KS4 Computing: Domestic and workplace ICT

Subject curriculum intent:	We want to prepare our students for life within the "Digital World". Students will develop the knowledge and skills required to use ICT within the academic, vocational and social aspects of their life. Students will be curious and confident in their use of ICT and have self-belief, digital confidence and the necessary knowledge and skills to keep up with the rapid changes within digital technology. Students will be able to problem solve ICT related issues. Students will know how to stay safe online and how to use the internet in a positive way in order to develop appropriate relationships, research information and make use of the wide range of online services. We want: • To provide pupils with opportunities to develop their computing capabilities in all areas specified by the National Curriculum and other relevant curricular guidance. • To provide pupils with a small steps, knowledge and skills based spiral curriculum that meets their post 16 needs. • To develop pupils' awareness of the use of ICT not only in the classroom, but also in everyday life. • To develop a digital confidence and curiosity within pupils via Computing lessons and the use of ICT in general. • To provide opportunities for pupils to gain knowledge about the general administration and maintenance of ICT tools. These include iPads, digital recording devices, word processors, databases, control devices, graphics and software for processing sound and images. • To provide vocational experiences with external agencies e.g. Digital Advantage. • To ensure our pupils stay safe online and interact appropriately. • To ensure pupils understand how to use the internet to carry out research and access the wide range of online services. • Where appropriate, to provide pupils with the opportunity to be accredited for their computing skills (OCR Functional skills). • To provide pupils with the skills and knowledge to use common software found within educational and workplace settings. • To provide pupils with the knowledge and skills required to make use of and maintain hardware found within the home. • To provide all pupils with a differentiated curriculum that is supported by the relevant hardware and software.

End of KS3 intent/outcome	End of KS4 intent/outcome	End of KS5 intent/outcome
Students will be confident in their use of key functional software (Word, PowerPoint, Publisher) in line with the Information Technology strand of the national curriculum. Students will understand the concept of coding and will understand how to design, write and debug programmes to accomplish specific goals in line with the Computer Science strand of the national curriculum. As part of the Digital Literacy strand of the national curriculum, students will understand	Students will continue to build on the Information Technology, Computer Science and Digital literacy strands of the National Curriculum by following a curriculum that revisits the use of key functional software, coding, e-safety through the 2-year curriculum. Students understanding of Digital Literacy will also be developed as they continue to study key Computing topics relevant to today's digital world (I.e. fake news and the use of ICT within the domestic and workplace environment).	Students will continue to build upon the knowledge and skills gained within KS3 and 4 by integrating the use of ICT within all aspects of their academic curriculum (I.e. formatting presentation work) and vocational curriculum (planning and preparing local trips).

the key events within the history of computing, they will have the knowledge and confidence to troubleshoot basic issues with a computer and they will understand how to stay safe online.		

Intent for this topic:	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.
Key vocabulary taught within this topic:	Domestic, workplace, hardware, software, wi-fi, broadband, cable, reserach, compare, evaluate. Health and sfaety, search engine, desktop pc, laptop, consoles, mobile phone, smart tv, iphone, laptop, headphones, printer, scanner, voice activation devices.
Links to other subjects:	-Science -PSHCE -Functional maths _Functional English
RRSA	Article 13 Every child must be free to say what they think and to seek and receive all kinds of information, as long as it is within the law. Article 17 Every child has the right to reliable information from the media. This should be information that children can understand. Governments must help protect children from materials that could harm them.

Prior knowledge: what pupils may already have studied

Key stage	Subject	Topic title	Term/year taught	Content/What might pupils already know?
3	Computing	History of Computing	Year 3 – Term 2	The development and use of a wide range of computing hardware and software.

Links to other subjects:
History
Maths (Time / Sequencing)

	B2 P 5-6	B2 P7-8	B2 Step 1	B2 Step 2	B2 Step 3
Theme-The use of ICT within the household					
Subject specific knowledge	From a choice of 2, **students know** the names of common pieces of ICT / ICT related hardware found within the home environment. Desktop PC Laptop iPad Mobile phone Using picture support **Students understand** where the on and off button is for: Desktop PC Laptop From a choice of 2, **students know** where the	From a choice of 2, **students know** the names of common pieces of ICT / ICT related hardware found within the home environment. Desktop PC Laptop iPad Consoles Mobile phone Headphones / ear buds Using picture support **Students understand** where the on and off button is for: Desktop PC Laptop iPad From a choice of 2, **students know** where the charging	**Students know** the names of common pieces of ICT / ICT related hardware found within the home environment. Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Using picture support **Students understand** where the on and off button is for: Desktop PC Laptop iPad Smart TV Mobile phone **Students know** where the charging cable/power supply cable is for:	**Students know** the names of common pieces of ICT / ICT related hardware found within the home environment. Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Using picture support **Students understand** where the on and off button is for: Desktop PC Laptop iPad Smart TV Printer Mobile phone Digital cameras Plug in headphones **Students know** where the charging cable/power supply cable is for:	**Students know** the names of common pieces of ICT / ICT related hardware found within the home environment. Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras Digital radios Voice activation devices (Alexa) Using picture support **Students understand** where the on and off button is for: Desktop PC Laptop iPad Smart TV Printer Mobile phone Digital cameras Plug in headphones **Students know** where the charging cable/power supply cable is for:

