



T-LEVELS
THE NEXT LEVEL QUALIFICATION

T Level resource improvement project

**Supporting holistic delivery: developing learning
activities to integrate core and occupational
specialism content**

Association of Colleges is working in partnership with the Education and Training Foundation to deliver this offer. This programme is funded by the Department for Education.

Session 1: Lesson plan

Learning objectives	The fundamental characteristics of data in relation to data storage, elements of infrastructure and associated technologies and cloud servers <u>Core knowledge and skills</u> R3.1 The fundamental characteristics of data: • storing data • cloud storage. <u>Occupational specialism: Digital infrastructure pathway</u> PO2: Explain, install, configure, test and manage both physical and virtual infrastructure K2.3 The elements of infrastructure and associated technologies K2.7 The advantages and limitations of self-hosted and cloud-hosted virtual servers <u>Skills development in Occupational specialism: Digital infrastructure pathway</u> S1.5 Conduct a security risk assessment in line with the risk management process for a system (for example, a device connected to a local area network or LAN)			
Timing	Learning activities	Resources/links	Formative assessment	Technical Qualification (TQ) specification coverage
5–10 minutes	Learning objectives Discuss the learning objectives set. Prior learning check Learners to write down their answers based on the quiz presented by	Quiz questions and answers on Session 1 - Quiz.pptx	Assessment of prior knowledge on data storage	

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	the tutor on PowerPoint. Answers will be presented at the end of quiz, which comprises 10 questions, followed by the answers on the last slide.			
20 minutes	Tutor-led Explain in general what data storages are. (5 minutes) Learner activity 1 Divide the class into small groups and discuss the following data storages, with answers to be written on the flipchart: (10 minutes) • SSD (solid state drive) • HDD (hard disk drive) • File servers • NAS (network-attached storage) • SAN (storage area network).	Information on PowerPoint Session 1.pptx, slides 4–8 Flipcharts and marker pen for group discussion Computers with internet access for research	Tutor questioning to check for understanding during delivery Self-assessment of responses to questions Learners work in groups to share their responses	<u>Core knowledge and skills</u> R3.1 The fundamental characteristics of data: • storing data. <u>Occupational specialism: Digital infrastructure pathway</u> PO2: Explain, install, configure, test and manage both physical and virtual infrastructure • K2.3 The elements of infrastructure and associated technologies

	For each of the above, learners must discuss the following: • explain why a computer system needs secondary storage • state the different types of physical/on-premises storage and describe their functional characteristics • compare and contrast. Each group to present their answers to the class. Each group to take note of anything they have missed in their discussion. (5 minutes)			
20 minutes	Tutor-led: Introduction to elements of infrastructure and technologies, with tutor leading an introduction and discussion exploring network	Information on PowerPoint Session 1.pptx, slides 10–17 Flipcharts and marker pen for group discussion	Tutor questioning to check for understanding during delivery	<u>Core knowledge and skills</u> R3.1 The fundamental characteristics of data: • storing data.

	devices, end user devices and storage solutions. (5 minutes) Learner activity 2: Working in groups, learners to create a presentation on one of the following topics and feed back to the class. Each group to be assigned a topic: • identify a range of network devices (for example, routers and switches) • identify a range of end user devices (for example, desktop, laptops and smart devices) • identify a range of storage devices (different to the ones given in learner activity 1). (15 minutes)	Computers with internet access for research Microsoft Office applications	Self-assessment of responses to questions Learners work in groups to share their responses	<u>Occupational specialism: Digital infrastructure pathway</u> PO2: Explain, install, configure, test and manage both physical and virtual infrastructure • K2.3 The elements of infrastructure and associated technologies
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20 minutes	Tutor-led Tutor to introduce and discuss examples of various types of cloud storage. (5 minutes) Learner activity 3 Learners to research and discuss in pairs the following cloud storages and include advantages and disadvantages for each one: • file storage • object storage • block storage • elastic/scalable cloud • cloud-based databases. (15 minutes)	Information on PowerPoint Session 1, slides 18–23 Computers with internet access for research Microsoft Office applications	Tutor questioning to check for understanding during delivery Self-assessment of responses to questions Learners work in pairs to share their responses Self-assessment of responses to questions	<u>Core knowledge and skills:</u> R3.1 The fundamental characteristics of data: • cloud storage. <u>Occupational specialism: Digital infrastructure pathway</u> PO2: Explain, install, configure, test and manage both physical and virtual infrastructure • K2.7 The advantages and limitations of self-hosted and cloud-hosted virtual servers
20 minutes	Tutor-led Tutor introduces learners to servers with a comparison of physical versus virtual versus cloud-hosted, with considerations of the advantages and	Information on PowerPoint Session 1.pptx, slides 24–25 Computers with internet access for research Microsoft Office applications	Tutor questioning to check for understanding during delivery Self-assessment of responses to questions	<u>Core knowledge and skills:</u> R3.1 The fundamental characteristics of data: • cloud storage. <u>Occupational specialism: Digital</u>

	disadvantages of each one. (5 minutes) Learner activity 4: Learners to work independently to research costings for cloud-hosted servers and a case study comparing cloud with physical. (15 minutes) Skills development activity: Research and apply the risk management process, which includes the following: • identify possible risks in the system • calculate the probability and impact of the identified risk • analyse and prioritise based on level of risk to system.			<u>infrastructure pathway</u> PO2: Explain, install, configure, test and manage both physical and virtual infrastructure • K2.7 The advantages and limitations of self-hosted and cloud-hosted virtual servers <u>Skills development in Occupational specialism: Digital infrastructure pathway</u> S1.5 Conduct a security risk assessment in line with the risk management process for a system (for example, a device connected to a local area network or LAN)
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5–10 minutes	Summary and knowledge check.	Application of key knowledge to applied situations	Self- and teacher assessment	
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