

## **KS4 Computing-Understanding Domestic / Workplace ICT (networks and servers, evaluating and purchasing ICT hardware and software)**

In this module students will learn how ICT plays a significant role within the modern household and work environment. Students will learn how hardware is connected within each environment and how to evaluate and research ICT need and products prior to purchase. Students will use PowerPoint or Book Creator in order to produce a series of presentations based upon their research and carry out ICT tasks related to their learning. Students will embed and advance their knowledge of PowerPoint and book creator in doing so.

**RRS Articles:** This unit of work is linked **Article 13** of the UN Convention on the Rights of the Child.

*"I have the right to find and share information"*

	<u>P5-6</u>	<u>P7-8</u>	<u>Step 1</u>	<u>Step 2</u>	<u>Step 3</u>
<b>Theme-The use of ICT within the household</b>					
<b><u>Subject specific knowledge</u></b>	<p>Is able to identify common pieces of ICT / ICT related hardware found within the home environment.</p> <p>Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios</p> <p>Is able to turn on and off a range of ICT equipment.</p> <p>Understands how each piece of equipment is charged (where relevant).</p> <p>Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).</p>	<p>Is able to identify common pieces of ICT / ICT related hardware found within the home environment.</p> <p>Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios Voice activation devices (Alexa)</p> <p>Is able to turn on and off a range of ICT equipment.</p> <p>Understands how each piece of equipment is charged (where relevant).</p> <p>Understands how to appropriately store ICT equipment at home.</p> <p>Is able to link hardware with appropriate uses (i.e. digital</p>	<p>Is able to identify common pieces of ICT / ICT related hardware found within the home environment.</p> <p>Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios Voice activation devices (Alexa)</p> <p>Is able to turn on and off a range of ICT equipment.</p> <p>Understands how each piece of equipment is charged (where relevant).</p> <p>Understands how to appropriately store ICT equipment at home / dispose of ICT equipment.</p> <p>Is able to link hardware with appropriate uses (i.e. digital</p>	<p>Is able to identify common pieces of ICT / ICT related hardware found within the home environment.</p> <p>Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios Voice activation devices (Alexa)</p> <p>Is able to turn on and off a range of ICT equipment.</p> <p>Understands how each piece of equipment is charged (where relevant).</p> <p>Understands how to appropriately store ICT equipment at home / dispose of ICT equipment.</p> <p>Is able to link hardware with appropriate uses (i.e. digital</p>	<p>Is able to identify common pieces of ICT / ICT related hardware found within the home environment.</p> <p>Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios Voice activation devices (Alexa)</p> <p>Is able to turn on and off a range of ICT equipment.</p> <p>Understands how each piece of equipment is charged (where relevant).</p> <p>Understands how to appropriately store ICT equipment at home / dispose of ICT equipment.</p> <p>Is able to link hardware with appropriate uses (i.e. digital</p>

		<p>camera for taking photographs).</p> <p>Is able to state which devices require internet access and why.</p>	<p>camera for taking photographs).</p> <p>Is able to state which devices require internet access and why.</p> <p>Understands how homes receive the internet (cable)</p>	<p>camera for taking photographs).</p> <p>Is able to state which devices require internet access and why.</p> <p>Understands how homes receive the internet (cable, ADSL, mobile broadband).</p> <p>Understands the concept of Wi-Fi.</p>	<p>camera for taking photographs).</p> <p>Is able to state which devices require internet access and why.</p> <p>Understands how homes receive the internet via cable and other (cable, ADSL, mobile broadband).</p> <p>Understands the concept of Wi-Fi.</p> <p>Understands basic issues with home internet and how to resolve them (not enough bandwidth, speed, poor service etc).</p>
<p><b><u>Subject specific skills</u></b></p>	<p>Is able to identify a piece/s of hardware highlighted within a domestic setting. I.e. picture of somebody playing on xbox.</p>	<p>Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)</p> <p>Is able to recommend appropriate pieces of hardware (with basic reason) in response to a scenario. I.e. David wants to look up the TV listings.</p> <p>Is able to state why specific devices need access to the internet and what would happen if they did not have such access.</p>	<p>Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)</p> <p>Is able to recommend appropriate pieces of hardware (with basic reason) in response to a scenario. I.e. David wants to look up the TV listings.</p> <p>Is able to state why specific devices need access to the internet and what would happen if they did not have such access.</p> <p>Is able to give a presentation on how most homes receive the internet.</p>	<p>Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)</p> <p>Is able to recommend appropriate pieces of hardware (with basic reason) in response to a scenario. I.e. David wants to look up the TV listings.</p> <p>Is able to state why specific devices need access to the internet and what would happen if they did not have such access.</p> <p>Is able to give a presentation on how most homes receive the internet (inc ADSL, cable and 3 and 4G) and how Wi-Fi is used within the home and compare prices and spec.</p>	<p>Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)</p> <p>Is able to recommend appropriate pieces of hardware (with basic reason) in response to a scenario. I.e. David wants to look up the TV listings.</p> <p>Is able to state why specific devices need access to the internet and what would happen if they did not have such access.</p> <p>Is able to give a presentation on how most homes receive the internet (inc ADSL, cable and 3 and 4G) and compare prices and spec</p> <p>Is able to troubleshoot scenarios based upon the use of Wi-Fi and broadband.</p>

