

## Information and Communications Technology

In Information and Communications Technology, standards for assessing and reporting on student achievement are introduced at Level 1. The learning focus statements for Foundation provide advice about learning experiences that will assist students to work towards the achievement of the standards at Level 2.

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### Information and Communications Technology – Progressing towards Level 2

#### Progression Point F.5

*At F.5, the work of a student progressing towards the standard at Level 2 demonstrates, for example:*

#### Progression Point for Level 1

*At Level 1, the work of a student progressing towards the standard at Level 2 demonstrates, for example:*

#### Progression Point 1.5

*At 1.5, the work of a student progressing towards the standard at Level 2 demonstrates, for example:*

#### Information and Communications Technology

- use of one- and two-step manipulation techniques when processing text or numeric data to produce simple information products; for example, selecting and centring their name in a name tag
- use of basic manipulation techniques to create graphics; for example, forming images using circles and lines
- recognition and use of common icons such as the 'home' button for navigating multimedia resources

#### Information and Communications Technology

- use of basic formatting techniques when processing text and numeric data to produce simple information products for a specific audience; for example, keying text that is bold and coloured, and inserting an image from clip art to create a child's birthday invitation
- use of manipulation techniques to create graphics for a specific purpose or audience; for example, drawing a clown on a child's Get Well card
- location of a specific website by keying the address provided by the teacher
- use of a mouse to select and open a nominated file

#### Information and Communications Technology

- use of manipulation and basic editing techniques to create simple, formatted information products such as presentations and book covers, and identification of minor improvements that could be made to their appearance
- use of manipulation techniques to create graphics for use within a text-based product; for example, illustrations in a short report
- location of specific information within nominated websites and CD ROMs, using given navigation paths
- retrieval of stored files in a networked environment and the naming of newly created personal files

### Information and Communications Technology – Level 2 Standards

At this level standards are not organised by dimension.

#### Information and Communications Technology

At Level 2, students manipulate text, images and numeric data to create simple information products for specific audiences. They make simple changes to improve the appearance of their information products. They retrieve files and save new files using a naming system that is meaningful to them. They compose simple electronic messages to known recipients and send them successfully. With some assistance, students use ICT to locate and retrieve relevant information from a variety of sources.

## Information and Communications Technology – Progressing towards Level 4

### Progression Point 2.5

*At 2.5, the work of a student progressing towards the standard at Level 4 demonstrates, for example:*

#### ICT for visualising thinking

- identification of relationships between ideas, using basic editing software, nominated graphic organiser templates and manipulation techniques; for example, inserting shapes or drawing lines
- saving and retrieval of nominated visualising thinking files, and the use of editing techniques such as deleting and copying to modify these for use in new but similar learning situations

#### ICT for creating

- saving of files into nominated, existing folders in a networked environment
- creation of information products for a specific audience or purpose, following given layouts; for example, a birthday invitation created by placing text and pictures in given positions in a sample design
- with teacher direction, use of a digital camera to capture still or moving images
- identification on paper of typographical errors and the incorrect spelling of frequently used words using manual proofreading techniques, and the

### Progression Point for Level 3

*At Level 3, the work of a student progressing towards the standard at Level 4 demonstrates, for example:*

#### ICT for visualising thinking

- logical sequencing of ideas, using basic editing software, such as concept mapping tools, and other graphic organiser templates selected from a given list, and a range of manipulation techniques
- retrieval of the visualising thinking files selected from a given list, and use of editing techniques to modify these for new but similar learning situations; for example, deleting and inserting text and shapes in a graphic organiser to outline relationships between characters and events
- retrieval of nominated visualising thinking files, and use of annotation tools such as text boxes and callouts to indicate the files' suitability for different learning situations

#### ICT for creating

- saving of files into collaboratively created folders in a networked environment
- creation of an information product to inform, persuade, entertain or educate a specific audience, following a collaboratively determined design; for example, in a group, students plan a story book, create a layout design, and then individually create a page following this design
- with teacher guidance, transfer and saving to a computer of still and/or moving images captured with a digital camera
- identification and correction on screen of

### Progression Point 3.5

*At 3.5, the work of a student progressing towards the standard at Level 4 demonstrates, for example:*

