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| Years 5–6 standard elaborations —  Australian Curriculum v9.0: Technologies |

## Purpose

The standards elaborations (SEs) support teachers to connect curriculum to evidence in assessment so that students are assessed on what they have had the opportunity to learn. The SEs can be used to:

* make consistent and comparable judgments, on a five-point scale, about the evidence of learning in a folio of student work across a year/band
* develop task-specific standards (or marking guides) for individual assessment tasks
* quality assure planning documents to ensure coverage of the achievement standard across a year/band.

## Structure

The SEs have been developed using the Australian Curriculum achievement standard. The achievement standard for Technologies describes what students are expected to know and be able to do at the end of each year. Teachers use the SEs during and at the end of a teaching period to make on-balance judgments about the qualities in student work that demonstrate the depth and breadth of their learning.

In Queensland, the achievement standard represents the C standard — a sound level of knowledge and understanding of the content, and application of skills. The SEs are presented in a matrix where the discernible differences and/or degrees of quality between each performance level are highlighted. Teachers match these discernible differences and/or degrees of quality to characteristics of student work to make judgments across a five-point scale.

In Years 5–6 the Learning area achievement standard may be used to assess within and across the Technologies subjects.

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| **Years 5–6 Australian Curriculum: Technologies achievement standard** |
| By the end of Year 6 students explain how people design products, services and environments to meet the needs of communities, including sustainability. For each of the 3 prescribed technologies contexts students explain how the features of technologies impact on design decisions and they create designed solutions. They process data and show how digital systems represent data, design algorithms involving complex branching and iteration, and implement them as visual programs including variables. They select and justify design ideas and solutions against design criteria. Students share and communicate ideas or content to an audience using technical terms, graphical representation techniques and appropriate digital tools. They develop project plans, including production processes, and select technologies and techniques to safely produce designed or digital solutions. Students securely access and use multiple digital systems and describe their components and how they interact to process and transmit data. They identify their digital footprint and recognise its permanence. |
| Source: Australian Curriculum, Assessment and Reporting Authority (ACARA), *Australian Curriculum Version 9.0 Technologies for Foundation–10* <https://v9.australiancurriculum.edu.au/f-10-curriculum/learning-areas/design-and-technologies_digital-technologies/year-5?view=quick&detailed-content-descriptions=0&hide-ccp=0&hide-gc=0&side-by-side=1&strands-start-index=0&subjects-start-index=0> |

## Years 5–6 Technologies standard elaborations

|  | | A | B | C | D | E |
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|  | | The folio of student work contains evidence of the following: | | | | |
| Knowledge and understanding | Technologies  and society | discerning explanation of how people design products, services and environments to meet the needs of communities, including sustainability | detailed explanation of how people design products, services and environments to meet the needs of communities, including sustainability | explanation of how people design products, services and environments to meet the needs of communities, including sustainability | description of how people design products, services and environments to meet the needs of communities, including sustainability | statement/s about how people design products, services and environments |
| Technologies contexts | discerning explanation of how the features of technologies impact on design decisions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | detailed explanation of how the features of technologies impact on design decisions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | explanation of how the features of technologies impact on design decisions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | description of the features of technologies that impact on design decisions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | statement/s about the features of technologies for one or more of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations |
| Digital systems | secure access and proficient use of multiple digital systems | secure access and effective use of multiple digital systems | secure access and use of multiple digital systems | secure access and guided use of multiple digital systems | secure access and directed use of multiple digital systems |
| comprehensive description of components of digital systems and how they interact to process and transmit data | detailed description of components of digital systems and how they interact to process and transmit data | description of components of digital systems and how they interact to process and transmit data | identification of components of digital systems and/or how they interact to process and transmit data | statement/s about components of digital systems |
| **Data representation** | proficient:   * data processing * demonstration of how digital systems represent data | effective:   * data processing * demonstration of how digital systems represent data | * data processing * demonstration of how digital systems represent data | * guided data processing * partial demonstration of how digital systems represent data | * directed data processing * variable demonstration of how digital systems represent data |
| **Processes and production skills** | **Investigating and defining\*** |  |  |  |  |  |
| **Generating and designing** | reasoned design of algorithms involving complex branching and iteration | logical design of algorithms involving complex branching and iteration | design of algorithms involving complex branching and iteration | guided design of algorithms involving complex branching and/or iteration | directed design of algorithms |
| sharing and communication of considered ideas or content to an audience through the:   * use of technical terms * comprehensive use of graphical representation techniques * proficient use of appropriate digital tools | sharing and communication of effective ideas or content to an audience through the:   * use of technical terms * detailed use of graphical representation techniques * effective use of appropriate digital tools | sharing and communication of ideas or content to an audience through the use of:   * technical terms * graphical representation techniques * appropriate digital tools | sharing and communication of superficial ideas or content to an audience through the:   * use of technical terms * simple use of graphical representation techniques * simple use of appropriate digital tools | statement/s about design ideas or content to an audience through the:   * basic use of graphical representation techniques and/or * sporadic use of appropriate digital tools |
| **Producing and implementing** | creation of proficient designed solutions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | creation of effective designed solutions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | creation of designed solutions for each of the 3  prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | creation of aspects of designed solutions for each of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations | creation of fragmented designed solutions for one or more of the 3 prescribed technologies contexts:   * Engineering principles and systems * Food and fibre production; Food specialisations * Materials and technologies specialisations |
| purposeful selection of technologies and techniques to proficiently and safely produce designed or digital solutions | effective selection of technologies and techniques to effectively and safely produce designed or digital solutions | selection of technologies and techniques to safely produce designed or digital solutions | guided selection of technologies and techniques to safely produce simple designed or digital solutions | directed selection of technologies and techniques to safely produce basic designed or digital solutions |
| proficient implementation of algorithms involving branching and iteration as visual programs including variables | effective implementation of algorithms involving branching and iteration as visual programs including variables | implementation of algorithms involving branching and iteration as visual programs including variables | guided implementation of algorithms involving branching and/or iteration as visual programs including variables | directed implementation of algorithms |
| **Evaluating** | selection and discerning justification of design ideas and solutions against design criteria | selection and detailed justification of design ideas and solutions against design criteria | selection and justification of design ideas and solutions against design criteria | selection and description of design ideas and solutions | selection and statement/s about design ideas and solutions |
| **Collaborating and managing** | development of comprehensive project plans including production processes | development of detailed project plans including production processes | development of project plans including production processes | guided development of simple project plans including production processes | directed development of basic project plans |
| **Privacy and security** | identification of their digital footprint and discerning recognition of its permanence. | identification of their digital footprint and logical recognition of its permanence. | identification of their digital footprint and recognition of its permanence. | partial identification of their digital footprint and guided recognition of its permanence. | statement/s about their digital footprint. |

\* sub-strand assessed within Technologies contexts for this level

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| Key | shading emphasises the qualities that discriminate between the A–E descriptors |

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