NSW Response
Draft Australian Curriculum: Technologies
Foundation to Year 10

Introduction
NSW has joined with the Australian Government and all other states and territories in a joint
effort to develop an Australian Curriculum. The Board of Studies NSW is responsible
for advising the NSW Minister for Education on the appropriateness of curriculum for NSW
schools and the structure and process of its implementation, including with regard to the
Australian Curriculum.

The development of an Australian Curriculum is being coordinated by the Australian
Curriculum, Assessment and Reporting Authority (ACARA). Phase 1 includes English,
Mathematics, Science and History. Phase 2 comprises Geography, Languages and the Arts.
Phase 3 comprises Health and Physical Education, Economics, Business, Civics and
Citizenship and Technologies including Design and Technologies and Digital Technologies.

The Board has conducted consultation with NSW stakeholders in order to inform feedback to
ACARA on the draft Australian Curriculum: Technologies.

Key matters

Technologies

- In general, the rationale, aims and organisation of content for Technologies are
  appropriate and provide sufficient guidance for curriculum writers.

- The separation of the Digital Technologies from Design and Technologies F–8 is
  contrary to the internationally recognised integrated approach to technology education.
  This separation is not justified in the rationale.

- The three separate rationales and aims are confusing and have a great deal of overlap.
  There are substantial opportunities for integration that have been overlooked.

- The curriculum as drafted creates confusion about the learning area, its F–12 continuum
  and the optional or elective courses beyond the mandatory F–8 curriculum. Respondents
  expressed uncertainty about whether the curriculum is intended to replace all other
  technology subjects and that digital technology is now treated as an additional separate
  subject to be taught in F–8.

- The content specified in both Design and Technologies and Digital Technologies will
  provide a challenge in primary education, requiring professional development,
  resourcing and changes to undergraduate teacher training.
The underlying concepts of technology education are not clearly articulated. In particular, production (producing and making) and design processes need to be clarified.

The elaborations add an extra layer of confusion in the document with respondents unsure if they are mandatory teaching methods or suggestions.

The concepts of ‘play’ in early years learning and experimentation in later years for solution development are a strong part of the rationale but are not reflected sufficiently throughout the document.

There are inconsistencies in the writing style between Digital Technologies and Design and Technologies, leading to perceived differences in academic expectations from the two areas.

**Design and Technologies**

- The separation of Digital Technologies from Design and Technologies leads to a lack of digital design work in Design and Technologies.
- There is an excessive emphasis on Food (Food and Fibre Production, Food Technologies), making up 50% of the Design and Technologies contexts. Other important contemporary materials and technologies specialisations such as composites, metal, plastics, wood, smart materials, textiles, architecture, electronics, graphics technologies, fashion are all mentioned (p26).
- The hands-on understanding of tools, materials and equipment is an important aspect of a technologies curriculum that requires strengthening.
- The use of food in F–6 will create potential safety issues regarding allergies. The implications for staff training and equipment needs are substantial.
- The context areas within Design and Technologies do not provide a balance of technological experiences in F–6.

**Digital Technologies**

- Notwithstanding the need for integration with Design and Technologies, the content within the subject Digital Technologies is appropriate to 21st-century learning, although its timing and appropriateness by year level is of concern, as are the professional development implications.
- The draft curriculum for Digital Technologies utilises and interchanges complex language and terminology that requires specialised understanding of computer programming for the development of digital products. These terms are confusing for many teachers and particularly generalist teachers in F–6.
- Content in Digital Technologies is not project based and is narrow in its focus only on computational and algorithmic thinking. There is a lack of a full and complete design or engineering process in the Digital Technologies to produce products that meet human needs.
- In Digital Technologies the focus on ‘online’ experiences, though appropriate, is not inclusive of the broad range of experiences included in the use of digital technologies.
- The distinction between ICT general capability and the Digital Technologies curriculum is not clear and is confusing for curriculum writers, teachers and course developers.
Recommendations to ACARA

