Department of Education

ICT skills: A quick reference guide

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Introduction

To successfully complete NAPLAN tests online, students need to be confident and capable users of information sand communications technology (ICT). The key ICT skills that students require to successfully participate in learning activities, including online assessment, are detailed below. Each is aligned to the Australian Curriculum.

ICT should be purposeful and linked to curriculum concepts as opposed to separate unrelated activities. To achieve this, incorporate ICT skills into day-to-day activities and lessons. For example, if a student is constructing a text, look for opportunities where ICT can be used within the writing process.

Consider developing student ICT skills in all year levels to ensure students have a positive online assessment experience. Ideally, model best practice with students, working one-on-one or in groups.

ICT skills

NAPLAN Online requires students to confidently use a computer or device in at least seven ways.

1. **Locate and select an answer from a list**
   Tap or move a mouse so the cursor is over the correct answer and click/tap once on the answer icon.
   Select one or multiple answers from a list.

2. **Type an answer in a text box**
   Tap or click to set the cursor and use the keypad or keyboard to type an answer.
   Sequence answers in a list and edit answers.

3. **Read the screen and navigate webpages**
   Navigate webpages using scroll bars, next and back arrows, and buttons and icons.
   Open and close items, and zoom in and out.
   Use an on-screen timer to judge progress in a test.
   Know how to flag a question and read the progress map and return to unanswered questions.

4. **Manipulate objects on screen**
   Drag and drop words and objects or a slider, and rotate and manipulate items on screen.
   Draw straight lines to answers.
   Use an online calculator, protractor, magnifier and ruler.
   Use a split screen to scroll or toggle back and forth.
   Open and close, and resize and move objects and tools.

5. **Read and comprehend digital texts**
   Read digital texts and track words without losing their place or becoming distracted.
   Minimise the reading text to answer questions and toggle back to read the text.

6. **Plan and compose text using word processing**
   Plan digitally using concept maps and lists, or brainstorming tools.
   Know and use all the keys on a keyboard including letters, numbers, characters and punctuation marks.
   Know how to word process, for example:
   - use punctuation when composing digital text — use the space, comma, full-stop, question-mark and quotation-mark keys; know how to **bold**, *italic* and <u>underline</u>; know how to capitalise letters
   - use the delete, backspace and enter keys, and move words and phrases by selecting, dragging and dropping text
   - edit and improve writing by changing the order of a sentence or paragraph by dragging and dropping text, copying and pasting, replacing words or phrases, and adding speech.

7. **Listen using a headset**
   Know how to open and close audio files, listen carefully to an audio file and type spoken spelling words.
   Replay an audio file to check and edit spelling.

ICT skills in the Australian Curriculum

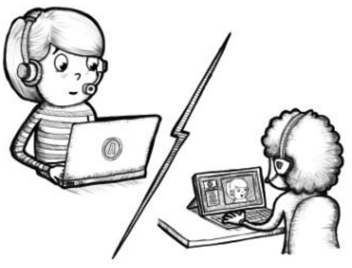
The Australian Curriculum provides many opportunities to include the identified ICT skills. Creating meaningful classroom experiences will help foster these skills within the context of learning without having to resort to add-on lessons and activities.

The general capability of ICT is embedded in learning areas throughout the Australian Curriculum. Illustrated below are some of the ways to incorporate ICT skills into curriculum plans for English, Mathematics and Science. A quick reference to a small sample of relevant content descriptors is also provided. The learning activities should be enacted through the delivery of the Australian Curriculum and documented within the three levels of the whole school curriculum, assessment and reporting plan.

English

The learning area of English refers to many opportunities for the application of ICT skills in meaningful ways. For example, in the Language strand, when reading digital texts with students, teachers could demonstrate how signal structures help guide readers.

Reading extended pieces of digital text, such as eBooks and online articles, provides experiences where students use the same level of concentration as printed texts.



Provide opportunities for students to listen to audio recordings of digital texts through headsets. Record the class spelling list and ask students to spell words after listening to the audio recordings.

Develop students' word processing skills when they focus on the literacy skill of writing. Look for ways to provide students with such word processing skills as copy, cut-and-paste, and select-and-move-text. Model the use of subheadings as place holders for ideas or for composing and drafting initial paragraphs or story structures. Create opportunities to write online, such as making diary entries and contributing to online discussions, and constructing and sharing information and imaginative texts.

