

**Year two: Autumn 2**

**Topic title:**

**E-safety-** what happens when I post online?

**Computer systems and networks** - what is a computer **And Data Handling-** International space station

**Skills used:** Computer science (CS) Information Technology (IT) Digital Literacy (DL)

**Big question: what is a computer:** How are computer used in the wider world? **International space station:** How do computers help astronauts on the ISS?

<p><b>Prior learning:</b></p> <ul style="list-style-type: none"> <li>● Computer Systems and networks</li> <li>● Logging in and logging out - E-safety</li> <li>● loose parts play- International space station</li> </ul> <p><b>Future learning:</b></p> <ul style="list-style-type: none"> <li>● How do I keep my things safe online? <b>And</b> It's my choice- E-safety.</li> </ul>	<p><b>E-safety Skills:</b></p> <p>Identifying whether information is safe or unsafe to be shared online. (DL)</p> <p>Learning how to create a strong password. (DL)</p> <p>Learning to be respectful of others when sharing online and ask for their permission before sharing content. (DL)</p> <p>Learning strategies for checking if something they read online is true. (DL)</p> <p>Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable. (DL)</p> <p><b>E-safety Knowledge:</b></p> <p>To understand the difference between online and offline.</p> <p>To understand what information I should not post online.</p> <p>To know what the techniques are for creating a strong password.</p> <p>To know that you should ask permission from others before sharing about them online and that they have the right to say 'no'.</p> <p>To understand that not everything I see and read online is not true.</p>	<p><b>Knowledge:</b></p> <p><b>What is a computer-</b></p> <p>To know the difference between a desktop and laptop computer.</p> <p>To know that people control technology.</p> <p>To know some input devices that give a computer an instruction about what to do (output).</p> <p>To know that computers often work together.</p> <p><b>International space station</b></p> <p>To understand that you can enter simple data into a spreadsheet.</p> <p>To understand what steps you need to take to create an algorithm.</p> <p>To know what data to use to answer certain questions.</p> <p>To know that computers can be used to monitor supplies.</p>	<p><b>Skills:</b></p> <p><b>What is a computer-</b></p> <p>Understanding what a computer is and that it's made up of different components. (CS)</p> <p>Recognising that buttons cause effects and that technology follows instructions. (CS)</p> <p>Learning how we know that technology is doing what we want it to do via its output.</p> <p>Using greater control when taking photos with cameras, tablets or computers. (CS)</p> <p>Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. (IT)</p> <p>Using word processing software to type and reformat text. (IT)</p> <p>Creating and labelling images. (IT)</p> <p>Learning how computers are used in the wider world.(IT)</p> <p><b>International space station</b></p> <p>Developing confidence with the keyboard and the basics of touch typing. (CS)</p> <p>Creating and labelling images. (IT)</p> <p>Collecting and inputting data into a spreadsheet.(IT)</p> <p>Interpreting data from a spreadsheet. (IT)</p> <p>Learning how computers are used in the wider world. (IT)</p>
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**Critical Content Statements:**

<p><b>E-safety</b></p> <p><b>Permission</b> -We must ask someone's permission before sharing photos, videos or information about them.</p> <p><b>Password</b> -A secret word or phrase that is used to gain access to something.</p> <p><b>Personal information-</b> Information such as our full name, address, birthday, or where we go to school.</p> <p><b>Online</b> - Being connected to the internet via a device, such as a computer, laptop or phone.</p> <p><b>Offline</b> - Not being connected to the internet.</p> <p><b>Sharing online</b> - Sharing content (music, photos, videos or information) online.</p>	<p><b>International space station</b></p> <p><b>International space station</b>-A laboratory in space that orbits the Earth.</p> <p><b>Laboratory</b>-A place where scientists carry out research and experiments to discover more about something.</p> <p><b>Astronaut</b> -Someone who is trained to control a spacecraft.</p> <p><b>Experiment</b>-To trial and test new ideas.</p> <p><b>Satellite</b>-A computer that orbits the Earth to provide information or communication services.</p> <p><b>Space</b> -A vast area around and beyond planet Earth, which is not inhabited.</p>	<p><b>What is a computer?</b></p> <p><b>Computer</b>-Electronic machine that accepts and processes information to produce an output, and then stores the results.</p> <p><b>Laptop</b>-A compact computer that is easy to carry and move around.</p> <p><b>Desktop</b>- A tower computer that needs a mouse, keyboard and monitor, that stays in one place.</p> <p><b>Keyboard</b> -An input device made up of buttons that create letters,numbers, and symbols, as well as perform other functions.</p> <p><b>Mouse</b>-A handheld device that is used to move things around on the computer screen.</p> <p><b>Output</b> - Information or data that is sent by the computer to an output device such as a printer or speakers.</p> <p><b>Input</b>- A way of telling the computer what you want it to do.</p>
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**Year Two: Spring 2**