- Review the rationale and overall organisation to provide a single subject under which the content from both Design and Technologies and Digital Technologies can be taught in F–8. They comprise the same consistent conceptual understanding of technology and how technology is developed and utilised through design processes.
- Review the separation of Digital Technologies from Design and Technologies, trial the inclusion of Digital Technologies as a context within Design and Technologies.
- Review the rationale to make it clear that ACARA is developing content for only two areas in technologies and that states and territories will continue to develop broader technologies curricula.
- Combine the three rationales and three aims into one rationale and one aim.
- Combine Food and Fibre and Food Technologies into one prescribed context in F–8.
- Ensure that Content descriptions reflect the hands-on nature of Design and Technologies through the development of skills and practical application.
- Strengthen the content relating to the use and practical application of traditional, emerging and Digital Technologies as part of the technological processes.
- Critically analyse the level of content in Digital Technologies for its age appropriateness, especially non-visual programming in Years 5 and 6.
- Ensure the Digital Technologies curriculum is written using language that is clear and easily understood by teachers who are not specifically trained in this area.
- Provide greater consistency of writing style across the documents.
- Broaden the scope of the Digital Technologies content beyond computational and algorithmic thinking so that a process of design and production of solutions and the application of knowledge is clear.
- Clarify the importance of project-based learning and the design approach within Digital Technologies and Design and Technologies to facilitate integrated learning of Technologies.
- Highlight the responsibilities for health and safety generally, and particularly in the use of food.
- The role of multimedia in Technologies as a technical design challenge needs to be more strongly clarified as the use of multimedia technologies will be increasingly used across the curriculum.
- Expand the content regarding online experiences to also include offline experiences.
- Make creating preferred futures the single overarching idea with systems thinking and project management being a subset of this.
- Provide separate content for Foundation (Kindergarten) and for Year 1 to Year 2.
- Be more extensive in stating the role of digital content in Design and Technologies.
Background information

The Australian Curriculum, Assessment and Reporting Authority (ACARA) released the draft curriculum for Foundation to Year 10 for the Australian Curriculum: Technologies for national consultation until 10 May.

ACARA has an established timeline that includes further curriculum refinement to follow the consultation period. A publication date for the final curriculum is yet to be released.

The Board of Studies is coordinating consultation in NSW to provide advice about the quality and suitability of the draft curriculum for Technologies for NSW schools. The Board conducted a coordinated set of consultation activities to engage teachers and stakeholders and to seek their feedback.

The NSW consultation focused on the F–10 Technologies curriculum and consisted of:

- Focus group meetings at:
  - Campbelltown on 25 March 2013 (Campbelltown FG)
  - Orange on 8 April 2013 (Orange FG)

- Online Blog/Wiki from 18 March to 26 April (Wiki)

- Online survey from 13 August to 23 September 2012 (Survey)

- Written submissions were received from:
  - NSW Department of Education and Communities (DEC)
  - Australian Council in Computer Education via the ICTENSW (ACCE)
  - Institute of Industrial Arts Technology Education NSW (IIATE)
  - Design and Technology Teachers Association NSW (DATTA)
  - Individual submissions

The Department of Education and Communities and the Catholic Education Office (CEO) Sydney, conducted a range of activities during the consultation period to inform feedback to the Board.
Analysis of responses

Rationale (Technologies)
Feedback identified that the Technologies rationale provided a clear, strong statement of the value and importance of studying and engaging with a Technologies curriculum. Most respondents indicated that the extent of duplication of the rationale for both Digital Technologies and Design and Technologies was unnecessary. Overwhelmingly, a single rationale for the Technologies was requested. Strong concern was expressed about implementation of both Design and Technologies and Digital Technologies in Primary. The Digital Technologies rationale was seen as too wordy and complex, and indicated a level of academic challenge that the Design and Technologies rationale lacked.