#### ICT for visualising thinking

- organisation of ideas using familiar software and graphic organiser templates selected from a collaboratively developed list (for example, Venn diagrams and sequence charts) and a range of manipulation techniques
- retrieval of the visualising thinking files they selected from a collaboratively developed list, and use of editing techniques to modify them in new but similar learning situations
- retrieval of the visualising thinking files they selected from a given list, and use of annotations to describe how each file might be suitable for different learning situations

#### ICT for creating

- saving of files into individually created folders in a networked environment
- creation of information products, based on original ideas, to inform, persuade, entertain or educate specific audiences, and the documentation of these ideas in simple design plans
- with teacher support, transfer and saving to computer of still and/or moving images captured with a digital camera or scanner
- identification and correction on screen of typographical errors and the incorrect spelling of frequently used words, using manual proofreading

application of editing techniques to correct these errors on screen

typographical errors and the incorrect spelling of frequently used words, using electronic spellchecker techniques

and editing techniques and electronic spellchecker techniques

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### ICT for communicating

- storage of all sent and received emails in existing folders in their mailbox
- location of websites using a nominated search engine such as Yahoo!igans, and nominated keywords

### ICT for communicating

- use of teacher-provided criteria to determine which emails will be kept for future reference
- location of websites using a nominated search engine, such as the Education Channel, and keywords selected from a given list

### ICT for communicating

- creation of collaboratively defined folders in their mailbox
- location of websites using a nominated search engine, such as AskJeeves for Kids, and keywords selected from a class-developed list

## Information and Communications Technology – Level 4

### ICT for visualising thinking

At Level 4, students use ICT tools to list ideas, order them into logical sequences, and identify relationships between them. Students retrieve their saved visualising thinking strategies and edit them for use in new, but similar situations. They explain how these strategies can be used for different problems or situations.

### ICT for creating

At Level 4, students organise their files into folders classified in a way that is meaningful to them. Students explain the purpose of passwords for accessing files stored on networks. They follow simple plans and use tools and a range of data types to create information products designed to inform, persuade, entertain or educate particular audiences. They create information products to assist in problem solving in all areas of the curriculum. With minimal assistance, students use ICT tools to capture and save images. They use simple editing functions to manipulate the images for use in their products.

They make ongoing modifications to their work to correct the spelling of frequently used words and to rectify simple formatting errors. They evaluate the final information product and describe how well it meets its purpose. Students make adjustments to their equipment and apply techniques that are ergonomically sound.

### ICT for communicating

At Level 4, students initiate and compose email messages to known and unknown audiences and, where appropriate, send replies. Students create folders in their mailbox to organise the storage of email messages they wish to keep. They locate information on an intranet, and use a recommended search engine and limited key words to locate information from websites. They develop and apply simple criteria to evaluate the value of the located information.

## Information and Communications Technology – Progressing towards Level 6

### Progression Point 4.5

*At 4.5, the work of a student progressing towards the standard at Level 6 demonstrates, for example:*

#### ICT for visualising thinking

- creation of nominated graphic organisers that are appropriate for new learning situations, using familiar software and manipulation and editing techniques; for example, using shapes, lines and colours in word processing software to create a double-cell diagram to compare two ideas
- organisation and analysis of data and information, using unfamiliar software such as simulation software, and limited manipulation techniques; for example, animation of objects
- development of an electronic portfolio of nominated visualising thinking files that are annotated, for example, with audio commentary, to indicate their usefulness in learning

#### ICT for creating

- creation of an electronic portfolio of nominated files, saved in nominated locations, which demonstrate the use of ICT for learning
- identification in published information products of formatting features such as font styles and sizes that suit particular purposes and/or audience needs
- hand-drawn experimentations with various layouts for information products, using nominated design tools such as layout diagrams
- limited control of a given robot (for example, moving back and forth) using simple programming

### Progression Point for Level 5

*At Level 5, the work of a student progressing towards the standard at Level 6 demonstrates, for example:*

#### ICT for visualising thinking

- creation of graphic organisers, selected from a collaboratively developed list, that are appropriate for new learning situations, using familiar software and techniques to manipulate and edit a variety of data types such as images, text and numbers
- use of unfamiliar software such as databases, and a range of manipulation techniques, to represent and explore processes such as Victoria's rainfall data and its relationship to drought conditions
- development of an electronic portfolio of selected visualising thinking files with annotations that identify similarities and differences between their electronic and non-electronic learning strategies
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#### ICT for creating

