

INFORMATION AND COMMUNICATIONS TECHNOLOGY

ICT for visualising thinking – Concepts and skills chart

This chart identifies and, in some cases, elaborates the key concepts and skills in the standards.

Key Concepts and Skills	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Using ICT tools to visualise thinking	Standards do not apply at Level 1. The Level 1 learning focus statement – http://vels.vcaa.vic.edu.au/essential/interdisciplinary/ict/level1.html#ictf1	At this level there are no relevant elements of the standards for this skill. The Level 2 learning focus statement – http://vels.vcaa.vic.edu.au/essential/interdisciplinary/ict/level2.html#ictf1	Use ICT tools to list ideas, order them into logical sequences, and identify relationships between them.	Apply ICT tools and techniques to represent and explore processes, patterns and cause-and-effect relationships.	Select and apply ICT tools that support the filtering, classifying, representing, describing and organising of concepts, issues and ideas. Use editing functions of the ICT tools when visualising thinking.	Use a range of ICT tools and data types to visualise their thinking strategies when solving problems and developing new understanding. Use appropriate ICT tools and editing techniques efficiently and effectively for assisting in visualising thinking.
Visualising thinking strategies	http://vels.vcaa.vic.edu.au/essential/interdisciplinary/ict/level1.html#ictf1 suggests appropriate learning experiences from which teachers can plan relevant teaching and learning activities that support students to develop the concepts and skills.	suggests learning experiences such as: students experiment with some simple ICT tools and techniques for visualising thinking. They learn to organise and classify information and ideas, and present them in a manner that is meaningful to them.		Use ICT tools and techniques that support the organisation and analysis of concepts, issues and ideas and that allow relationships to be identified and inferences drawn from them.	Use rule-using software such as databases and spreadsheets, to assist with problem solving and decision making.	Use visualising thinking tools and apply ICT techniques to support causal reasoning and to model and describe the dynamic relationship between variable and constant data values to test hypotheses.
Modifying visualising thinking strategies			Retrieve their saved visualising thinking strategies and edit them for use in new, but similar situations.	Review their stored thinking strategies in order to identify similarities and differences in their thinking patterns.	Retrieve and modify successful approaches to visualising thinking for use in new situations.	Discriminate between ICT tools and strategies based on suitability for problem solving in new situations.
Reflecting on visualising thinking strategies	Level 1 advice identifies how key concepts and skills can be developed.		Explain how the visualising thinking strategies can be used for different problems or situations.	Document in their bank of digital evidence how these visualising thinking strategies help them to understand concepts and relationships.	Explain what features of the new situations influenced their decisions to use particular ICT tools and techniques. Use a range of data types, including sound and still and moving images, to record the decisions made and actions taken when developing new understanding and problem solving. Evaluate the strengths and weaknesses of their decisions and actions in the given situations.	

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ICT for creating – Concepts and skills chart

This chart identifies and, in some cases, elaborates the key concepts and skills in the standards.