	charging cable/power supply cable is for: Desktop PC Laptop iPad From a choice of 2, **students know** the purpose of the hardware (listed above) / appropriate uses:	cable/power supply cable is for: Desktop PC Laptop iPad Mobile phone From a choice of 2-4, **students know** the purpose of the hardware (listed above) / appropriate uses: From a choice of 2-4, **<u>students know</u>** the safe and unsafe ways of storing hardware.	Desktop PC Laptop iPad Smart TV Mobile phone **Students know** the purpose of the hardware (listed above) / appropriate uses: **<u>Students know</u>** the safe and unsafe ways of storing hardware. **<u>Students know</u>** which devices require internet access and why.	Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras **Students know** the purpose of the hardware (listed above) / appropriate uses: **<u>Students know</u>** the safe and unsafe ways of storing hardware. **<u>Students know</u>** which devices require internet access and why. **<u>Students understand</u>** how homes receive the internet (cable, ADSL, mobile broadband). **<u>Students understand</u>** the concept of Wi-Fi.	Desktop PC Laptop iPad Consoles Mobile phone Smart TV Headphones / ear buds Printer Scanner Digital cameras **Students know** the purpose of the hardware (listed above) / appropriate uses: **<u>Students know</u>** the safe and unsafe ways of storing hardware. **<u>Students know</u>** which devices require internet access and why. **<u>Students understands</u>** how homes receive the internet via cable and other (cable, ADSL, mobile broadband). **<u>Students understand</u>** the concept of Wi-Fi. **<u>Students understand</u>** basic issues with home internet and how to resolve them (not enough bandwidth, speed, poor service etc).
<u>Subject specific skills</u>	From a choice of 2-4 is able to match a picture of a piece of hardware to the actual hardware itself.	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately)

	Is able to identify appropriate pieces of hardware (with basic reason) in response to a scenario. (choice of 2) to complete a task. i.e. I want to take a photograph, what shall I use? Ipad or laptop.	Is able to identify appropriate pieces of hardware (with basic reason) in response to a scenario. I.e. David wants to look up the TV listings. Please select the hardware and software that David use to do this?	Is able to identify appropriate pieces of hardware **(with basic reason)** in response to a scenario. I.e. David wants to look up the TV listings. Please select the hardware and software that David use to do this? Is able to state a workaround to a device not being able to access the internet.	Is able to identify appropriate pieces of hardware **(with basic reason / suggest alternative hardware)** in response to a scenario. I.e. David wants to look up the TV listings. Please select the hardware and software that David use to do this? Is able to state a workaround to a device not being able to access the internet. 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.	Is able to identify appropriate pieces of hardware **(with basic reason/suggest alternative hardware and state pros and cons**) in response to a scenario. I.e. David wants to look up the TV listings. Please select the hardware and software that David use to do this? Is able to state a workaround to a device not being able to access the internet. 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 Is able to troubleshoot scenarios based upon the use of Wi-Fi and broadband.
Theme-The use of ICT within the work environment					
Subject specific knowledge	Using a picture prompt, **students know** the names of common pieces of ICT / ICT related hardware found within the school environment. Desktop PC Laptop iPad Headphones / ear buds Printer Using a picture prompt, i **Students know** how to turn on and off a range of ICT equipment and identify the power supply.	**Students know** the names of common pieces of ICT / ICT related hardware found within the school environment. Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards Using a picture prompt, students know how to turn on and off a range of ICT equipment and identify the power supply.	**Students know** the names of common pieces of ICT / ICT related hardware found within the school environment. Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards Students know how to turn on and off a range of ICT equipment and identify the power supply.	**Students know** the names of common pieces of ICT / ICT related hardware found within the school environment. Desktop PC Laptop iPad Headphones / ear buds Printer /Scanner Digital cameras Whiteboards Students know how to turn on and off a range of ICT equipment and identify the power supply.	**Students know** the names of 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 Students know how to turn on and off a range of ICT equipment and identify the power supply.

