Prep to Year 2 standard elaborations — Australian Curriculum: Digital Technologies

Purpose

The standard elaborations (SEs) provide additional clarity when using the Australian Curriculum achievement standard to make judgments on a five-point scale. They can be used as a tool for:

- making consistent and comparable judgments about the evidence of learning in a folio of student work
- developing task-specific standards for individual assessment tasks.

Structure

The SEs are developed using the **Australian Curriculum achievement standard**. The Digital Technologies achievement standard describes the learning expected of students at each band. Teachers use the achievement standard during and at the end of a period of teaching to make on-balance judgments about the quality of learning students demonstrate.

In Queensland the achievement standard represents the **working with (WW) standard** — a sound level of knowledge and understanding of the content, and application of skills. The SEs are presented in a **matrix**. The discernible differences or degrees of quality associated with the five-point scale are highlighted to identify the characteristics of student work on which teacher judgments are made. Terms are described in the Notes section following the matrix.

Prep* Year Australian Curriculum: Digital Technologies achievement standard
By the end of Year 2, students identify how common digital systems (hardware and software) are used to meet specific purposes. They use digital systems to represent simple patterns in data in different ways. Students design solutions to simple problems using a sequence of steps and decisions. They collect familiar data and display them to convey meaning. They create and organise ideas and information using information systems, and share information in safe online environments.

Source	Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Version 8 Digital Technologies for Foundation–10*, www.australiancurriculum.edu.au/f-10-curriculum/technologies/digital-technologies

***** Prep in Queensland is the Foundation Year of the Australian Curriculum and refers to the year before Year 1. Children beginning Prep in January must be five years of age by 30 June.

Prep to Year 2 Digital Technologies standard elaborations

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
		The folio of a student's work has the following characteristics:				
Knowledge and understanding	**Digital systems**	identification and clear description of how common digital systems (hardware and software) are used to meet specific purposes	identification and description of how common digital systems (hardware and software) are used to meet specific purposes	identification of how common digital systems (hardware and software) are used to meet specific purposes	guided identification of how common digital systems (hardware and software) are used to meet purposes	directed identification of how common digital systems (hardware and software) are used
	Representation of data	use of digital systems to clearly and effectively represent simple patterns in data in different ways	use of digital systems to effectively represent simple patterns in data in different ways	use of digital systems to represent simple patterns in data in different ways	guided use of digital systems to represent simple patterns in data in different ways	directed use of digital systems to represent simple patterns in data

		Applying (AP)	Making connections (MC)	Working with (WW)	Exploring (EX)	Becoming aware (BA)
Processes and production skills	Collecting, managing and analysing data	comprehensive collection of familiar data and display of the data to clearly and effectively convey meaning	detailed collection of familiar data and display of the data to effectively convey meaning	collection of familiar data and display of the data to convey meaning	guided collection of familiar data and display of the data to convey aspects of meaning	directed collection of familiar data and display of the data
	Investigating and defining; generating and designing	considered design of solutions to simple problems using a sequence of steps and decisions	informed design of solutions to simple problems using a sequence of steps and decisions	design of solutions to simple problems using a sequence of steps and decisions	guided design of solutions to simple problems using a sequence of steps and decisions	directed design of solutions to simple problems using steps
	Collaborating and managing	considered creation and organisation of ideas and information using information systems	effective creation and organisation of ideas and information using information systems	creation and organisation of ideas and information using information systems	guided creation and organisation of ideas and information using aspects of information systems	directed creation and organisation of ideas and information using aspects of information systems
		clear and effective sharing of information in safe online environments	effective sharing of information in safe online environments	sharing of information in safe online environments	guided sharing of information in safe online environments	directed sharing of information in safe online environments

Key	shading emphasises the qualities that discriminate between the AP–BA descriptors
AP	applies the curriculum content; demonstrates a thorough understanding of the required knowledge; demonstrates a high level of skill that can be transferred to new situations
MC	makes connections using the curriculum content; demonstrates a clear understanding of the required knowledge; applies a high level of skill in situations familiar to them, and is beginning to transfer skills to new situations
WW	works with the curriculum content; demonstrates understanding of the required knowledge; applies skills in situations familiar to them
EX	exploring the curriculum content; demonstrates understanding of aspects of the required knowledge; uses a varying level of skills in situations familiar to them
BA	becoming aware of the curriculum content; demonstrates a basic understanding of aspects of required knowledge; beginning to use skills in situations familiar to them

Notes

Australian Curriculum common dimensions

The SEs describe the qualities of achievement in the two dimensions common to all Australian Curriculum learning area achievement standards — understanding and skills.

Dimension	Description
understanding	the concepts underpinning and connecting knowledge in a learning area, related to a student's ability to appropriately select and apply knowledge to solve problems in that learning area
skills	the specific techniques, strategies and processes in a learning area

Terms used in Prep to Year 2 Digital Technologies SEs

These terms clarify the descriptors in the Prep to Year 2 Digital Technologies SEs. Definitions are drawn from the ACARA Australian Curriculum Technologies glossary (www.australiancurriculum.edu.au/f-10-curriculum/technologies/glossary) and from other sources to ensure consistent understanding.