- creation of an electronic portfolio that includes files selected on the basis of teacher-provided criteria; for example, 'visualising thinking strategies modified to suit a new learning situation'
- annotations to published and their own information products that describe how formatting features, such as borders, suit particular purposes and audience needs
- hand-drawn or electronically created designs for the layout and solutions of information products, using tools selected from a given list

### Progression Point 5.5

*At 5.5, the work of a student progressing towards the standard at Level 6 demonstrates, for example:*

#### ICT for visualising thinking

- creation of graphic organisers appropriate for new learning situations, using familiar software and a range of techniques to manipulate and edit a variety of data types
- representation of patterns or cause-and-effect relationships, using unfamiliar software such as a modelling software, and a range of manipulation techniques
- regular recording of the use and value of visual thinking tools for understanding concepts and relationships in their learning

#### ICT for creating

- creation of an electronic portfolio that logically displays files meeting collaboratively determined criteria; for example, 'the use of multimedia tools for solving problems'
- annotations to their own information products that explain why formatting and solution features of information products, such as working hyperlinks, suit the purpose and audience needs
- hand-drawn and electronically created designs for the layout and solutions of information products, using tools selected from a collaboratively determined list

techniques such as click-and-drag and icons

- modifications to their program to accommodate weaknesses identified when controlling the movement of a robot

- creation of robots responding to sensors, such as touch or lights, through the application of specific programming techniques
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### ICT for communicating

- addition of collaboratively determined keywords to an initial search string to narrow the listing of relevant websites; for example, adding 'biography' to a person's name
- experimentation with techniques to upload files and folders to a nominated location on an intranet
- experimentation with various communications methods such as frequently asked question (FAQ) facilities to obtain information for a particular inquiry

### ICT for communicating

- refinement of original keywords in a search string, by including words selected from an on-screen or print thesaurus
- uploading of files and folders to a nominated location on an intranet
- use of nominated communications methods to acquire information from, or share information with, peers and known experts

### ICT for communicating

- inclusion of new keywords and the deletion of some original ones in a search string, to narrow the listing of websites relevant to a particular inquiry
- testing of uploaded files and folders in a nominated location on an intranet; for example, checking that all files are present and accessible
- identification of the attributes of various communications methods that are appropriate in particular types of inquiry; for example, selecting methods that protect the disclosure of important information

## Information and Communications Technology – Level 6 Standards

### ICT for visualising thinking

At Level 6, students apply ICT tools and techniques to represent and explore processes, patterns and cause-and-effect relationships. Students 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.

Students review their stored thinking strategies in order to identify similarities and differences in their thinking patterns. They document in their bank of digital evidence how these visualising thinking strategies help them to understand concepts and relationships.

### ICT for creating

At Level 6, students safely and independently use a range of skills, procedures, equipment and functions to process different data types and produce accurate and suitably formatted products to suit different purposes and audiences. They use design tools to represent how solutions will be produced and the layout of information products. Students select relevant techniques for minimising the time taken to process data, and apply conventions and techniques that improve the appearance of the finished product. Students modify products on an ongoing basis in order to improve meaning and judge their products against agreed criteria.

Students create and maintain an up-to-date, logically structured bank of digital evidence of their learning. They password protect and back up important files and use file naming conventions that allow easy retrieval.

### ICT for communicating

At Level 6, students use email, websites and frequently asked question facilities to acquire from, or share information with, peers and known and unknown experts. When emailing, they successfully attach files and they apply protocols for sending and receiving electronic information. They successfully upload their work to a protected public online space. Using recommended search engines, students refine their search strategies to locate information quickly. They evaluate the integrity of the located information based on its accuracy and the reliability of the web host.

## ICT – Progressing towards Level 8

### Progression Point 6.5

*At 6.5, the work of a student progressing towards the standard at Level 8 demonstrates, for example:*

#### ICT for visualising thinking

- use of rule-based software such as databases or spreadsheets, and basic manipulation and editing techniques, to enter and sort data and information when making decisions and solving problems
- use of ICT tools and manipulation techniques that support visualisation of thinking in specific learning situations; for example, use of image-editing software to explore the concept of style in two-dimensional art
- use of a variety of data types to record ways in which ICT is used to develop new understandings or solve problems; for example, video recording the use of a data logger to collect scientific data

### Progression Point for Level 7

*At Level 7, the work of a student progressing towards the standard at Level 8 demonstrates, for example:*

