



Topic	Learning Objectives	Key Vocabulary	Learning Sequence	Linked Learning	Home Learning
<p>MODULE 1 ACTIVITY</p> <p>Project Planning</p> <ol style="list-style-type: none"> What are the stages of the Project Life Cycle SMART goals Work plans Project considerations 	<p>LO1 (R012) Understand the tools and techniques that can be used to initiate and plan solutions</p> <p>Phases of the project life cycle and the tasks carried out in each phase 1</p> <p>Interaction and iteration between the phases of the project life cycle</p> <p>The inputs and outputs of each stage of the project life cycle 1</p> <p>Initial project considerations</p> <p>LO2 (R013)To be able to initiate and plan a solution to meet an identified need</p> <p>Learners must be taught how to initiate a project by analysing the requirements to a given context</p>	<p>Initiation, Planning, Execution, Iterative review/final evaluation, Tasks, Activities, Workflow, Timescales, Resources, Milestones, Contingencies, Specific, Measurable, Achievable, Realistic, Time</p>	<p>We are starting with the project life cycle</p> <p>When a project is being developed, it is important that learners should set goals.</p> <p>To do this we can create SMART goals.</p> <p>Development of a work plan.</p> <p>Learners could create a help sheet to be given to someone starting a project that explains what a work plan is.</p> <p>When a project is first looked at there are a range of aspects that learners need to consider before deciding how to proceed solutions.</p>	<p>Web sources:</p> <p>https://www.sqa.org.uk/e-learning/ProjMan01CD/page_28.htm</p> <p>https://www.smartsheet.com/blog/demystifying-5-phases-project-management</p> <p>http://www.mppmm.com/project-management-methodology.php</p> <p>http://www.sage.co.nz/life_cycle.htm</p> <p>http://pmo.gmu.edu/pmframework/pmlifecycle.cfm</p> <p>www.mppmm.com/project-management-methodology.php</p> <p>http://www.sage.co.nz/life_cycle.htm</p> <p>http://pmo.gmu.edu/pmframework/pmlifecycle.cfm</p> <p>http://topachievement.com/smart.html</p> <p>https://www.wrike.com/project-management-guide/faq/what-is-smart-in-project-management/</p> <p>http://blog.capterra.com/10-smart-goal-setting-best-practices-for-project-planning/</p> <p>https://www.projectsart.co.uk/smart-goals.php</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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<p>MODULE 2 ACTIVITY</p> <p>Mitigating risks for a project</p> <p>Data Protection Act</p> <p>Computer Misuse Act</p>	<p>LO2 (R013)</p> <p>To be able to initiate and plan a solution to meet an identified need</p> <p>Learners should be taught how to mitigate risks through the planning process</p> <p>LO4 (R012) Understand the factors to be considered when collecting and processing data and storing data/information</p> <p>Prevention Measures</p> <p>Current legislation, its implications and applications</p>	<p>Current legislation and regulations – Data Protection Act</p> <p>Current legislation and regulations – Computer Misuse Act</p>	<p>Module 2 seeks to develop learners’ ability to reduce the risks that can affect the development of and use of a technological solution. Before learners can develop their own solution, they need to clearly understand:</p> <ul style="list-style-type: none"> • How to look at the risks that affect a project. • How to use the various tools, techniques and technology available to reduce these risks. • The legislation that has to be considered when developing and using a technological solution and to conform to it. 	<p>https://www.gov.uk/data-protection/the-data-protection-act</p> <p>http://www.bbc.co.uk/schools/gcsebitesize/ict/legal/1dataandcomputermisuserev1.shtml</p> <p>https://www.sqa.org.uk/e-learning/ITLaw01CD/page_03.htm</p> <p>http://www.legislation.gov.uk/ukpga/1990/18/contents https://thenextweb.com/uk/2012/05/17/uk-facebook-account-hacker-hit-with-12-month-prison-sentence/#.tnw_PdX4kgLy</p> <p>http://www.computerevidence.co.uk/Cases/CMA.htm</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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MODULE 3 ACTIVITY Planning and reviewing project phases	<p>LO1 (R012) Understand the tools and techniques that can be used to initiate and plan solutions and planning tools and the software types used to develop project plans</p> <p>LO2 (R013) To be able to initiate and plan a solution to meet an identified need and use planning documentation Learners should be taught how to undertake iterative testing 4</p> <p>LO8 (R013) To be able to iteratively review and evaluate the development of the solution and carry out and document an iterative review</p>	<p>Project Evaluation</p> <p>Review Technique</p> <p>Phase review</p> <p>Visualisation</p> <p>Client/end user's needs</p>	<p>Module 3 develops learner's ability to plan a project and then review the phases of the project life cycle. Before learners can plan their own solution and create a technological solution, they need to understand:</p> <p>The planning tools and software that are available for them to use.</p> <p>How to analyse a brief and select the key information from it.</p> <p>How to test their solution as they develop it ensure that it meets the client needs.</p> <p>How to review what they have already completed and suggest possible improvements.</p>	<p>http://www.investopedia.com/terms/p/pert-chart.asp http://searchsoftwarequality.techtarget.com/definition/PERT-chart https://www.edrawsoft.com/PERT-Chart.php https://www.smartdraw.com/pert-chart/examples/pert-chart-1/ https://en.wikipedia.org/wiki/Program_evaluation_and_review_technique</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>
MODULE 4 – Creating, updating, deleting and using data	<p>LO3 (R012)</p> <p>Understand how data and information can be collected, stored and used</p> <p>Data types</p> <p>Information</p>	<p>Data Types</p> <p>Information</p>	<p>Module 4 looks at how data is stored and manipulated using a computer system and then how it can be searched and used effectively to meet a given objective.</p> <p>The difference between data and information.</p> <p>How to enter the data into a computer system in a variety of data handling software.</p> <p>How to manipulate the data in a variety of data handling software so that usable information is generated.</p>	<p>https://www.w3schools.com/sql/sql_datatypes_general.asp https://www.w3schools.com/sql/sql_datatypes.asp https://docs.microsoft.com/en-us/sql/t-sql/data-types/precision-scale-and-length-transact-sql</p> <p>https://www.tutor2u.net/business/reference/the-difference-between-data-and-information</p> <p>http://www.diffen.com/difference/Data_vs_Information</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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Activity 4 Creating a database	LO5 (R013) To be able to import and manipulate data to develop a solution to meet an identified need Learners should be taught how to create, edit and delete data using appropriate software tools and techniques	Data Types, Validation, DBMS Tables Query	Learners could then create a database to store the information about ordering of revision guides for GCSE subjects. Learners could: In pairs, using appropriate software, create the database for the data supplied	https://www.bbc.co.uk/bitesize/topics/zwm6fg8	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.