The table below highlights examples of content descriptors that embed the use of three ICT skills: reading digital texts; planning, composing and creating texts using word processing programs; and listening using headsets.

	Writing digital texts	Reading and listening to digital texts
Year 1	Recreate texts imaginatively using drawing, writing, performance and digital forms of communication (ACELT1586). Create short imaginative and informative texts that show emerging use of appropriate text structure, sentence-level grammar, word choice, spelling, punctuation and appropriate multimodal elements, for example illustrations and diagrams (ACELY 1661) Construct texts that incorporate supporting images, using software including word processing programs (ACELY1664).	Understand concepts about print and screen, including how different types of texts are organised using page numbering, tables of content, headings and titles, navigation buttons, bars and links (ACELA1450). Know some features of text organisation including page and screen layouts, alphabetical order, and different types of diagrams, for example timelines (ACELA1466). Recreate texts imaginatively using drawing, writing, performance and digital forms of communication (ACELT1586).
Year 2	Construct texts featuring print, visual and audio elements using software, including word processing programs (ACELY1674).	Know some features of text organisation including page and screen layouts, alphabetical order, and different types of diagrams, for example timelines (ACELA1466). This is year 5 content description.
Year 3	Plan, draft and publish imaginative, informative and persuasive texts demonstrating increasing control over text structures and language features and selecting print, and multimodal elements appropriate to the audience and purpose (ACELY1682) Use software including word processing programs with growing speed and efficiency to construct and edit texts featuring visual, print and audio elements (ACELY1685).	Identify the features of online texts that enhance navigation (ACELA1790).
Year 4	Use a range of software including word processing programs to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1697).	Identify features of online texts that enhance readability, including text, navigation, links, graphics and layout (ACELA1793).
Year 5	Plan, draft and publish imaginative, informative and persuasive print and multimodal texts, choosing text structures, language features,	Investigate how the organisation of texts into chapters, headings, subheadings, home pages and subpages for online texts and according to

	Writing digital texts	Reading and listening to digital texts
	images and sound appropriate to purpose and audience (ACELY1704) Use a range of software including word processing programs with fluency to construct, edit and publish written text, and select, edit and place visual, print and audio elements (ACELY1707).	chronology or topic, can be used to predict content and assist navigation (ACELA1797). Explain sequences of images in print texts and compare these to the ways hyperlinked digital texts are organised, explaining their effect on viewers' interpretations (ACELA1511).
Year 6	Plan, draft and publish imaginative, informative and persuasive texts, choosing and experimenting with text structures, language features, images and digital resources appropriate to purpose and audience (ACELY 1714) Use a range of software, including word processing programs, learning new functions as required to create texts (ACELY1717).	Use comprehension strategies to interpret and analyse information and ideas, comparing content from a variety of textual sources including media and digital texts (ACELY1713). Compare texts including media texts that represent ideas and events in different ways, explaining the effects of the different approaches (ACELY1708)
Year 7	Plan, draft and publish imaginative, informative and persuasive texts, selecting aspects of subject matter and particular language, visual, and audio features to convey information and ideas (ACELY1725) Use a range of software including word processing programs to confidently create, edit, and publish written and multimodal texts (ACELY1728). Understand the way language evolves to reflect a changing world, particularly in response to the use of new technology for presenting texts and communicating (ACELA1528).	Understand that the coherence of more complex texts relies on devices that signal text structure and guide readers, for example overviews, initial and concluding paragraphs and topic sentences, indexes or site maps or breadcrumb trails for online texts (ACELA1763) Analyse and explain the effect of technological innovations on texts, particularly media texts (ACELY1765)
Year 8	Create imaginative, informative and persuasive texts that raise issues, report events and advance opinions, using deliberate language and textual choices, and including digital elements as appropriate (ACELY1736). Use a range of software including word processing programs to create, edit and publish texts imaginatively (ACELY1738).	Analyse and explain how language has evolved over time and how technology and the media have influenced language use and forms of communication (ACELY1729).