Theme-The use of ICT within the work environment					
<b><u>Subject specific knowledge</u></b>	Is able to identify common pieces of ICT / ICT related hardware found within the school environment.	Is able to identify common pieces of ICT / ICT related hardware found within the school environment.	Is able to identify common pieces of ICT / ICT related hardware found within the school environment.	Is able to identify common pieces of ICT / ICT related hardware found within the school environment.	Is able to identify common pieces of ICT / ICT related hardware found within the school environment.
	Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards	Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards	Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards	Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards	Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards
	Is able to turn on and off a range of ICT equipment.	Is able to turn on and off a range of ICT equipment.	Is able to turn on and off a range of ICT equipment.	Is able to turn on and off a range of ICT equipment.	Is able to turn on and off a range of ICT equipment.
	Understands how each piece of equipment is charged (where relevant).	Understands how each piece of equipment is charged (where relevant).	Understands how each piece of equipment is charged (where relevant).	Understands how each piece of equipment is charged (where relevant).	Understands how each piece of equipment is charged (where relevant).
	Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).	Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).	Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).	Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).	Is able to link hardware with appropriate uses (i.e. digital camera for taking photographs).
		Is able to state which devices require internet access and why.	Is able to state which devices require internet access and why.	Is able to state which devices require internet access and why.	Is able to state which devices require internet access and why.
		Understands H&S and rules of appropriate behaviour when using ICT within school (passwords, appropriate searches, no violent games, do not edit folders of other peoples work, use of student images etc).	Understands H&S and rules of appropriate behaviour when using ICT within school (passwords, appropriate searches, no violent games, do not edit folders of other peoples work, use of student images etc).	Understands H&S and rules of appropriate behaviour when using ICT within school (passwords, appropriate searches, no violent games, do not edit folders of other peoples work, use of student images etc).	Understands H&S and rules of appropriate behaviour when using ICT within school (passwords, appropriate searches, no violent games, do not edit folders of other peoples work, use of student images etc).
			Understands the use of wi-fi and LAN internet connections (ethernet cables) within school.	Understands the use of wi-fi and LAN internet connections (ethernet cables) within school.	Understands the use of wi-fi and LAN internet connections (ethernet cables) within school.
				Understands the booking out / damages procedure for each piece of hardware and the	Understands the booking out / damages procedure for each