<table>
<thead>
<tr>
<th>Summary of feedback</th>
<th>Source/s</th>
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</thead>
<tbody>
<tr>
<td>The structure of three rationales is unwieldy and unnecessarily complex.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki, DEC</td>
</tr>
<tr>
<td>The rationale is a good broad statement about technology education, clearly explained and defined.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
<tr>
<td>The aims are similar to the current NSW curriculum.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
<tr>
<td>There is a lack of clarity about how much time is Digital Technologies and how much is Design and Technologies. Is it split 50/50?</td>
<td>Campbelltown FG, Orange FG, Wiki</td>
</tr>
<tr>
<td>There is a strong belief that Digital Technologies should not be separated from Design and Technologies.</td>
<td>Campbelltown FG, Orange FG, Survey</td>
</tr>
<tr>
<td>Reinstate the last two sentences from the previous version of the document under Organisation: ‘This is central to pedagogy in Foundation to Year 6, and a key strength for meaningful learning in the Technologies curriculum. Schools are best placed to determine if and how integrated teaching will occur.’</td>
<td>DEC, Orange FG</td>
</tr>
<tr>
<td>The rationale needs to be clearer regarding the introduction of Digital Technologies.</td>
<td>Campbelltown FG, ACCE</td>
</tr>
<tr>
<td>Subject-specific feedback</td>
<td>Source/s</td>
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<tr>
<td>-----------------------------------------------------------------------------------------</td>
<td>-------------------------------</td>
</tr>
<tr>
<td><strong>Design and Technologies rationale</strong></td>
<td></td>
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<tr>
<td>Resourcing of primary schools is a concern if they are to meet all of the requirements.</td>
<td>Campbelltown FG, Orange FG,</td>
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<tr>
<td>Survey</td>
<td></td>
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<tr>
<td>The rationale provides a strong basis for the development of appropriate subjects</td>
<td>Campbelltown FG, Orange FG,</td>
</tr>
<tr>
<td>under the Design and Technologies area, but it does not sell the Design and</td>
<td>Survey</td>
</tr>
<tr>
<td>Technologies area as well as the rationale for Digital Technologies does.</td>
<td></td>
</tr>
<tr>
<td>Designed solutions need to be appropriate.</td>
<td>Survey, Wiki</td>
</tr>
<tr>
<td>The rationale is very clear and balanced but makes no mention of the way modern</td>
<td>Survey</td>
</tr>
<tr>
<td>product development is carried out in global teams where communication and</td>
<td></td>
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<tr>
<td>collaboration are crucial and data-management systems are critical to</td>
<td></td>
</tr>
<tr>
<td>competitiveness.</td>
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<tr>
<td>The use of verbs such as ‘use’, ‘create’, ‘manipulate’ are all positive and supportive</td>
<td>Campbelltown FG, DEC, Orange</td>
</tr>
<tr>
<td>of a practical approach to developing solutions to design problems but this does not</td>
<td>FG</td>
</tr>
<tr>
<td>seem to carry over to the content descriptions.</td>
<td></td>
</tr>
<tr>
<td><strong>Digital Technologies rationale</strong></td>
<td></td>
</tr>
<tr>
<td>There will be extreme difficulty for a non-computer trained teacher to teach this</td>
<td>Campbelltown FG, Orange FG,</td>
</tr>
<tr>
<td>content. Teachers will need training and an increase in professional learning.</td>
<td>Survey, Wiki</td>
</tr>
<tr>
<td>Many teachers will not have the knowledge.</td>
<td></td>
</tr>
<tr>
<td>The basic skills required to develop digital solutions are not evident.</td>
<td>Campbelltown FG</td>
</tr>
<tr>
<td>Digital Technologies seems to be more content- than process-based.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>There is a good acknowledgement of the ubiquity of digital technology.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>A convincing argument that Digital Technologies ‘fosters curiosity’ or ‘confidence’ is</td>
<td>Campbelltown FG, Survey</td>
</tr>
<tr>
<td>not provided.</td>
<td></td>
</tr>
<tr>
<td>Limited access in some systems due to filtering may hinder development of this</td>
<td>Survey</td>
</tr>
<tr>
<td>curriculum.</td>
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</tbody>
</table>
Aims

Respondents commented that the aims reflected current practice in Technology subjects in NSW. They found a large amount of overlap between the three aims provided and were strong in their criticism of the separation of Digital Technologies from Design and Technologies. Overall, the response was positive.

<table>
<thead>
<tr>
<th>Summary of feedback</th>
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<tbody>
<tr>
<td>The aim is excellent as it covers the traditional to the emerging.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
<tr>
<td>The inclusion of reference to practical skills and processes, and application are a positive, but need to be strengthened.</td>
<td>Campbelltown FG, Orange FG, Wiki, DEC</td>
</tr>
<tr>
<td>There is some concern about the appropriateness for the early stages of primary school.</td>
<td>Survey</td>
</tr>
<tr>
<td>The organisation into Knowledge and Understanding as one strand and Processes and Production skills is well supported. The two explicitly stated and related strands of ‘knowledge and understanding’ and ‘processes and production skills’ are excellent, and highlight the unique nature of the Technologies curriculum that has a clear relationship between theory and practice.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
<tr>
<td>The explicit teaching of ICT occurs in Design and Technologies as much as it does in Digital Technologies with regards to the ICT general capability.</td>
<td>Campbelltown FG</td>
</tr>
</tbody>
</table>

