. What does our school network look like? | Children can identify how devices in a network are connected together. Children can identify networked devices around them. Children can identify the benefits of computer networks. | Identify how devices in a network are connected together. |

## Themes

| Computer Science | The study of computers and computer systems. |
|---|---|
| Future technology | Understand that technological developments are happening daily and this is changing our world at a dramatic rate. |
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## Diversity in the Curriculum

Famous Computer Networkers—Some of these are covered in the Significant Individuals units.

- Bill Gates
- Mark Zuckerberg
- Elon Musk
- Sam Palmisano

Social Media Networks—Facebook. Instagram, Snapchat, Twitter.

| Outcome | Character Traits | Stickability | WOW |
|---|---|---|---|
| Classify inputs, outputs and processes. Draw the school's Computer network. | Curiosity Respectful | Digital Leaders Google Form Assessment | Take the children on a tour around the school to view all of the parts of the network—router, server, switch. |

Rushey Mead Primary School

# Year 4 - Computing - Computer Networks

## Curriculum Objectives

- Understand computer networks including the internet;
- Understand how computer networks can provide multiple services, such as the world wide web;
- Understand the opportunities computer networks offer for communication and collaboration

## Vocabulary

| | | | |
|---|---|---|---|
| technology | Solves a practical problem that | inputs | Information that is put into a computer. |
| network | A system of computers that are connected to one or another computer. | outputs | The information stored in a computer which is transmitted to a printer or a screen. |
| World Wide Web | WWW is made up of documents called pages | processes | A series of actions used to produce something or reach a goal. |
| device | A machine that is made for a particular purpose. | website | A local on the world wide web. |

## Links Across the Curriculum

Science—technology, the future, inventing things.

## Lessons Sequence / Key Knowledge / Disciplinary Knowledge / Skills

| Lessons Sequence | Key Knowledge | Disciplinary Knowledge / Skills |
|---|---|---|
| 1. How does a network share messages with other networks? | Children can describe the internet as a network of networks. Children can demonstrate how information is shared across the internet. Children can discuss why a network needs protecting. | Explain how information is shared across the internet. |
| 2. What is the internet made of? | Children can describe networked devices and how they connect. Children can explain that the internet is used to provide many services. Children can recognise that the World Wide Web contains websites and web pages. | Describe how networked devices connect with one another. |
| 3. What can be shared on the World Wide Web? | Children can describe where websites are stored when uploaded to the WWW. Children can describe how to access websites on the WWW. Children can explain the types of media that can be shared on the WWW. | Explain what types of media can be shared across the internet. |
| 4. What is a website? | Children can explain what media can be found on websites. Children can recognise that I can add content to the WWW. Children can explain that internet services can be used to create content online. | Recognise that a range of internet services can be used to create online content. |
| 5. Who owns the web? | Children can explain that websites and their content are created by people. Children can suggest who owns the content on websites. Children can explain that there are rules to protect content. | Explain that there are rules to follow when online which allows content to be protected. |
| 6. Can I believe what I read? | Children can explain that not everything on the World Wide Web is true. Children can explain why they need to think carefully before sharing or resharing content. | Explain how not everything that is published on the World Wide Web is true or accurate and possible reasons for this. |

## Themes

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Social Media Networks—Facebook. Instagram, Snapchat, Twitter.

## Outcome / Character Traits / Stickability / WOW

| Outcome | Character Traits | Stickability | WOW |
|---|---|---|---|
| Identify the devices on the school network and draw a diagram. Draw a diagram of the internet and the World Wide web. | Curiosity Respectful | Digital Leaders Google Form Assessment | Take the children on a tour around the school to view all of the parts of the network—router, server, switch. |

# Year 5 - Computing - Computer Networks

## Curriculum Objectives

- Understand computer networks including the internet;
- Understand how computer networks can provide multiple services, such as the world wide web;
- Understand the opportunities computer networks offer for communication and collaboration

## Vocabulary

| technology | Solves a practical problem that | inputs | Information that is put into a computer. |
|---|---|---|---|
| network | A system of computers that are connected to one or another computer. | outputs | The information stored in a computer which is transmitted to a printer or a screen. |
| World Wide Web | WWW is made up of documents called pages that are linked together. | processes | A series of actions used to produce something or reach a goal. |
| device | A machine that is made for a particular purpose. | Search engine | A software program that searches a database or network. |

## Links Across the Curriculum

Science—technology, the future, inventing things.