				support offered to us by Dataspire.	<p>piece of hardware and the support offered to us by Dataspire.</p> <p>Understands the use of school servers to store our work and host our network.</p>
<b><u>Subject specific skills</u></b>	Is able to select appropriate pieces of ICT hardware to complete a given task.	<p>Is able to select appropriate pieces of ICT hardware to complete a given task. Justify decisions and give alternatives if appropriate.</p> <p>Is able to identify and correct H&amp;S issues within an ICT scenario.</p> <p>Is able to identify which school ICT guideline has been broken within a given scenario / what is the appropriate response.</p>	<p>Is able to select appropriate pieces of ICT hardware to complete a given task. Justify decisions and give alternatives if appropriate.</p> <p>Is able to identify and correct H&amp;S issues within an ICT scenario.</p> <p>Is able to identify which school ICT guideline has been broken within a given scenario / what is the appropriate response.</p> <p>Is able to troubleshoot basic issues with LAN and Wi-Fi connections on the desktops, laptops and iPads.</p>	<p>Is able to select appropriate pieces of ICT hardware to complete a given task. Justify decisions and give alternatives if appropriate.</p> <p>Is able to identify and correct H&amp;S issues within an ICT scenario.</p> <p>Is able to identify which school ICT guideline has been broken within a given scenario / what is the appropriate response.</p> <p>Is able to troubleshoot basic issues with LAN and Wi-Fi connections on the desktops, laptops and iPads.</p> <p>Is able to create a presentation outlining the school policies re ICT hardware booking / damages and the support offered by DS</p>	<p>Is able to select appropriate pieces of ICT hardware to complete a given task. Justify decisions and give alternatives if appropriate.</p> <p>Is able to identify and correct H&amp;S issues within an ICT scenario.</p> <p>Is able to identify which school ICT guideline has been broken within a given scenario / what is the appropriate response.</p> <p>Is able to troubleshoot basic issues with LAN and Wi-Fi connections on the desktops, laptops and iPads.</p> <p>Is able to create a presentation outlining the school policies re ICT hardware booking / damages /support offered by DS and a basic over view of our server set up.</p>
<b>Theme-Evaluating and Purchasing ICT</b>					
<b><u>Subject specific knowledge</u></b>	Understands the specific purpose of each piece of ICT/ICT related hardware.	Understands the specific purpose of each piece of ICT/ICT related hardware.	<p>Understands the specific purpose of each piece of ICT/ICT related hardware.</p> <p>Understands the different places ICT/ICT related equipment could be bought.</p>	<p>Understands the specific purpose of each piece of ICT/ICT related hardware.</p> <p>Understands the different places ICT/ICT related equipment could be bought.</p> <p>Understands how to research and compare ICT equipment (specs, prices, deals).</p>	

<b><u>Subject specific skills</u></b>	Is able to select appropriate pieces of ICT hardware to complete a given task.	Is able to find appropriate pieces of ICT hardware on a website in response to a specific request (i.e. what is the price of an iPad at Argos).	Is able to find appropriate pieces of ICT hardware on a website in response to a specific request (i.e. what is the price of an iPad at Argos). Is able to compare prices from different outlets.	Is able to list (in rank order) the ICT equipment required for a specific scenario (i.e. a teenagers bedroom, a classroom) and justify decisions.  Is able to research the purchasing of a piece of ICT hardware from a wide range of outlets and discuss the pro and cons of each purchase.  Is able to compare prices and specs of two pieces of hardware (i.e. laptops) and choose the most appropriate in regards to budget / usage and justify reasons.	
<b><u>Online research</u></b>					
<b><u>Subject specific knowledge</u></b>	Understands that we can use computer technology to:  <b>Play games</b> <b>Complete work</b> <b>Talk to people</b> <b>Watch programmes</b> <b>Look at objects and places</b>	Understands what a search engine is.  Understands that keywords must be used when searching for images and web pages.  Understands how to navigate a search engine.	Understands what a search engine is.  Understands that there are children's search engines  Understands that keywords must be used when searching for images and web pages.	Understands what a search engine is.  Understands that there is more than one search engine.  Understands how to navigate a search engine.	Understands what a search engine is.  Understands that there is more than one search engine.  Understands how to navigate a search engine.  Understands the term copyright and how it applies to online information and products.
<b><u>Subject specific skills</u></b>	Is able to recognise themselves and other familiar people on a computer screen.  Is able to match objects in the room to objects on the computer screen.  Is able to locate a specific image on a Google search (search information inputted by staff).	Is able to search for specific images, types of websites (i.e. games, sporting) and specific websites using the search engine as well as inputting a web address.  Is able to identify the different types of content on a website (video, images, text, graphics, graphs, data tables etc).	Is able to search for specific images, types of websites (i.e. games, sporting) and specific websites using the search engine as well as inputting a web address.  Is able to identify the different types of content on a website (video, images, text, graphics, graphs, data tables etc).	Is able to search for specific images, types of websites (i.e. games, sporting) and specific websites using the search engine as well as inputting a web address.  Is able to identify the different types of content on a website (video, images, text, graphics, graphs, data tables etc).	Is able to search for specific images, types of websites (i.e. games, sporting) and specific websites using the search engine as well as inputting a web address.  Is able to identify the different types of content on a website (video, images, text, graphics, graphs, data tables etc).