Subject-specific feedback

<table>
<thead>
<tr>
<th>Design and Technologies aims</th>
<th>Source/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>There is no mention of emerging technology in the aims for Design and Technologies.</td>
<td>Orange FG</td>
</tr>
<tr>
<td>Design and Technologies aims look similar to Technology (Mandatory).</td>
<td>Campbelltown FG, Orange FG, Wiki</td>
</tr>
<tr>
<td>Overlap with the Technologies rationale is substantial.</td>
<td>Orange FG</td>
</tr>
</tbody>
</table>
### Subject-specific feedback

<table>
<thead>
<tr>
<th>Feedback</th>
<th>Source/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation of the Design and Technologies contexts into four results in a small amount of time for each context. Combined with the requirement to have three different types of design product, this leads to meaningless projects. Revision with more flexibility for schools is needed.</td>
<td>Campbelltown FG, Survey, Wiki</td>
</tr>
<tr>
<td>There is insufficient time given to the design aspect because the Digital component has been increased in importance to represent half of the Technologies curriculum.</td>
<td>Orange FG</td>
</tr>
<tr>
<td>There is too much emphasis on Food. Food and Fibre should combine with Food Technologies in a holistic ‘paddock to plate’ approach from K–8. The use of a design process is not as prominent as it should be in a contemporary Technologies curriculum.</td>
<td>Survey, Wiki, DEC, Survey, Wiki, ACCE</td>
</tr>
<tr>
<td>Quality needs to be reinforced in the producing and evaluating of designed solutions.</td>
<td>Survey, IIATE</td>
</tr>
<tr>
<td>There is strong concern for primary teachers in delivering the full range of contexts. The mandating of product, service and environment over each stage is excessive.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
</tbody>
</table>

### Digital Technologies aims

<table>
<thead>
<tr>
<th>Aim</th>
<th>Source/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>This sounds similar to Design and Technology and to existing Board of Studies NSW subjects.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki, IIATE</td>
</tr>
<tr>
<td>The content is too specialised, forcing students into programming and problem-solving and ignoring other key elements of digital technology.</td>
<td>Campbelltown FG, DEC, ACCE, IIATE</td>
</tr>
<tr>
<td>The majority of programmable systems are embedded in products with sensors and actuators. There is a great deal of overlap with design and engineering courses so programming should be part of the overall course.</td>
<td>Survey, IIATE</td>
</tr>
<tr>
<td>There is some support for the terms used.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>There should be clearer links between Digital Technologies aims and the overall aim.</td>
<td>ACCE</td>
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</tbody>
</table>
**Organisation of content**

Respondents indicated that the organisation of content is easy to understand with the common structure for the two subjects. The prioritisation of the ‘processes and production skills’ strand over the ‘knowledge and understanding’ strand was suggested by many. There was general support for the strands structure proposed. Respondents expressed very strong support for the concept of ‘creating preferred futures’ as the primary key concept in Technologies.