#### ICT for visualising thinking

- use of rule-based software such as databases and spreadsheets, and a variety of manipulation and editing techniques, to filter and classify data and information when making decisions and solving problems; for example, hiding columns and querying on a single criterion
- identification of the features of specific ICT tools and manipulation techniques that support visualisation of thinking for specific learning situations; for example, animation and three-dimensional features of choreographic software allows viewing of dancers and their movements on a stage
- identification and analysis of the strengths and weaknesses of decisions made and actions taken when solving problems and developing understandings using ICT tools

### Progression Point 7.5

*At 7.5, the work of a student progressing towards the standard at Level 8 demonstrates, for example:*

#### ICT for visualising thinking

- use of rule-based software such as databases, spreadsheets and micro worlds, and a variety of manipulation and editing techniques, to interrogate and report on data and information when making decisions and solving problems
- understanding of how the attributes of specific ICT tools and techniques support particular types of learning; for example, concept mapping tools allow spatial representation of ideas and their interrelationships, supporting analytical thinking
- reflection on decisions made and actions taken when solving problems and developing understandings using ICT tools

#### ICT for creating

- use of software tools, such as spreadsheets and word processors, and limited manipulation techniques such as shading, to plan the tasks and responsibilities for collaborative projects
- identification in published information products of data, information or codes that do and do not comply with the legal use of ICT; for example, HTML

#### ICT for creating

- use of software tools, such as online calendars and blogs, and manipulation techniques to plan and monitor the progress of collaborative projects
- inclusion in their own websites of data, information or codes that comply with the legal use of ICT; for example, copyright statements
- ongoing modification of information products using editing and testing techniques; for example,

#### ICT for creating

- use of software tools and a range of manipulation techniques, such as symbols, lines and arrows, to plan and monitor the progress of collaborative projects and to identify reasons for adjusting plans
- inclusion in their own information products of data, information, code and strategies that comply with the legal use of ICT
- ongoing modification of information products to

- ongoing modification of information products by applying testing techniques to improve the functionality of solutions; for example, manually checking the accuracy of a spreadsheet formula

correcting typographical errors and conducting questionnaires on the readability of information products

improve their efficiency and effectiveness, by applying editing, testing and manipulation techniques

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### ICT for communicating

- location of websites, using collaboratively determined general search engines such as Google and Yahoo, and search strategies including keywords and a filtering technique such as date filtering
- selection of information contained within websites, using criteria from a given list
- experimentation with formats designed to enhance the organisation of information contained within contemporary communication tools such as blogs

### ICT for communicating

- location of websites, using nominated specialised search engines such as RocketInfo, and search strategies including keywords and filtering techniques
- selection of information contained within websites, using collaboratively determined criteria
- application of appropriate formats and nominated ICT conventions when using contemporary communication tools such as interactive websites

### ICT for communicating

- location of targeted websites, using general and specialised search engines and limited Boolean logic search strategies to broaden or narrow searches
- selection and justification of information contained within websites, using self-generated criteria
- application of formats, collaboratively determined ICT conventions and nominated protocols, as appropriate, to particular contemporary communications tools such as Wikis



## Information and Communications Technology – Level 8 Standards

### ICT for visualising thinking

At Level 8, students select and apply ICT tools and editing functions that support the filtering, classifying, representing, describing and organising of concepts, issues and ideas. They use rule-using software to assist with problem solving and decision making.

Students retrieve and modify successful approaches to visualising thinking for use in new situations. They explain what features of the new situations influenced their decisions to use particular ICT tools and techniques.

Students 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. They evaluate the strengths and weaknesses of their decisions and actions in the given situations.

### ICT for creating

At Level 8, students independently use the operating system to manage their desktop workspace. They organise their folders logically, appropriately name and locate files for sharing with others and apply techniques to facilitate the easy handling of large files.

When creating information products, students prepare designs that identify the structure and layout of the products, the evaluation criteria, and the plans for managing collaborative projects. Students independently apply a range of processing skills, functions and equipment to solve problems and create products which contain minimal functional, typographical, formatting and readability errors. During the processing stage of collaborative work, students monitor project plans and record reasons for adjusting them. They apply criteria to evaluate the extent to which their information products meet user needs and comply with intellectual property laws. They use ICT in a safe, efficient and effective manner.

Students keep their bank of digital evidence up-to-date, and ensure it is easy to navigate, complies with ICT presentation conventions and demonstrates a diversity of ICT skills and knowledge.

### ICT for communicating

At Level 8 students select the most appropriate search engines to locate information on websites. They use complex search strategies to refine their searches. They judge the integrity of the located information based on its credibility, accuracy, reliability and comprehensiveness.