## Lessons Sequence / Key Knowledge / Disciplinary Knowledge / Skills

| Lessons Sequence | Key Knowledge | Disciplinary Knowledge / Skills |
|---|---|---|
| 1. What are the components of a computer system and how do they work together? | Children can explain that systems are built using a number of parts. Children can describe that a computer system features inputs, processes and outputs. Children can explain that computer systems communicate with other devices. | Describe the differences between inputs, outputs and processes. |
| 2. How can computer systems help us? | Children can identify tasks that are managed by computer systems. Children can identify the human elements of a computer system. Children can explain the benefits of a given computer system. | Identify the human elements of a computer system. |
| 3. How can we use search engines effectively? | Children can make use of a web search to find specific information. Children can refine their web searches. Children can compare results from different search engines. | Use a search engine to find specific information and refine a web search. |
| 4. Why do some searches using a search engine return more results than others? | Children can explain why we need tools to find things online. Children can recognise the role of web crawlers in creating an index. Children can relate a search term to the search engine's index. | Recognise the role of a web crawler and the reasons why these are useful when using a search engine. |
| 5. How are search results ranked? | Children can order a list by rank. Children can explain that a search engine follows rules to rank results. Children can give examples of criteria used by search engines to rank results. | Understand why entries are ranked on a search engine. |
| 6. How are searches influenced? | Children can describe some of the ways that search results can be influenced. Children can recognise some of the limitations of search engines. Children can explain how search engines make money. | Understand that there are limitations to search engines and how this affects us as consumers. Understand that a range of search engines or sources needs to be used in order to find all information. |

## Themes

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Social Media Networks—Facebook. Instagram, Snapchat, Twitter.

## Outcome / Character Traits / Stickability / WOW

| Outcome | Character Traits | Stickability | WOW |
|---|---|---|---|
| Children to conduct safe and useful searches on the internet using a search engine. | Curiosity Respectful | Digital Leaders Google Form Assessment | Take the children on a tour around the school to view all of the parts of the network—router, server, switch. |

# Year 6 - Computing - Computer Networks

## Curriculum Objectives

- Understand computer networks including the internet;
- Understand how computer networks can provide multiple services, such as the world wide web;
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## Vocabulary

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| technology | Solves a practical problem that | inputs | Information that is put into a computer. |
| network | A system of computers that are connected to one or another computer. | outputs | The information stored in a computer which is transmitted to a printer or a screen. |
| World Wide Web | WWW is made up of documents called pages that are linked together. | processes | A series of actions used to produce something or reach a goal. |
| device | A machine that is made for a particular purpose. | Data packet | A unit of data that travels along a selected network path. |

## Links Across the Curriculum

Science—technology, the future, inventing things.

## Lessons Sequence / Key Knowledge / Disciplinary Knowledge / Skills

| Lessons Sequence | Key Knowledge | Disciplinary Knowledge / Skills |
|---|---|---|
| 1. What are examples of effective communication when online? | Children can recognise that data is transferred using agreed methods. Children can explain that internet devices have addresses. Children can describe how computers use addresses to access websites. | Understand that web addresses are required in order to access websites. Name a range of popular addressed that might be useful in everyday life. |
| 2. What is a data packet? | Children can identify and explain the main parts of a data packet. Children can explain that data is transferred over networks in packets. Children can explain that all data transferred over the internet is in packets. | Understand what a data packet is and name some examples from everyday life. |
| 3. How can we work together when we are not in the same location? | Children can recognise how to access shared files that are stored online. Children can send information over the internet in different ways. Children can explain that the internet allows different media to be shared. | Understand how information and files can be shared across the internet. Explore sharing files in a range of ways with their peers. |
| 4. How can we reuse and modify another user's work online? | Children can identify different ways of working together online. Children can recognise that working together on the internet can be public or private. Children can explain how the internet enables effective collaboration. | Discuss a range of ways that learning can be collaborative online. Name collaborative programs or apps that can be used for different purposes both as children and as adults. |
| 5. What different ways are there to communicate? | Children can explain the different ways in which people communicate. Children can identify that there are a variety of ways to communicate over the internet. Children can choose methods of communication to suit particular purposes. | Select the most appropriate method of communication for different purposes. |
| 6. How can we communicate responsibly online? | Children can compare different methods of communicating on the internet. Children can decide when I should and should not share information online. Children can explain that communication on the internet may not be private. | Understand that information and data about you will remain on the internet forever even when something has been deleted. |

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Social Media Networks—Facebook. Instagram, Snapchat, Twitter.

## Outcome / Character Traits / Stickability / WOW

| Outcome | Character Traits | Stickability | WOW |
|---|---|---|---|
| Children to communicate and collaborate online together through the use of Google Workspace. | Curiosity Respectful Articulate | Digital Leaders Google Form Assessment | Take the children on a tour around the school to view all of the parts of the network—router, server, switch. |

Rushey Mead Primary School