	Writing digital texts	Reading and listening to digital texts
Year 9	Experiment with the ways that language features, image and sound can be adapted in literary texts, for example the effects of stereotypical characters and settings, the playfulness of humour and pun and the use of hyperlink (ACELT1638) Create imaginative, informative and persuasive texts that present a point of view and advance or illustrate arguments, including texts that integrate visual, print and/or audio features (ACELY1746). Use a range of software, including word processing programs, flexibly and imaginatively to publish texts (ACELY1748).	Analyse how the construction and interpretation of texts, including media texts, can be influenced by cultural perspectives and other texts (ACELY1739).

Mathematics

In the Australian Curriculum learning area of Mathematics, there are numerous references to the use of digital technologies during student investigations, problem solving and demonstration of understandings.

ICT skills such as moving objects on a screen could be demonstrated when using applications and learning objects to investigate the properties of common shapes, or to create symmetrical patterns or pictures. The use of digital tools, such as an online calculator and protractor, could be incorporated into the development of number, patterns and algebra understandings, giving teachers a perfect opportunity to explicitly show how to effectively use digital tools. Provide opportunities for students to construct, interpret and explore graphs, tables, and number sequences using digital technologies.

The learning area of Mathematics offers many opportunities for teachers to use ICT skills such as navigating webpages, dragging and dropping, manipulating objects on screen, using digital tools such as online calculators, and typing numbers into tables. The table below highlights a sample of relevant content descriptors and some of the ICT general capabilities.

	Number and Algebra	Measurement and Geometry Statistics and probability
Year 1	*Generate solutions to challenges and learning area tasks* Use ICT as a creative tool to generate simple solutions, modifications or data representations for personal or school purposes.	
Year 2		Describe and draw two-dimensional shapes, with and without digital technologies (ACMMG042). Investigate the effect of one-step slides and flips,

	Number and Algebra	Measurement and Geometry Statistics and probability
		with and without digital technologies (ACMMG045).
Year 3	Represent and solve problems involving multiplication using efficient mental and written strategies, and appropriate digital technologies (ACMNA057).	Collect data, organise into categories and create displays using lists, tables, picture graphs and simple column graphs, with and without the use of digital technologies (ACMSP069).
Year 4	Develop efficient mental and written strategies, and use appropriate digital technologies for multiplication and for division where there is no remainder (ACMNA076). Solve problems involving purchases and the calculation of change to the nearest five cents, with and without the use of digital technologies (ACMNA080).	Compare and describe two-dimensional shapes that result from combining and splitting common shapes, with and without the use of digital technologies (ACMMG088). Create symmetrical patterns, pictures and shapes, with and without the use of digital technologies (ACMMG091). Construct suitable data displays, with and without the use of digital technologies, from given or collected data. Include tables, column graphs and picture graphs where one picture can represent many data values (ACMSP096).
Year 5	Solve problems involving multiplication of large numbers by one- or two-digit numbers using efficient mental and written strategies, and appropriate digital technologies (ACMNA100). Use efficient mental and written strategies, and apply appropriate digital technologies to solve problems (ACMNA291).	Construct displays, including column graphs, dot plots and tables, appropriate for data type, with and without the use of digital technologies (ACMSP119).
Year 6	Select and apply efficient mental and written strategies, and appropriate digital technologies to solve problems involving all four operations with whole numbers (ACMNA123). Find a simple fraction of a quantity where the result is a whole number, with and without the use of digital technologies (ACMNA127). Add and subtract decimals, with and without the use of digital technologies, and use estimation and rounding to check the reasonableness of answers (ACMNA128). Multiply decimals by whole numbers and perform divisions by non-zero whole numbers where the	Investigate combinations of translations, reflections and rotations, with and without the use of digital technologies (ACMMG142). Investigate, with and without digital technologies, angles on a straight line, angles at a point and vertically opposite angles. Use results to find unknown angles (ACMMG141). Conduct chance experiments with small and large numbers of trials, using appropriate digital technologies (ACMSP145). Interpret secondary data presented in digital media and elsewhere (ACMSP148).