Students 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.

Students organise their email mailbox into a logical structure and maintain it. They evaluate the merits of contemporary communication tools, taking into account their security, ease of use, speed of communication and impact on individuals.

## Information and Communications Technology – Progressing towards Level 10

### Progression Point 8.5

*At 8.5, the work of a student progressing towards the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- use of nominated dynamic modelling tools and manipulation and editing techniques to describe the relationships between ideas or components; for example, building simulations of dynamic automotive systems and processes
- use of complex ICT tools to visually represent, model, reframe or refine thinking strategies; for example, using three-dimensional multimedia tools to construct complex representations of molecules
- selection, from a given list, of ICT tools and editing techniques to support problem solving, based on their technical capabilities

#### ICT for creating

- identification of similarities and differences between the strategies for organising and managing files used by school teams and by small organisations; for example, use of passwords to enter a school network, locked keyboards to restrict access to files in a business
- identification of threats to data security caused by accidental loss, stealing or data corruption
- use of ICT presentation conventions and efficient processing techniques to reduce the time taken to process data; for example, macros

### Progression Point for Level 9

*At Level 9, the work of a student progressing towards the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- use of selected dynamic modelling tools, and manipulation and editing techniques and procedures, to test hypotheses; for example, testing predictions of how the inclusion of an alternative component in an electronic system will affect performance
- use of complex ICT tools to visually represent, model, reframe and refine causal reasoning; for example, using rule-based software such as spreadsheets and expert systems to explore the effects of rural depopulation on the economy
- selection, from a collaboratively determined list, of specific ICT tools and editing techniques to support particular types of problem solving

#### ICT for creating

- modification of the file management system used by a school team to incorporate conventions selected from a given list; for example, consistent filenames
- use of strategies to protect the security of their files; for example, password protecting files to minimise unauthorised access
- use of ICT presentation conventions and processing techniques to increase the efficiency and effectiveness of information products
- designs for web-based information products that

### Progression Point 9.5

*At 9.5, the work of a student progressing towards the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- independent use of dynamic modelling tools and a range of multi-step manipulation and editing techniques and procedures to control and test the relationships between components; for example, constructing and manipulating geometric and algebraic objects to explore and test the relationships within and between these objects
- use of complex ICT tools, peripherals and manipulation techniques to explore and represent the relationship between components; for example, using a robot and software to show the relationship between temperature and movement
- independent selection of specific ICT tools, strategies and editing techniques to support a variety of types of problem solving

#### ICT for creating

- modification of the file management system used by a school team, to incorporate collaboratively determined conventions; for example, folder structures and file access rights
- use of strategies to protect the security of stored team files; for example 'read only' files
- use of ICT presentation conventions, processing techniques and procedures to increase the efficiency and effectiveness of information products; for example, gaining feedback from peers on the quality of the product during

- designs for web-based information products that acknowledge the common characteristics of a targeted audience; for example, transcripts of audio files on a website for the hearing impaired

acknowledge characteristics of an unknown global audience; for example, the inclusion of symbols that are culturally respectful

production and making appropriate modifications

- designs for web-based information products that acknowledge universally accepted conventions regarding accessibility; for example, using an alt tag to indicate the size of a graphic

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### ICT for communicating

- identification, in existing communications, of nominated protocols that are used when exchanging ideas and considered opinions through online forums; for example, language that respects gender
- location of targeted websites, using general and specialised search engines, and nominated search directories such as BUBL
- identification, in existing communications, of features that reflect ethical considerations and legal responsibilities; for example, copyright statements

### ICT for communicating

- application of collaboratively determined protocols when exchanging ideas and considered opinions through online forums such as blogs; for example, language and icons that respect cultural differences
- location of targeted websites using general and specialised search engines, collaboratively chosen search directories such as Infomine, and proximity operators such as 'near' and 'adjacent'
- use, when communicating electronically, of strategies that comply with legal responsibilities and take into account ethical considerations

### ICT for communicating

- application of self-generated protocols when exchanging ideas and considered opinions through online forums such as Wikis
- location of targeted websites using general and specialised search engines, search directories such as Awesome Library, and proximity operators
- application, when communicating electronically, of strategies that comply with legal responsibilities and protect vulnerable users from accessing or receiving unwanted information

## Information and Communications Technology – Level 10 Standards

### ICT for visualising thinking

At Level 10, students use a range of ICT tools and data types to visualise their thinking strategies when solving problems and developing new understanding. They 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.

