

DIGITAL TECHNOLOGIES: DESIGN A DIGITAL INFRASTRUCTURE SYSTEM

Design a digital infrastructure system refers to the assembly and management of a specified system.

Designing a digital infrastructure system requires particular techniques to be used to select, assemble, configure and install components for a specified purpose. Components are hardware and software.

When designing an infrastructure system students will employ standard procedures for installing and configuring hardware and peripherals (eg, systematic use of procedures specified in manufacturer OEM manuals, antistatic procedures, electrical safety procedures, and relevant OSH regulations) and standard procedures for installing and configuring software (eg, standard best practice and procedures specified in manuals, installation guides, installation programs, and system documentation including Help facilities).

Initially students learn to assemble and service a personal computer system. Students progress to assembling, configuring and managing local and wide area networks.

	LEVEL 6	LEVEL 7	LEVEL 8
LO	<i>Select components for a single computer system for a specified purpose</i>	<i>Select components and parameters for a local area network for a specified purpose</i>	<i>Select components and topology for a wide area network for a specified purpose</i>
TEACHER GUIDANCE	<p>To support students to develop skills in constructing a single computer system at level 6, teachers could:</p> <ul style="list-style-type: none"> • Ensure students can identify components of a single computer system. • Provide an opportunity for students to select components [eg, memory capacity, graphics cards, peripherals] that have sufficient capacity to meet the needs of specified software. • Guide students to identify and resolve installation and configuration faults related to hardware and software. 	<p>To support students to develop skills in constructing and managing a local area network (LAN) at level 7, teachers could:</p> <ul style="list-style-type: none"> • Ensure students can identify components of a LAN. • Ensure students understand and follow administrative procedures to manage a LAN. • Provide students with an opportunity to undertake testing procedures through the use of: hardware identification tools, system software identification tools and stand alone programs. • Provide an opportunity for students to select network components [eg, LAN speed, routers/switches] that have sufficient capacity for a specified purpose [eg, file sharing, file storage, shared services]. • Guide students to identify and resolve installation and configuration faults related to hardware, network architecture and software. 	<p>To support students to develop skills in constructing and managing a wide area network (WAN) at level 8, teachers could:</p> <ul style="list-style-type: none"> • Ensure students can identify components of a WAN. • Ensure students understand and follow administrative procedures to manage a WAN. • Provide an opportunity for students to estimate the capacity of a design for a network of computers and their access to a Wide Area Network [eg, estimate how many simultaneous streaming video feeds a network could support, or estimate the number of minutes of music that could be stored on a file system]. • Guide students to identify and resolve installation and configuration faults related to hardware and network architecture.
INDICATORS	<p>Students can:</p> <ul style="list-style-type: none"> • show accuracy and independence in following standard procedures for installing and configuring hardware, software and peripherals of a personal computer system • show accuracy and independence in diagnosing and troubleshooting to identify and resolve given installation and configuration faults in a system. • diagnose and troubleshooting to identify and resolve given installation and configuration faults in a system, in a manner that is economical in time, effort and resources. 	<p>Students can:</p> <ul style="list-style-type: none"> • follow standard administrative procedures to manage a LAN, showing organisation, confidence, accuracy and independence • diagnose and troubleshooting a LAN to identify and resolve given installation and configuration faults in a manner that is economical in time, effort and resources showing organisation, confidence, accuracy and independence. 	<p>Students can:</p> <ul style="list-style-type: none"> • follow standard administrative procedures to manage a WAN, showing organisation, accuracy and independence • diagnose and troubleshooting a WAN to identify and resolve given installation and configuration faults in a manner that is economical in time, effort and resources, and shows organisation, accuracy and independence.
AS	<p>AS91073 Digital Technologies 1.51 <i>Implement basic procedures servicing a personal computer system</i></p>	<p>As91370 Digital Technologies 2.51 <i>Implement procedures for administering a local area network</i></p>	<p>AS91642 Digital Technologies 3.51 <i>Implement procedures for administering a wide area network</i></p>
	Level 1 Digital Technologies standards & assessment resources	Level 2 Digital Technologies standards & assessment resources	Level 3 Technology achievement standards & assessment resources DRAFT