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Module 4 :Using a spreadsheet	LO5 (R013) To be able to import and manipulate data to develop a solution to meet an identified need Learners should be taught how to create, edit and delete data using appropriate software tools and techniques	• VLOOKUP / HLOOKUP • SUMIF • COUNTIF • SUMIF • CONCATENATE/ CONCAT • DATE	Create a Spreadsheet Formulas Functions Advanced Functions Modeling	KS3 modelling	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.
MODULE 5 – Presenting information in a meaningful way	LO6 (R012) Understand the different methods of processing data and presenting information Selection and justification of the appropriate tools and techniques and formats to process data to meet the defined objectives in a given context. Purpose and suitability of presenting methods The resources required for presenting information and data and the appropriateness of the use	Target Audience Purpose	Module 5 looks at how information is presented so that it is useful and easy to use for its intended audience. To do this, learners should understand: <ul style="list-style-type: none"> The factors that will influence the decision about what method to select. These include: Audience o Location o Device (s) o Transfer method(s) o Data security How to present this information, what tools to use and why. 	http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.
Module 5 Presenting to audiences	LO7 (R013) To be able to select and present information in the development of the solution to meet an identified need. How to select and present information. Learners should be taught how to present information using appropriate software tools and techniques. Learners should be taught presentation techniques	Target Audience Purpose UI	What software would be most appropriate to present the data Who the audience is and how they could view the report/data How the data should be laid out so its easiest to view Design the interface before creating it, using the appropriate planning tools.	http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.