Students are efficient and effective in their use of appropriate ICT tools and editing techniques for assisting in visualising thinking. When solving problems, students discriminate between such tools and strategies based on their suitability for problem solving in new situations.

### ICT for creating

At Level 10, students appraise different strategies for organising and managing resources involved in problem solving and creating information products. They use ICT to devise detailed plans that sequence tasks to be done, resources needed, and timelines for completion. They annotate their plans to explain changes made during the project.

Individually, and as team members, students 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. They apply strategies that protect their files from being corrupted, stolen or accidentally lost. Their products demonstrate a clear sense of purpose and respect for the audience. Students apply processing practices that take into account their legal obligations and ethical considerations. They compare their own solutions with others and justify suggestions to improve quality.

### ICT for communicating

At Level 10, students exchange ideas and considered opinions with others through online forums and websites. Students apply techniques to locate more precise information from websites, including searching general and specialised directories, and applying proximity operators. They 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.

## Information and Communications Technology – Progressing beyond Level 10

### Progression Point 10.5

*At 10.5, the work of a student progressing beyond the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- appropriate choice and use of graphic organisers, modelling, simulation and controlled models to structure various forms of thinking about concepts, processes and ideas
- integration of two visualising thinking tools, and efficient and effective use of manipulation techniques, to support complex thinking processes
- awareness of the technical capabilities of specific ICT tools and visualising thinking strategies for supporting various problem-solving approaches or learning situations

#### ICT for creating

- use of advanced manipulation techniques to process multiple data types when creating visual representations; for example, using sound, images and text to depict skills and strategies for countering moves in a basketball game
- experimentation with software tools and techniques to create features incorporated in commercial products; for example, practising different ways of creating a password protection feature in a website to control access rights
- use of mobile technology such as data loggers and personal digital assistants (PDAs) to acquire and process data in order to solve problems

### Progression Point 11

*At 11, the work of a student progressing beyond the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- how the choice of graphic organisers, modelling, simulations and controlled models to structure particular forms of thinking about concepts, processes and ideas fits the purpose
- creation of an original graphic organiser, using familiar ICT tools and efficient and effective manipulation techniques to support a specific learning situation
- detailed knowledge of the technical capabilities of specific ICT tools and visualising thinking strategies for supporting various problem-solving approaches or learning situations

#### ICT for creating

- creation of information products by using functions from different software tools and equipment; for example, creating a multimedia product using multimedia-authoring and image-editing software, and a digital camera and an MP3 player to acquire data
- modifications to their information products to incorporate features included in commercial products
- customisation of mobile technology, such as mobile phones, personal digital assistants (PDAs) and gaming devices, to improve their efficiency and effectiveness

### Progression Point 11.5

*At 11.5, the work of a student progressing beyond the standard at Level 10 demonstrates, for example:*

#### ICT for visualising thinking

- justification of the suitability of specific visualising thinking strategies for structuring various forms of thinking about concepts, processes and ideas
- use of domain-specific simulated system software, such as automotive engineering software, to assist in providing answers to specific questions
- justification of the choice of particular ICT tools to support various types of problem-solving and thinking processes

#### ICT for creating

- creation of user documentation to support processing of new sets of data for a solution they have produced; for example, development of a quick reference guide that explains processing and security procedures to be followed when processing weekly expense statements
- justification of the tools and techniques used to incorporate features included in commercial products
- selection and justification of appropriate mobile technology for given purposes

**ICT for communicating**

- provision of constructive feedback on information posted by peers in closed online forums such as blogs used within the school
- identification of the technical capabilities of contemporary communication tools; for example, transmission rates of media, and security facilities
- effective exchange of sound, images and text files using mobile technology such as mobile phones, MP3 players and hand-held email devices

**ICT for communicating**

- provision of constructive feedback on information posted by known or unknown experts in public online forums, such as Wikis
- application of appropriate strategies for protecting information transferred via contemporary communication tools
- adherence to codes of practice and the application of appropriate strategies to conform to key provisions of intellectual property and copyright laws

**ICT for communicating**

- reflection on received feedback and ICT processes in order to make future communications more effective
- understanding of the roles that components of contemporary communication tools play in the secure transfer of information via those tools
- awareness of, and reflection on, the legal and ethical impacts of contemporary communication tools on a global community