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<th>Summary of feedback</th>
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<tbody>
<tr>
<td>There should not be two subjects. Digital Technologies is a context in Design and</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki, DEC, IIATE, DATTA, 90% of</td>
</tr>
<tr>
<td>Technologies. This will give it relevance and a purpose. They could be strands</td>
<td>respondents</td>
</tr>
<tr>
<td>in Design and Technology.</td>
<td></td>
</tr>
<tr>
<td>There is no explicit recognition that ‘Systems thinking’ is a process of design.</td>
<td>Campbelltown FG, Wiki, DEC</td>
</tr>
<tr>
<td>There is little acknowledgement that Digital Technologies processes already exist</td>
<td>Wiki</td>
</tr>
<tr>
<td>in Design and Technologies. Verbs used are inconsistent.</td>
<td></td>
</tr>
<tr>
<td>The concept of project management was supported, and should be maintained.</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki, ACCE, IIATE</td>
</tr>
<tr>
<td>Placing knowledge and understanding first, before processes and production skills,</td>
<td>Campbelltown FG, Orange FG, Survey, Wiki</td>
</tr>
<tr>
<td>does not emphasise the importance of deep learning through practical activities.</td>
<td></td>
</tr>
<tr>
<td>There is substantial evidence of two writing teams, leading to inconsistent</td>
<td>Survey, DEC</td>
</tr>
<tr>
<td>approaches. Some clear and manageable; others complex and far too specific and</td>
<td></td>
</tr>
<tr>
<td>prescriptive.</td>
<td></td>
</tr>
<tr>
<td>Subject-specific feedback</td>
<td>Source/s</td>
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<tr>
<td>-----------------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>Design and Technologies organisation of content</strong></td>
<td></td>
</tr>
<tr>
<td>There is very little emphasis on making.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>The scope and sequence for Stages 4 and 5 matches NSW existing Technology (Mandatory) and Design and Technology subjects.</td>
<td>Campbelltown FG, Orange FG, Wiki, Survey</td>
</tr>
<tr>
<td>There is an over-emphasis on food in context areas, amounting to 50% of the Design and Technologies time which is 50% of the time for Technologies study.</td>
<td>Campbelltown FG, Orange FG, Wiki, Survey</td>
</tr>
<tr>
<td>The fundamental skills needed to achieve what is specified in content are not specified in the document.</td>
<td>Campbelltown FG, Orange FG</td>
</tr>
<tr>
<td><strong>Digital Technologies organisation of content</strong></td>
<td></td>
</tr>
<tr>
<td>The language is not clear and needs to be refined.</td>
<td>Campbelltown FG, Orange FG, Survey, DEC</td>
</tr>
<tr>
<td>The inclusion of non-visual programming in Years 5 and 6 should be moved to Years 7 and 8.</td>
<td>Campbelltown FG, DEC</td>
</tr>
<tr>
<td>The understanding of binary may be beyond the cognitive level of many students at Years 5 and 6.</td>
<td>Wiki, Survey, Orange FG</td>
</tr>
<tr>
<td>The integration of the theoretical and the practical is not clear.</td>
<td>Campbelltown FG</td>
</tr>
<tr>
<td>There is concern whether regional and remote schools have the bandwidth and access to teach Digital Technologies well.</td>
<td>Orange FG</td>
</tr>
<tr>
<td>The focus on computational and algorithmic thinking may lead to fewer students choosing to study technology subjects, not more.</td>
<td>Orange FG</td>
</tr>
</tbody>
</table>
Content descriptions

Feedback identified that the Digital Technologies content did not clearly indicate that tools of digital technology would be used to produce solutions to real problems in a project-based learning style, but that the development of a computer program was the end in itself. Many respondents expressed frustration that the language of the content for Digital Technologies was complex and excessive and would challenge teachers, especially in K–6. The nature of the content was not challenged, only the words used to describe it. The separation of Digital Technologies from Design and Technologies would more likely lead to Digital Technologies being taught without or out of context.

Design and Technologies content was well accepted, with most respondents identifying existing NSW practices in Science and Technology K–6, Technology (Mandatory) and Design and Technology, and Information and Software Technology Stage 5.

<table>
<thead>
<tr>
<th>Summary of feedback</th>
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</thead>
<tbody>
<tr>
<td>The cognitive requirements of the content from Foundation to Year 2 are too great. Foundation should be separate from Years 1 and 2.</td>
<td>Campbelltown FG, DEC</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Subject-specific feedback</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Design and Technologies content descriptions</strong></td>
<td></td>
</tr>
<tr>
<td>There is emphasis on ‘why’ we use technologies but not enough to develop ‘how’ to use design and technologies or the skill development of students to help Australia address skills shortages.</td>
<td>Campbelltown FG</td>
</tr>
<tr>
<td>This is a backwards step compared to the range of context areas studied in Technology (Mandatory); it is too narrow.</td>
<td>Campbelltown FG</td>
</tr>
<tr>
<td>There is too much content and depth of understanding expected from F–6, substantial amounts of this content should be in the Years 7 and 8 or 9 and 10 content descriptions.</td>
<td>Survey</td>
</tr>
<tr>
<td>The word ‘manual’ and digital presentation should be changed/reworded. Suggest ‘hard copy and digital presentations’ of ideas and concepts.</td>
<td>Survey</td>
</tr>
<tr>
<td>Subject-specific feedback</td>
<td>Source/s</td>
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<tr>
<td>------------------------------------------------------------------------------------------</td>
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</tr>
<tr>
<td><strong>Digital Technologies content descriptions</strong></td>
<td></td>
</tr>
<tr>
<td>There is too much content.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>The language used in Digital Technologies content is too verbose, complex, multifaceted</td>
<td>Campbelltown FG, Wiki, DEC</td>
</tr>
<tr>
<td>and repetitive. If students do some computer programming don’t they do computational and</td>
<td></td>
</tr>
<tr>
<td>algorithmic thinking?</td>
<td></td>
</tr>
<tr>
<td>Many teachers will have no knowledge.</td>
<td>Campbelltown FG, Wiki</td>
</tr>
<tr>
<td>These concepts are too difficult for lower-ability students.</td>
<td>Wiki</td>
</tr>
<tr>
<td>The key concepts of abstraction, data collection, specification,</td>
<td>Survey</td>
</tr>
<tr>
<td>digital systems and interactions are very different to Design and Technologies and need</td>
<td></td>
</tr>
<tr>
<td>rewording to match the spirit of Design and Technologies.</td>
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**Achievement standards**