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MODULE 6 – Final evaluation for a project	LO8 (R013) To be able to iteratively review and evaluate the development of the solution Final review.	Evaluation Review Project	Module 6 looks at how a project is completed by carrying out a final evaluation of both the working processes that have been used together with the final product and how it meets the clients' needs. To do this, learners must understand: <ul style="list-style-type: none"> • How to review what they have done to meet the client's needs. • How to review the technology they have used and judge if was the most appropriate for the tasks. 	http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.
MODULE 7 – Collecting and storing data	LO3 (R012) Understand how data and information can be collected, stored and used Methods used to collect and store data and information, and the appropriateness of the use of these in a given context Storage and the appropriateness of the use of these in context 3 Use of data in a given context including Big Data		Module 7 looks at how data is collected and stored. Everything we do generates data, how it is collected and stored differs based on the situation. To be able to decide upon the most appropriate method(s) to use to collect and store the data learners need to understand: <ul style="list-style-type: none"> • The different methods of collecting data that can be carried out by people. • The different methods of collecting data that can be carried out machines and technology. • How to judge which is the best method of storing data in any situation. 	http://www.fao.org/docrep/003/x2465e/x2465e09.htm http://www.teach-ict.com/gcse_new/databases/data_capture/miniweb/pg2.htm http://www.inventoryops.com/ADC.htm http://www.bbc.co.uk/schools/gcsebitesize/ict/databases/2databasesrev3.shtml https://www.invensis.net/blog/data-processing/10-effective-ways-to-data-capture/ https://www.tutor2u.net/business/ict/intro_information_data_collection.htm	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.



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MODULE 7 – Collecting and storing data in context	Use of data in a given context including Big Data	These contexts are listed in the spec: a. law enforcement b. education c. health and fitness d. shopping e. entertainment / leisure f. lifestyle.	Data is used in all walks of life and is used to aid decision making, from deciding what clothes to stock in a shop to what transport links to develop. Learners could create several ‘case study’ files that explain how data is used in a variety of global contexts.	https://www.ons.gov.uk/peoplepopulationandcommunity/crimeandjustice https://www.apple.com/uk/ios/health/ https://www.fitnesssyncer.com/ https://data.cdrc.ac.uk/dataset?tags=Shopping+Habits	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.



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MODULE 8 – Cyber security – threats and preventions	LO4 (R012) Understand the factors to be considered when collecting and processing data and storing data/information 1, 2, 3, 4 Types of threats 1 The vulnerabilities –which can be exploited in a cyber-security attack The impacts of a cyber-security attack Detailed Prevention methods	Vulnerability data security	Module 8 looks in detail at the threats that our data and computer systems face daily, together with the measures that can be taken to deal with these threats. Learners should be able to select the most appropriate prevention method for a situation. To do this learners’ need to understand: <ul style="list-style-type: none"> • The threats that exist. • Why and how these threats are used. • The impact of these threats and attacks on individuals and organisations. • How these threats can be dealt with and the measures that can be put in place to stop them having an effect. 	http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.
MODULE 8 – Cyber security – threats and preventions	The impacts of a cyber-security attack	denial of service (DoS) to authorised others identify theft data destruction data manipulation data modification data theft.	Learners need to understand that a cyber-attack has a different impact depending on who (individual or organisation), how and when they are attacked. Learners could research attacks.	http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/	This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.