Term	Description
algorithm	the step-by-step procedures required to solve a problem; see also computational thinking
apply; application	use, utilise or employ in a particular situation
aspects	particular parts or features
clear; clearly	easy to perceive, understand, or interpret; without ambiguity
collaborating and managing (technologies process)	creating and communicating information, especially online, by creating websites, and interacting safely using appropriate technical and social protocols; in Prep to Year 2, students create and organise ideas and information using information systems independently and with others, and share these with known people in safe online environments
collecting, managing and analysing data (processes and productions skills strand)	involves the nature and properties of data, how they are collected and interpreted using a range of digital systems and peripheral devices and interpreting data when creating information; in Prep to Year 2, students collect, explore and sort data, and use digital systems to present the data creatively
comprehensive	detailed and thorough, including all that is relevant
computational thinking	a problem-solving method that involves various techniques and strategies that can be implemented by digital systems; techniques and strategies include organising data logically, breaking down problems into parts (decomposing), defining abstract concepts, and designing and using algorithms, patterns and models
considered	thought about deliberately with a purpose; in Technologies, *considered* includes informed

Term	Description
creation; create; creating	putting elements together to form a coherent or functional whole; reorganising elements into a new pattern or structure through designing, planning, or implementing; *creating* requires users to put parts together in a new way or synthesise parts into something new or different to form a new product; in Technologies, it involves bringing a solution into existence through the process of investigating and defining, generating and designing, producing and implementing, evaluating, and collaborating and managing
critique; critiquing	a careful judgement in which opinions are given about the positive and negative aspects of something; considers good as well as bad performances, the individual parts, relationships of the individual parts and the overall performance; see also evaluating
data	in Digital Technologies, *data* refers to the discrete representation of information using number codes; may include characters (alphabetic letters, numbers, symbols), images (still and moving), sounds and instructions that can be manipulated, stored and communicated by digital systems
decompose; decomposing	to separate a complex problem into parts to allow it to be more easily understood; see also computational thinking
description; describe	give an account of characteristics or features
detailed	meticulous; including many of the parts
digital solution; digital solutions	the result (or output) of transforming data into information or action using digital systems, skills, techniques and processes to meet a need or opportunity; in Digital Technologies: • students create solutions that will use data, require interactions with users and within systems, and will have impacts on people, the economy and environments • solutions may be developed using combinations of readily available hardware and software applications, and/or specific instructions provided through programming (e.g. instructions for a robot, an adventure game, products featuring interactive multimedia including digital stories, animations and websites) in Prep to Year 2, students should have opportunities to create a range of digital solutions through guided play and integrated learning, such as using robotic toys to navigate a map or recording science data with software applications

Term	Description
digital systems (knowledge and understanding strand)	digital hardware and software components (internal and external) used to transform data into digital solutions; when digital systems are connected they form a network; for example: • a smartphone is a digital system that has software (apps, an operating system), input components (e.g. touch screen, keyboard, camera and microphone), output components (e.g. screen and speakers), memory components (e.g. silicon chips, solid state drives), communication components (e.g. SIM card, wi-fi, bluetooth or mobile network antennas), and a processor made up of one or more silicon chips • a desktop computer with specific software and hardware components for dairy farming; the computer is connected via cables to milking equipment and via wi-fi to sensors that read tags on the cows; through these hardware components the software records how much milk each cow provides; such systems can also algorithmically control attaching milking equipment to each cow, providing feed and opening gates
directed	following the instructions of the facilitator
effective	meeting the assigned purpose in a considered and/or efficient manner to produce a desired or intended result
evaluate; evaluating (technologies process)	examine and judge the merit or significance of something; in Technologies, *evaluate* means measures performance against established criteria; estimates the nature, quality, ability, extent or significance to make a judgment determining the value; see also critiquing; in Digital Technologies, *evaluating* includes: • solutions that have been developed by students • examining how well existing information systems meet different needs in Prep to Year 2, students: explore how people safely use common information systems to meet information, communication and recreation needs
generating and designing (technologies process)	states what is required of the solution
guided; guidance	visual and/or verbal prompts to facilitate or support independent action
identification; identify	establish or indicate who or what someone or something is
information systems	a combination of digital hardware and software components (digital systems), data, processes and people that interact to create, control and communicate information
informed	having relevant knowledge; being conversant with the topic; in Technologies, *informed* refers to the underpinning knowledge, understanding and skills of processes and production skills when solving problems and creating solutions

Term	Description
investigating and defining (technologies process)	describes the problem and/or opportunity and states what is required of the solution; in Prep to Year 2, students follow, describe and represent a sequence of steps and decisions (algorithms) needed to solve simple problems
processes and production skills	the skills needed to create digital solutions; see technologies process
producing and implementing (technologies process)	actively realising (making) digital solutions using appropriate resources and means of production
product; products	one of the outputs of technologies process, the end result of processes and production; *products* are the tangible end results of natural, human, mechanical, manufacturing, electronic or digital processes to meet a need or want
proficient	competent or skilled in doing or using something; in Digital Technologies, *proficient* means consistently in all digital solutions
representation of data (knowledge and understanding strand)	how data are represented and structured symbolically for use by digital systems; in Prep to Year 2, students recognise and explore patterns in data and represent data as pictures, symbols and diagrams
statement	a sentence or assertion
technologies processes (processes and productions skills strand)	the processes that allow the creation of a solution for an audience (end user, client or consumer) and involve the purposeful use of technologies and other resources and appropriate consideration of impact when creating and using solutions; typically require critical and creative thinking, such as computational, design or systems thinking; in Technologies, the *technologies processes* involve: • investigating and defining • generating and designing • producing and implementing • evaluating • collaborating and managing
technologies	the materials, data, systems, components, tools and equipment used to create solutions for identified needs and opportunities, and the knowledge, understanding and skills used by people involved in the selection and use of these
use	to operate or put into effect
user	one who uses a computer, computer program, or online service