	<p>Is able to watch a short video and recognise objects within it.</p> <p>Is able to watch a short video (ie physical exercise) and sequence the activities within the video.</p> <p>Is able to recognise familiar places within school from video or images.</p> <p>Is able to locate specific objects on a web page.</p>	<p>Is able to fine key images or text on a website (i.e. CBBC headline / main picture).</p>	<p>Is able to fine key images or text on a website (i.e. CBBC headline / main picture).</p> <p>Is able to make use of different search engines (child and adult).</p> <p>Is able to find out specific facts via a search / website.</p>	<p>Is able to fine key images or text on a website (i.e. CBBC headline / main picture).</p> <p>Is able to make use of different search engines (child and adult).</p> <p>Is able to find out specific facts via a search / website.</p> <p>Is able to locate a specific pager on a website dealing with a specific issue (i.e. cyber bullying on the CHILDNET page).</p> <p>Is able to plan (ie a journey / plan a shopping trip) using specific data from a website.</p> <p>Compares the same information on two different websites to verify information.</p>	<p>Is able to fine key images or text on a website (i.e. CBBC headline / main picture).</p> <p>Is able to make use of different search engines (child and adult).</p> <p>Is able to find out specific facts via a search / website.</p> <p>Is able to locate a specific pager on a website dealing with a specific issue (i.e. cyber bullying on the CHILDNET page).</p> <p>Is able to plan (ie a journey / plan a shopping trip) using specific data from a website.</p> <p>Is able to plan a holiday online.</p> <p>Compares the same information on two different websites to verify information.</p> <p>Is able to determine if information is fake news.</p> <p>Is able to search for copyright free product online.</p>
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**Personal development**

Problem solving-

Linked to resolving hard and software issues.

Communication skills-

Asking appropriate questions and listening to responses when troubleshooting ICT issues.

Self-belief-

Never giving up if unable to resolve the issues, continue to ask, listen and try different solutions.

Self-management-

Linked to independent research tasks and selecting appropriate information.

**Suggested activities**

**P5-8**

- Matching images to hardware and definitions (worksheet / PowerPoint based / Book Creator based).
- Labelling ICT hardware being used within an image.
- Completing checklist of activities / sequence of events in order to turn on / store ICT equipment.
- Completing a sequence of troubleshooting activities.

- Snap cards - i.e. image of a person listen to music using ear buds has to be match with a pair of ear buds.
- Research exercises based upon finding out the price of a specific piece of hardware.
- Annotating picture scenarios in regards to H&S issues
- Locating ICT equipment / storage rooms within school.

### **Level 1-3**

Above+

- Research exercises based upon purchasing and comparing ICT hardware.
- Use PowerPoint to create and deliver a presentation task based upon a specific aspect of the module (H&S, hardware, troubleshooting).
- Students take part in a series of practical scenarios based upon fixing basic internet / Wi-Fi issues.
- Worksheet based test based upon all aspects of the module.
- Annotating images to highlight H & S issues / ICT issues.
- Students create infographic within PowerPoint to illustrate how homes receive the internet / school procedures in regards to booking out ICT equipment / appropriate behaviour / Dataspire support and school server set up.
- Video tutorials / pictures sequences based upon the above.

### **Online resources**

- <https://www.bbc.co.uk/bitesize/guides/zxb72hv/revision/1>
- <http://planeta42.com/it/hardware.html>
- <https://www.webopedia.com/Hardware>
- <https://www.bbc.co.uk/bitesize/topics/zbhgjxs/articles/z9myvcw>
- <http://www.playkidsgames.com/games/computer/default.htm#>
- <https://www.instructables.com/id/Introduction-to-hardware-Learn-the-basics/>
- [https://www.abcya.com/games/input\\_output](https://www.abcya.com/games/input_output)
- <https://www.disklabs.com/how-mobile-phone-masts-work/>
- <https://www.uswitch.com/broadband/guides/what-is-broadband/>

### **Evidencing Work**

**All work / evidence sheets need to be printed off (where appropriate levelled in accordance with the rubric), students need to self assess and work needs to be put in student folders.**