Key concepts and Skills	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Designing solutions and information products	Standards do not apply at Level 1.		Follow simple plans.	Use design tools to represent how solutions will be produced and the layout of information products.	Prepare designs that identify the structure and layout of the products and the evaluation criteria, and the plans for managing collaborative projects.	Devise detailed plans that sequence tasks to be done, resources needed, and timelines for completions. Annotate their plans to explain changes made during the project.
Producing solutions and information products	The Level 1 learning focus statement – http://vels.vcaa.vic.edu.au/essential/interdisciplinary/ict/level1.html#ictif1 suggests appropriate learning experiences from which teachers can plan relevant teaching and learning activities that support students to develop the concepts and skills. Level 1 advice identifies how key concepts and skills can be developed.	Manipulate text, images and numeric data to create simple information products for specific audiences. Make simple changes to improve the appearance of the information products.	Use tools and a range of data types to create information products designed to inform, persuade, entertain or educate particular audiences. Create information products to assist in problem solving in all areas of the curriculum. With minimal assistance, use ICT tools to capture and save images. Use simple editing functions such as copy, paste, re-sizing to manipulate the images for use in their products. Make ongoing modifications to their work to correct the spelling of frequently used words and to rectify simple formatting errors, for example use manual and electronic techniques such as proofreading and spellchecker.	Produce accurate and suitably formatted products to suit different purposes and audiences. Select relevant techniques for minimising the time taken to process data, and apply conventions and techniques that improve the appearance of the finished product. Modify products on an ongoing basis in order to improve meaning.	Independently apply a range of processing skills, functions and equipment to solve problems. During the processing stage of collaborative work, students monitor project plans and record reasons for adjusting them. Create products which contain minimal functional, typographical, formatting and readability errors.	Products demonstrate a clear sense of purpose and respect for the audience. Individually, and as team members apply a range of techniques, equipment and procedures that minimise the cost, effort and time of processing ICT solutions and maximise the accuracy, clarity and completeness of the information.
Evaluating solutions and information products			Evaluate the final information product and describe how well it meets its purpose.	Judge products against agreed criteria.	Apply criteria to evaluate their information products to meet user needs.	Appraise different strategies for organising and managing resources involved in problem solving and creating information products. Compare own solutions with others and justify suggestions to improve quality.
Managing files		Retrieve files and save new files using a naming system that is meaningful to them.	Organise their files into folders classified in a way that is meaningful to them. Explain the purpose of passwords for accessing files stored on networks.	Use file naming conventions that allow easy retrieval of files. Password protect and back up important files.	Independently use the operating system to manage their desktop workspace. Organise their folders logically, appropriately name and locate files for sharing with others. Apply techniques to facilitate the easy handling of large files such as saving and retrieving compressed files and understanding the characteristics of different file formats.	Apply strategies that protect own files from being corrupted, stolen or accidentally lost.
Creating digital portfolios				Create and maintain an up-to-date, logically structured bank of digital evidence of own learning – including text, images and multimedia.	Manage own bank of digital evidence to ensure it is up-to-date, is easy to navigate, complies with ICT presentation conventions and demonstrates a diversity of ICT skills and knowledge.	
Using safe work practices			Adjust equipment and apply techniques that are ergonomically sound.	Safely and independently use a range of skills, procedures, equipment and functions to process different data types.	Use ICT in a safe, efficient and effective manner.	
Ethical and legal obligations					Apply criteria to evaluate the extent to which their information products comply with intellectual property laws.	Apply processing practices that take into account their legal obligations and ethical considerations.

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ICT for communicating – Concepts and skills chart

This chart identifies and in some cases, elaborates the key concepts and skills in the standards.

Key Concepts and Skills	Level 1	Level 2	Level 3	Level 4	Level 5	Level 6
Locating data and information	Standards do not apply at Level 1. The Level 1 learning focus statement –	With some assistance, students use ICT to locate and retrieve relevant information from a variety of sources.	Locate information on an intranet, and use a recommended search engine and limited key words to locate information from websites.	Use email, websites and frequently asked question facilities to acquire information from peers and known and unknown experts. Use recommended search engines and refine search strategies to locate information quickly.	Select the most appropriate search engines to locate information on websites. Use complex search strategies, such as Boolean, to refine their searches.	Apply techniques to locate more precise information from websites, including searching general and specialised directories, and applying proximity operators.
Evaluating data and information	http://vels.vcaa.vic.edu.au/essential/interdisciplinary/ict/level1.html#ictl1		Develop and apply simple criteria to evaluate the value of the located information.	Evaluate the integrity of the located information based on its accuracy and the reliability of the web host.	Judge the integrity of the located information based on its credibility, accuracy, reliability and comprehensiveness.	
Sending and receiving data and information	suggests appropriate learning experiences from which teachers can plan relevant teaching and learning activities that support students to develop the concepts and skills. Level 1 advice identifies how key concepts and skills can be developed.	Compose simple electronic messages to known recipients and send them successfully.	Initiate and compose email messages to known and unknown audiences and, where appropriate, send replies. Create folders in their mailbox to organise the storage of email messages they wish to keep.	Successfully attach files to emails. Apply protocols for sending and receiving electronic information. Successfully upload own work to a protected public online space. Use email, websites and frequently asked question facilities to share information with, peers and known and unknown experts.	Organise their email mailbox into a logical structure and maintain it. Evaluate the merits of contemporary communication tools, taking into account their security, ease of use, speed of communication and impact on individuals. Share their ideas through their blog, website or other public forums, which are correctly formatted, comply with ICT conventions and demonstrate an awareness of the characteristics that contribute to products meeting their purpose.	Use accepted protocols to communicate regularly online with peers, experts, and others, expressing their messages in language appropriate to the selected form of communication, and demonstrating respect for cultural differences. Exchange ideas and considered opinions with others through online forums and websites.