The majority of respondents indicated that the achievement standards, particularly in Digital Technologies, were set too high for the particular age groupings. They seemed aspirational rather than realistic. Design and Technologies achievement standards are considered more achievable and appropriate.
Catering for the full range of students

Feedback identified that the draft curriculum does not cater for the diversity of learners. Achievement standards were set to the highest level rather than stating a minimum standard to be achieved. It was not clear how students who may be particularly talented in Technologies could accelerate.

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<tbody>
<tr>
<td>It does not acknowledge the learning needs of capable or high-order students.</td>
<td>Survey, Wiki</td>
</tr>
<tr>
<td>The section for gifted and talented education needs to be stronger; the project-based and student-centred approach of technology education provides opportunities for talented students to excel.</td>
<td>DEC, Survey, Wiki, ACCE</td>
</tr>
</tbody>
</table>

General capabilities and cross-curriculum priorities

Some confusion between the role of Information and Communication Technology (ICT) capability and the role of Digital Technologies exists. Respondents felt that the Sustainability priority should remain a focus of Technologies education nationally. Respondents indicated that Design and Technology subjects naturally integrate learning from the broad curriculum and life experiences. They were comfortable with the bulk of the capabilities expressed and could see where they fit in Technologies education. Some feedback indicated that the cross-curriculum priority Aboriginal and Torres Strait Islander Histories and Cultures could be better represented in content. There is also scope to increase the link between Sustainability and the overarching concept of preferred futures.

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</thead>
<tbody>
<tr>
<td>The general capability links are clearly explained and wide-ranging with the exception of the application of scientific and mathematical principles in creating new products.</td>
<td>Survey, DEC</td>
</tr>
<tr>
<td>The links to other learning areas indicate that technology can be used in all areas. It needs to be made clear that there is a difference between the use of a technology and learning about the technology.</td>
<td>Survey, Orange FG, ACCE</td>
</tr>
<tr>
<td>The current key ideas do not effectively provide opportunities to integrate learning between Digital Technologies and Design and Technologies.</td>
<td>ACCE, IIATE</td>
</tr>
<tr>
<td>The distinction between the ICT general capability and Digital Technologies needs to be clear. Similar concern exists between Media Arts use of Multimedia and the technological aspects of Multimedia commonly taught in Technologies subjects.</td>
<td>ACCE, DEC, IIATE, Survey.</td>
</tr>
</tbody>
</table>
Other comments

Respondents provided a wide range of comments relating to the lack of clarity of language and the wide gap between the Digital Technologies and Design and Technologies. The draft Australian Curriculum: Technologies does not yet meet the needs of teachers, curriculum developers and systems.

It was clear in the consultations that participants are concerned over a lack of clarity, the use of uncommon terminology and the apparent increase in breadth of curriculum to be achieved in the same time allocation. They saw implications for teacher training and retraining, for professional development programs and support requiring many hours of intensive learning and practice. There were few, however, who were unwilling to participate and engage with the concepts put forward. Many understood that the full breadth of this curriculum, as presented, is occurring in pockets around the nation. Few could identify one practitioner who could cover everything specified. The implication being that more specialist teachers in both secondary and primary may be required.

It was recommended by many that structural improvements be made to support content being combined to more readily facilitate integration, projects and project-based learning.

The continuation of the integration of Digital Technologies within a Design and Technologies curriculum was very strongly supported during the consultations.