	Number and Algebra	Measurement and Geometry Statistics and probability
	results are terminating decimals, with and without the use of digital technologies (ACMNA129). Investigate and calculate percentage discounts of 10%, 25% and 50% on sale items, with and without the use of digital technologies (ACMNA132).	
Year 7	Multiply and divide fractions and decimals using efficient written strategies and digital technologies (ACMNA154). Express one quantity as a fraction of another, with and without the use of digital technologies (ACMNA155). Find percentages of quantities and express one quantity as a percentage of another, with and without the use of digital technologies. (ACMNA158). Investigate and calculate *best buys*, with and without the use of digital technologies (ACMNA174).	
Year 8	Carry out the four operations with rational numbers and integers, using efficient mental and written strategies, and appropriate digital technologies (ACMNA183). Solve problems involving the use of percentages, including percentage increases and decreases, with and without the use of digital technologies (ACMNA187). Solve a range of problems involving rates and ratios, with and without the use of digital technologies (ACMNA188). Solve problems involving profit and loss, with and without the use of digital technologies (ACMNA 189). Plot linear relationships on the Cartesian plane, with and without the use of digital technologies (ACMNA193).	*Generate solutions to challenges and learning area tasks* Create and modify simple digital solutions, creative outputs or data representation/ transformation for particular purposes.
Year 9	Find the distance between two points located on	Investigate reports of surveys in digital media and

	Number and Algebra	Measurement and Geometry Statistics and probability
	the Cartesian plane using a range of strategies, including graphing software (ACMNA214). Find the midpoint and gradient of a line segment (interval) on the Cartesian plane using a range of strategies, including graphing software (ACMNA294). Graph simple non-linear relations with and without the use of digital technologies, and solve simple related equations (ACMNA296).	elsewhere for information on how data were obtained to estimate population means and medians (ACMSP227).

Science

The Science Inquiry Skills strand develops student ICT skills through the use of digital technologies to collect and record observations, measure, create representation of data, and communicate their ideas, explanations and processes using multimodal texts. Through these activities, develop students' word processing skills, including the skill of composing information texts such as reports, explanations and findings. Take advantage of the teachable moments and incidental learning that is created in science lessons to reinforce other ICT skills such as website navigation, interacting with digital learning objects, and reading and comprehending digital multimodal texts.

The learning area of Science provides opportunities for further use of the ICT skills using online tools, recording observations into tables and graphs, reading online, and writing using word processing skills.

	Science Inquiry Skills
Year 1	Use informal measurements to collect and record observations, using digital technologies as appropriate (ACSIS026).
Year 2	Use informal measurements to collect and record observations, using digital technologies as appropriate (ACSIS039).
Year 3	Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSIS055).
Year 4	Consider the elements of fair tests and use formal measurements and digital technologies as appropriate, to make and record observations accurately (ACSIS066).
Year 5	Decide variables to be changed and measured in fair tests, and observe measure and record data with accuracy, using digital technologies as appropriate (ACSIS087). Construct and use a range of representations, including tables and graphs, to represent and describe

	Science Inquiry Skills
	observations, patterns or relationships in data, using digital technologies as appropriate (ACSIS090). Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS093).
Year 6	Decide variables to be changed and measured in fair tests and observe, measure and record data with accuracy, using digital technologies as appropriate (ACSIS104). Construct and use a range of representations, including tables and graphs, to represent and describe observations, patterns or relationships in data, using digital technologies as appropriate (ACSIS107). Communicate ideas, explanations and processes using scientific representations in a variety of ways, including multi-modal texts (ACSIS110).
Year 7	Measure and control variables, select equipment appropriate to the task, and collect data with accuracy (ACSIS126). Construct and use a range of representations, including graphs, keys and models to represent and analyse patterns or relationships in data, using digital technologies as appropriate (ACSIS129). Communicate ideas, findings and evidence-based solutions to problems, using scientific language and representations, using digital technologies as appropriate (ACSIS133).
Year 8	Construct and use a range of representations, including graphs, keys and models, to represent and analyse patterns or relationships in data, using digital technologies as appropriate (ACSIS144). Communicate ideas, findings and evidence-based solutions to problems using scientific language and representations, using digital technologies as appropriate (ACSIS148).
Year 9	Select and use appropriate equipment including digital technologies to collect and record data systematically and accurately (ACSIS166).