	From a choice of 2, students understand the purpose of the hardware (listed above) within school.	From a choice of 4, students understand the purpose of the hardware (listed above) within school.	Students understand the purpose of the hardware (listed above) within school. Students know which devices require internet access and why. Students 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).	Students understand the purpose of the hardware (listed above) within school. Students know which devices require internet access and why. Students 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). Students understands the use of wi-fi and LAN internet connections (ethernet cables) within school.	Students understand the purpose of the hardware (listed above) within school. Students know which devices require internet access and why. Students 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). Students understands the use of wi-fi and LAN internet connections (ethernet cables) within school. Students understands the booking out / damages procedure for each piece of hardware and the support offered to us by Dataspire. Students understands the use of school servers to store our work and host our network.
Subject specific skills	From a choice of 2-4 is able to match a picture of a piece of hardware to the actual hardware itself. Is able to identify appropriate pieces of hardware (with basic reason) in response to a scenario. (choice of 2) to complete a task.	Is able to select appropriate pieces of ICT hardware to complete a given task. Justify decisions and give alternatives if appropriate. Is able to identify and correct H&S issues within an ICT scenario. Is able to identify which school ICT guideline has been broken within a given scenario / what is the appropriate response.	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately) Is able to identify appropriate pieces of hardware **(with basic reason)** in response to a scenario. I.e. David wants to record a piece of music in his music lesson.	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately) Is able to identify appropriate pieces of hardware **(with basic reason / suggest alternative hardware)** in response to a scenario. I.e. David wants to record a piece of music in his music lesson.	Is able to independently manage ICT equipment (i.e. turning equipment on or off, packing it away and storing it appropriately) Is able to identify appropriate pieces of hardware **(with basic reason/suggest alternative hardware and state pros and cons**) in response to a scenario. I.e. David wants to record a piece of music in his music lesson.

	i.e. I want to take a photograph, what shall I use? Ipad or laptop.		Is able to state why specific devices need access to the internet and what would happen if they did not have such access. Is able to identify simple H & S issues from an image / scenario.	Is able to state why specific devices need access to the internet and what would happen if they did not have such access. Is able to identify and correct H&S issues within an ICT scenario. Is able to troubleshoot basic issues with LAN and Wi-Fi connections on the desktops, laptops and iPads.	Is able to state why specific devices need access to the internet and what would happen if they did not have such access. Is able to give a presentation on how most school receive the internet (inc ADSL, cable and 3 and 4G) and compare prices and spec Is able to troubleshoot scenarios based upon the use of Wi-Fi and broadband.
Theme-Evaluating and Purchasing ICT					
Subject specific knowledge	Understands the specific purpose of each piece of ICT/ICT related hardware.	Understands the specific purpose of each piece of ICT/ICT related hardware.	Understands the specific purpose of each piece of ICT/ICT related hardware. Understands the different places ICT/ICT related equipment could be bought (online and offline).	Understands the specific purpose of each piece of ICT/ICT related hardware. Understands the different places ICT/ICT related equipment could be bought (online and offline). Understands how to research and compare ICT equipment (specs, prices, deals).	
Subject specific skills	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 please find the picture of an iPad).	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 teenager's 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.	
Online research					

Subject specific knowledge	Understands that we can use computer technology to: Play games Complete work Talk to people Watch programmes Look at objects and places	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 how to navigate a search engine. 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 how to navigate a search engine. Understands that there is more than one search engine. Understands that keywords must be used when searching for images and web pages. Understands the term copyright and how it applies to online information and products.	
Subject specific skills	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 watch a short video and recognise objects within it. Is able to watch a short video (ie physical exercise) and sequence the activities within the video. Is able to recognise familiar places within school from video or images. Is able to locate specific objects on a web page.	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 fine key images or text on a website (i.e. CBBC headline / main picture).	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 fine key images or text on a website (i.e. CBBC headline / main picture). Is able to make use of different search engines (child and adult). Is able to find out specific facts via a search / website.	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 fine key images or text on a website (i.e. CBBC headline / main picture). Is able to make use of different search engines (child and adult). Is able to find out specific facts via a search / website. Is able to locate a specific pager on a website dealing with a specific issue (i.e. cyber bullying on the CHILDNET page). Is able to plan (ie a journey / plan a shopping trip) using specific data from a website.	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 fine key images or text on a website (i.e. CBBC headline / main picture). Is able to make use of different search engines (child and adult). Is able to find out specific facts via a search / website. Is able to locate a specific pager on a website dealing with a specific issue (i.e. cyber bullying on the CHILDNET page). Is able to plan (ie a journey / plan a shopping trip) using specific data from a website.

				Compares the same information on two different websites to verify information.	Is able to plan a holiday online. Compares the same information on two different websites to verify information. Is able to determine if information is fake news. Is able to search for copyright free product online.

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

B2 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.

B2 Step 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.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.