Achievement Standard

Subject Reference	Digital Technologies 2.6				
Title	Use advanced techniques to develop a network				
Level	2	**Credits**	4	**Assessment**	Internal
Subfield	Technology				
Domain	Digital Technologies				
Status	XX	**Status date**	XX		
Planned review date	XX	**Date version published**	XX		

This achievement standard involves using advanced techniques to develop a network.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
Use advanced techniques to develop a network.	Use advanced techniques to develop an informed network.	Use advanced techniques to develop a refined network.

Explanatory Notes

1 This achievement standard is derived from the Technology learning area in *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the material in the *Teaching and Learning Guide for Technology*, Ministry of Education at http://seniorsecondary.tki.org.nz.

Further information can be found at http://www.technology.tki.org.nz/.

Appropriate reference information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools,* Ministry of Education at http://technology.tki.org.nz/Technology-in-the-NZC/Safety-in-Technology-Education-revised-2017, and the Health and Safety at Work Act 2015.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* outcomes to which this standard relates, see the Papa Whakaako for the relevant learning area.

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2 *Use advanced techniques to develop a network* involves:
- using appropriate tools, procedures and protocols to install and configure hardware, software and peripherals
- undertaking a range of appropriate testing procedures, diagnosing and troubleshooting to identify and resolve given setup and configuration errors
- investigating the parts and components (hardware and software) to be used
- explaining relevant implications.

Use advanced techniques to develop an informed network involves:
- using information gained from testing procedures, diagnosing and troubleshooting to inform further development and improve the quality of the specified network
- explaining the basic purpose and function of the parts and components (hardware and software)
- addressing relevant implications.

Use advanced techniques to develop a refined network involves:
- accurately using tools, procedures and protocols to ensure the outcome meets end-user requirements
- justifying the choice of parts and components (hardware and software).

3 Examples of relevant implications include:
- social
- cultural
- legal
- ethical
- intellectual property
- privacy
- accessibility
- sustainability
- usability
- functionality
- aesthetics
- sustainability and future proofing
- end user requirements
- health and safety.

4 Examples of hardware include:
- NIC's
- hubs/switches
- routers
- microprocessor
- integrated circuits
- peripherals.

5 Examples of *advanced techniques* include:
- configuring IP addresses, SMTP mail exchangers, name servers, pointers for reverse DNS lookups.

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- configuring the network number or routing prefix and the rest field or host identifier
- configuring appropriate protocols within application and transport layers within the Internet protocol suite.

6 Examples of protocols include:
- TCP/IP, (subnetting and default gateways)
- I2C, NTP, DHCP, SMB, DNS.

7 *A network* refers to the sharing of wireless, peripherals (external hard drives), microprocessor, integrated circuits, printers, Internet gateway/firewall.

8 Conditions of Assessment related to this achievement standard can be found at http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards.

Replacement Information

Quality Assurance

1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.

2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference 0233

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