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<p>MODULE 8 – Cyber security – threats and preventions</p> <p>Protecting information technology systems</p>	<p>Detailed Prevention methods</p>	<p>Biometric, access rights and permissions, authentication, usernames, passwords, anti-virus software, encryption, backups, over writing</p>	<p>There are several prevention methods listed in the specification that learners must be aware of, These include: physical, logical, physical destruction.</p>	<p>Modelling their own security measures.</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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MODULE 9 – Legislation and data reliability	<p>LO4 (R012)</p> <p>Understand the factors to be considered when collecting and processing data and storing data/information</p> <p>Current relevant IT legislation, at time of delivery, its implications and applications 1, 2</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Digital Society</p> <p>Bias</p> <p>Intellectual property law</p>	<p>Module 9 looks at the laws that govern the use data and computer systems. This is an aspect that is always changing as the law tries to catch up with the development of technology. • The laws that are relevant to the use and storage of data. • The laws that are relevant to a digital society, both in the creation and use of computer systems and products. • How to ensure that the data we access on a variety of digital platforms is correct and free from any bias or reliability issues.</p>	<p>http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>
MODULE 9 – Legislation and data reliability Ethical issues	<p>LO4 (R012)</p> <p>Current relevant IT legislation, at time of delivery, its implications and applications 1, 2</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Ethics</p> <p>Morals</p> <p>Bias</p> <p>Legislation</p>	<p>It is important that learners understand the different moral and ethical issues associated with the collection, storage and use of data/information. Learners must be aware of the impact of these issues on organisations and individuals, understanding how these can be mitigated against. Learners split into groups with each group being given an ethical/moral issue relevant to the use of information technologies. The learner groups could then create a presentation that would be delivered to the class</p>	<p>https://bigdata.ukdataservice.ac.uk/media/604711/big-data-and-data-sharing_ethical-issues.pdf http://www.gdrc.org/info-design/4-ethics.html https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/ http://www.techrepublic.com/article/10-ethical-issues-confronting-it-managers/ http://conflict.lshrm.ac.uk/page_13.htm#Ethical_Introduction https://study.cardiffmet.ac.uk/AcSkills/Documents/Research/Research_Ethics_elesson/page_22.htm</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>
MODULE 9 – Legislation and data reliability Validity, reliability and bias	<p>LO4 (R012)</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Validity of information.</p> <p>Reliability of information.</p> <p>Bias in information.</p>	<p>The implications of validity, reliability and bias of data and information when collecting, processing and using internal or external data and information sources.</p>	<p>http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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MODULE 9 – Legislation and data reliability	<p>LO4 (R012)</p> <p>Understand the factors to be considered when collecting and processing data and storing data/information</p> <p>Current relevant IT legislation, at time of delivery, its implications and applications 1, 2</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Digital Society</p> <p>Bias</p> <p>Intellectual property law</p>	<p>Module 9 looks at the laws that govern the use data and computer systems. This is an aspect that is always changing as the law tries to catch up with the development of technology.</p> <p>The laws that are relevant to the use and storage of data.</p> <p>The laws that are relevant to a digital society, both in the creation and use of computer systems and products.</p> <p>How to ensure that the data we access on a variety of digital platforms is correct and free from any bias or reliability issues.</p>	<p>http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>
MODULE 9 – Legislation and data reliability Ethical issues	<p>LO4 (R012)</p> <p>Current relevant IT legislation, at time of delivery, its implications and applications 1, 2</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Ethics</p> <p>Morals</p> <p>Bias</p> <p>Legislation</p>	<p>It is important that learners understand the different moral and ethical issues associated with the collection, storage and use of data/information.</p> <p>Learners must be aware of the impact of these issues on organisations and individuals, understanding how these can be mitigated against.</p> <p>Learners split into groups with each group being given an ethical/moral issue relevant to the use of information technologies. The learner groups could then create a presentation that would be delivered to the class</p>	<p>https://bigdata.ukdataservice.ac.uk/media/604711/big-data-and-data-sharing_ethical-issues.pdf</p> <p>http://www.gdrc.org/info-design/4-ethics.html</p> <p>https://www.weforum.org/agenda/2016/10/top-10-ethical-issues-in-artificial-intelligence/</p> <p>http://www.techrepublic.com/article/10-ethical-issues-confronting-it-managers/</p> <p>http://conflict.lshtm.ac.uk/page_13.htm#Ethical_Introduction</p> <p>https://study.cardiffmet.ac.uk/AcSkills/Documents/Research/Research_Ethics_elesson/page_22.htm</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>



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<p>MODULE 9 – Legislation and data reliability</p> <p>Validity, reliability and bias</p>	<p>LO4 (R012)</p> <p>The importance of validity, reliability and bias when collecting and using data and information</p>	<p>Validity of information.</p> <p>Reliability of information.</p> <p>Bias in information.</p>	<p>The implications of validity, reliability and bias of data and information when collecting, processing and using internal or external data and information sources.</p>	<p>http://www.ocr.org.uk/qualifications/vocational-education-and-skills/cambridge-nationals-information-technologies-level-1-2-j808/</p>	<p>This will be set on a by need basis. In order to consolidate learning and fluency of subject specific language.</p>