Holy Family Catholic High School

Subject	Year	Term
WJEC LEVEL 1/2 VOCATIONAL AWARD IN ICT	**11**	Autumn

Topic

1.2 - How data and information is used and transferred

Content - Intent

Prior Learning (Topic)	Key Stage 3 National Curriculum & Unit 2 (Year 10 – Spring)

From KS3 students should all understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns. As well understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems. While in Year 10 students will have also undertaken Unit 2 (Internal assessment) - 2.1 Planning, creating, modifying and using databases. Therefore, students will have the practical skills of validation and verification within a database.

Future Learning	1.3 Legal, moral, ethical, cultural and environmental impacts of IT and the need for cybersecurity

What Knowledge and Skills will be Taught (Implementation)	How will your understanding be assessed and recorded (Impact)
1.2.1 Why data must be fit for purpose Learners should know and understand that data consists of raw facts and figures and that information is data which has been processed by the computer. Learners will also be able to show knowledge is derived from information by applying rules to it. learners must understand that the need for good quality data and the potential benefits of encoding data and the reasons for doing it. This topic will also see learners be able to list the advantages and disadvantages of using information and communication technology for storing data as well as file types, data compression and file properties.	Learners need to understand how data becomes information, and information, when rules are applied to it, becomes knowledge, which can be used for a specific purpose. Understanding the need for accurate data is imperative as learners need to learn to be more accurate and exact in everything they do. The idea of GIGO (Garbage In, Garbage Out) is a valuable concept for learners to appreciate. Learning about good quality and valid data will help them to make better judgements regarding fake news and research they may undertake, giving them a more critical thinking way of looking at information. Learners should also understand the cost of information as part of quality information to help them understand how good quality and accurate data is crucial to the success of a business. Learners also need to understand methods of data transfer, including encoding, in order to understand how personal and business data can be affected. This is important so that learners can understand the security, storage and validity of data in a business and personal use. Understanding different file types and compression will allow learners to decide how data can be used by others and

		possibly what programs will be able to access that data.
1.2.2 How input data is checked for errors Learners should know and understand different data capture methods, methods used for validation and verification and where they are appropriate and the possible sources of error which could exist. Learner will also explore techniques used to overcome these errors.		Learners must understand the methods used for validation and verification, where they are appropriate and how these can be applied within businesses. Building on the importance of data accuracy from the previous section, learners should consider possible sources of error and which techniques are available to overcome these errors. They might consider techniques that they have come across themselves, such as data validation on online forms and verification of passwords to gain access to websites.
1.2.3 How data transfers over different types of network Learners should know and understand the differences between local (LAN) and wide area (WAN) networks along with the purpose of protocols. Learners will also look into network topologies including bus, star and ring. Learners must be able to list and describe how data is transferred over a network, potential threats to data transfer (e.g., packet sniffing), cloud computing vs in-house servers and emerging technologies.		Understanding more about networks builds on the KS3 curriculum and goes on to develop a deeper understanding of how businesses, centres and homes can use the different types of networks. Learners should understand the differences in types of network and topologies and have an awareness of potential threats to data transfer as this will enable them to make choices about how to protect data. This content aims to enable learners to be able to measure the threats to physical hardware, specific types of topologies, and obstructions/threats to data when transferred or stored. Learners should learn about a variety of types of network as they are likely to be required to apply their knowledge to a specific scenario when sitting the examination. New technologies in data transfer are constantly emerging and learners should be alert to these, so their knowledge of data transfer remains current.
1.2.4 Different types of connectivity Learners should know and understand the different connection methods including short range wireless connection ((802.11 Bluetooth), near-field communication (NFC), radio-frequency Identification (RFID)), medium range wireless connection (3G/4G/5G) and long-range wireless connection (microwave, satellite). Learners must also show an understanding for ethernet, USB, micro USB and USB C along with new and emerging technologies.		How devices connect with each other can make a significant impact on connection experience, therefore learners should understand the options available to them so they can make an informed decision on what type of connection to use in a range of situations. The different ways to connect has become increasingly important to learners with the use of mobile phones – they understand more about data usage and especially when living in a rural setting (wireless v Ethernet) – and so this might be a good starting point for this section. Knowing more about data and transferring data will

		help learners understand the different types of connectivity that are crucial to business. Understanding these will help learners make informed choices for the most efficient or cost-effective connection method for their needs. Learners should also be encouraged to keep their learning current by following new developments and emerging technologies.

How can parents help at home?

Parents can help by ensuring revision and homework is completed.

Helpful further reading and discussion

Reading

Level 1/2 Vocational Award ICT Course Companion
https://www.wjec.co.uk/qualifications/level-1-2-vocational-award-in-ict/?sub_nav_level=books#tab_resources