**Topic title:**

**E- safety - how do I keep my things safe online? And It's my choice**

**Programming -Algorithms and debugging**

**Skills used:** Computer science (CS) Information Technology (IT) Digital Literacy (DL)

**Big question:** What is debugging and how does it affect algorithms?

**Prior learning:**

- Algorithms unplugged
- What happens when I post online? -E-safety

**Future learning:**

- Algorithms and debugging.
- Is it true?-Esafety

**E-safety Skills:**

Identifying whether information is safe or unsafe to be shared online. (DL)  
 Learning how to create a strong password. (DL)  
 Learning to be respectful of others when sharing online and ask for their permission before sharing content. (DL)  
 Learning strategies for checking if something they read online is true. (DL)  
 Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable. (DL)

**E-safety Knowledge:**

To understand the difference between online and offline.  
 To understand what information I should not post online.  
 To know what the techniques are for creating a strong password.  
 To know that you should ask permission from others before sharing about them online and that they have the right to say 'no'.  
 To understand that not everything I see and read online is not true.

**Knowledge:**

- To understand what machine learning is and how it enables computers to make predictions
- To know that loops in programming are where you set a certain instruction (or instructions) to be repeated multiple times.
- To know that abstraction is the removing of unnecessary detail to help solve a problem.

**Skills:**

- Developing confidence with the keyboard and the basics of touch typing. (CS)
- Articulating what decomposition is. (CS)
- Decomposing a game to predict the algorithms used to create it. (CS)
- Learning that there are different levels of abstraction. (CS)
- Explaining what an algorithm is. (CS)
- Following an algorithm. (CS)
- Creating a clear and precise algorithm. (CS)
- Learning that programs execute by following precise instructions. (CS)
- Incorporating loops within algorithms. (CS)
- Using logical thinking to explore software, predicting, testing and explaining what it does. (CS)
- Using an algorithm to write a basic computer program. (CS)
- Developing word processing skills, including altering text, copying and pasting and using keyboard shortcuts. (IT)

**Critical Content Statements:**

**E-Safety:**

**Permission** -We must ask someone's permission before sharing photos, videos or information about them.  
**Password** -A secret word or phrase that is used to gain access to something.  
**Personal information**- Information such as our full name, address, birthday, or where we go to school.  
**Online** - Being connected to the internet via a device, such as a computer, laptop or phone.  
**Offline** - Not being connected to the internet.  
**Sharing online** - Sharing content (music, photos, videos or information) online.

**Algorithms:**

**Algorithm** - A clear set of instructions to carry out a task.  
**Abstraction** - To pick out the important information.  
**Bug** - An error or mistake in computer code.  
**Debug** -To fix the error in code.  
**Decompose** - To break something down into smaller chunks.  
**Error** -A mistake.  
**Correct** -Free from mistakes.  
**Loop** -A repeated sequence of instructions.  
**Predict** -To make a guess.

**Year two: Summer 2**

**Topic title:**

**E-safety- Is it true?**

**programming - Scratch Jr**

**Skills used:** Computer science (CS) Information Technology (IT) Digital Literacy (DL)

**Big question:** what is code?

**Prior learning:**

- Algorithms and debugging.
- How do I keep my things safe online? **And** It's my choice- E-safety

**Future learning:**

- Scratch

**E-safety Skills:**

Identifying whether information is safe or unsafe to be shared online. (DL)  
Learning how to create a strong password. (DL)  
Learning to be respectful of others when sharing online and ask for their permission before sharing content. (DL)  
Learning strategies for checking if something they read online is true. (DL)  
Understanding how to stay safe when talking to people online and what to do if they see or hear something online that makes them feel upset or uncomfortable. (DL)

**E-safety Knowledge:**

To understand the difference between online and offline.  
To understand what information I should not post online.  
To know what the techniques are for creating a strong password.  
To know that you should ask permission from others before sharing about them online and that they have the right to say 'no'.  
To understand that not everything I see and read online is not true.

**Knowledge:**

To know that coding is writing in a special language so that the computer understands what to do.  
To understand that the character in ScratchJr is controlled by the programming blocks.  
To know that you can write a program to create a musical instrument or tell a joke.

**Skills:**

Using software (and unplugged means) to create story animations. (CS)  
Following an algorithm. (CS)  
Creating a clear and precise algorithm. (CS)  
Learning that programs execute by following precise instructions. (CS)  
Incorporating loops within algorithms. (CS)  
Using logical thinking to explore software, predicting, testing and explaining what it does. (CS)  
Using an algorithm to write a basic computer program. (CS)  
Using loop blocks when programming to repeat an instruction more than once. (CS)  
Using software (and unplugged means) to create story animations. (IT)

**Critical Content Statements:**

**E-Safety:**

**Permission** -We must ask someone's permission before sharing photos, videos or information about them.

**Password** -A secret word or phrase that is used to gain access to something.

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**Scratchjr:**

**Sequence** - A set order or pattern for something to follow.

**Loop** - A repeated sequence of instructions.

**Imitate** - To copy.

**Code (Verb)** - To write in programming language (code).

**Code (computer)** - A set of instructions written in programming language, to tell a computer what to do.

**Bug** - An error or mistake in computer code.

**Algorithm** - A clear set of instructions to carry out a task.

**Debug** - To fix the error in code.

**Instructions** - A list of commands and directions on how to do something.