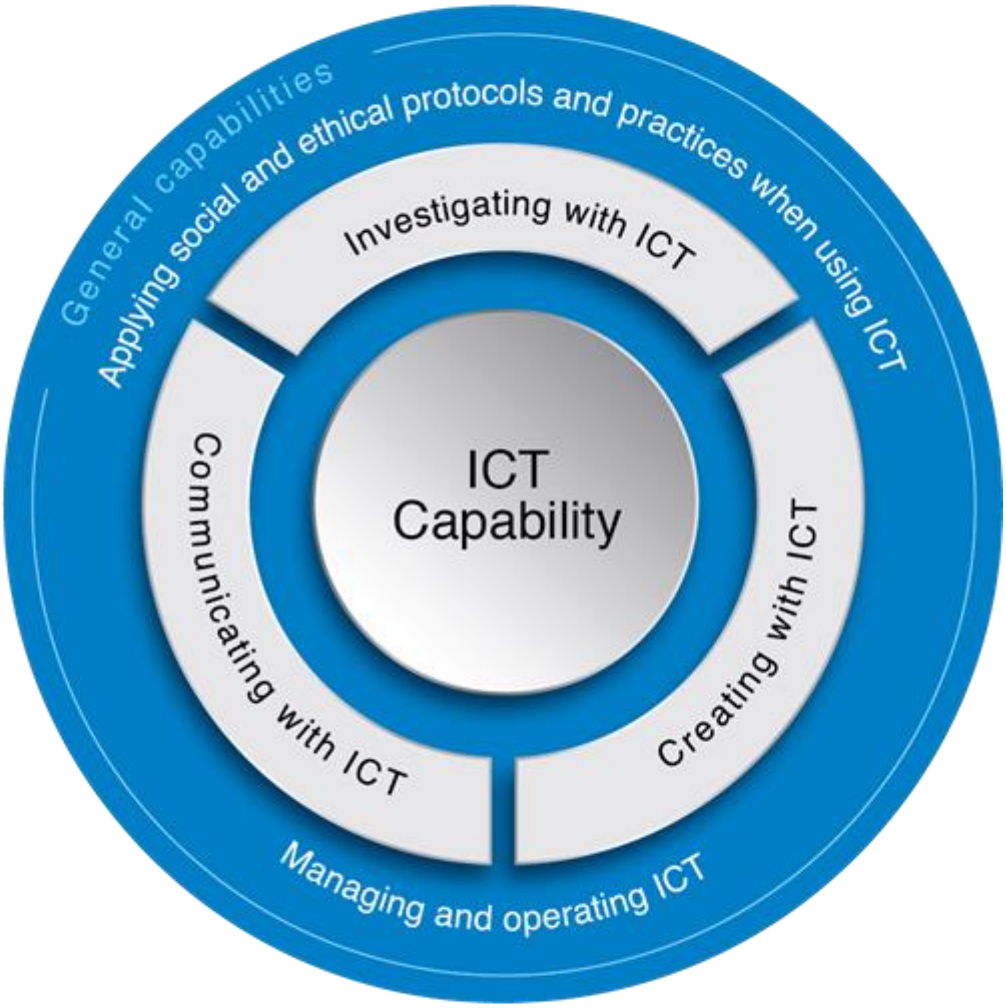
Other Learning Areas

Through the implementation of the Australian Curriculum, students are provided with numerous opportunities to engage with digital and virtual technologies. The learning activities should be documented within the three levels of the whole school curriculum, assessment and reporting plan. Such opportunities assist to develop ICT skills in reading and writing digital text, navigating webpages, and using headsets.

Providing multiple opportunities allows students to develop the seven skills required for online assessments. Through these opportunities students use interactive multimedia platforms, communication and editing software, and virtual tools and environments, to research, design, create, analyse information, evaluate ideas, communicate, and collaborate online.

Students explore the nature of ICT and the implications for establishing and managing relationships in the twenty-first century. Teachers who are embedding ICT throughout all learning areas are providing opportunities for students to experience digital environments that support the acquisition of the seven skills for online assessments.

The key ideas for ICT Capability are organised into five interrelated elements in the learning continuum:



[General Capabilities- Information and Communication (ICT) Capability- learning continuum]