

# Primary Specialisation

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## Graduate outcomes stimulus paper

### Context

The 2015 *Standards and Procedures for Accreditation of Initial Teacher Education Programs in Australia*, agreed to by Education Council in December 2015, require that primary initial teacher education (ITE) programs provide all primary graduates with a subject specialisation (Standard 4.4). The *Guideline: Primary Specialisation* further explains the requirements of this Program Standard.

The Program Standard does not specify how programs should be structured to incorporate primary specialisation. Providers have flexibility to design the program structure to best suit their context. In the assessment of this Program Standard at accreditation, the focus is on ensuring that graduates with a primary specialisation can demonstrate appropriate outcomes in terms of expert content knowledge, pedagogical content knowledge and highly effective classroom teaching, that will lead to a positive impact on student learning.

In order to prompt thinking about the outcomes that graduates with a primary specialisation may achieve, this stimulus paper has been developed in consultation with accrediting organisations, initial teacher education providers, initial teacher educators, and subject associations.

The paper identifies possible features of graduates with a primary specialisation. It is not intended as a comprehensive list, and is not binding.

In considering the skills and knowledge of graduates with a primary specialisation, it is important to note that graduate teachers are required to meet the Graduate career stage of the Australian Professional Standards for Teachers (APST), and it is not an expectation that graduates with a primary specialisation will surpass this career stage.

### Common features across learning areas

Features common to graduates with a primary specialisation in any learning area may include:

- capacity to understand, evaluate and improve the impact of their teaching on student learning
- enhanced confidence and enthusiasm for their subject area and the teaching of that subject area
- deep subject area knowledge
- appreciation of their subject area that includes but is not confined to an understanding of its usefulness
- interest in continued professional learning in their subject area
- ability to assess student learning and identify potential strategies for increasing the impact of their teaching on individual students
- ability to draw on a wider range of resources and know where to go to do so
- ability to articulate the evidence behind their practice to be able to explain the rationale for their approach
- capacity to share their knowledge with other teachers.

## Priority learning areas

AITSL has worked with stakeholders to develop possible features of graduates with a primary specialisation in the learning areas of mathematics/numeracy, science and English/literacy. The features below should be read in the context of graduate teachers with a specialisation in comparison to graduates without a specialisation in that subject area.

The Program Standard is written in terms of 'Expert content knowledge,' 'Pedagogical content knowledge' and 'Highly effective classroom teaching', and the features identified below are organised in this structure.

### Mathematics/numeracy

While the focus of these features is on mathematics, the central role of mathematics in the development of the general capability of numeracy as described in the Australian Curriculum is recognised.<sup>1</sup> It can therefore be anticipated that graduates with a specialisation in mathematics will contribute to strengthening numeracy outcomes for students.

#### Expert content knowledge

Possible features of graduate primary teachers with a specialisation in mathematics may include:

- deep understanding of the nature of mathematics and how this is encapsulated in the proficiency strands<sup>2</sup> of the curriculum.
- capacity to see the connections between key concepts in the mathematics curriculum
- capacity to creatively integrate mathematics across other subject areas.
- ability to capitalise on and orchestrate opportunities for mathematics learning across all primary year groups.
- capacity to advocate for research informed mathematics teaching.
- deep understanding of the research basis for mathematics curricula and pedagogies.
- deep understanding of mathematical concepts and processes used to develop mathematical knowledge, for example generalisation, deduction, logic, and chains of reasons

#### Pedagogical content knowledge

Possible features of graduate primary teachers with a specialisation in mathematics may include:

- knowledge of how to teach mathematics including pedagogies appropriate to specific groups of learners. These could include Indigenous students, students with special needs, or students from language backgrounds other than English.
- knowledge of a broad range of teaching strategies that enable students to develop an appreciation of and enthusiasm for the discipline of mathematics.

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<sup>1</sup> <http://www.australiancurriculum.edu.au/>

<sup>2</sup> The proficiency strands are **Understanding**, **Fluency**, **Problem-solving** and **Reasoning**. They are an integral part of mathematics curriculum across the three content strands: *Number and Algebra*, *Measurement and Geometry*, and *Statistics and Probability* and encapsulate what it means work mathematically. They are defined at <http://www.australiancurriculum.edu.au/mathematics/key-ideas> and also in relation to the content at each at year level (See: <http://www.australiancurriculum.edu.au/mathematics/curriculum/f-10?layout=1>).

- comprehensive knowledge of strategies to enable all students to develop mathematical proficiency (as defined by the proficiency strands of the *Australian Curriculum: Mathematics*) and that positively impact on those students' mathematical proficiency.
- strong capacity to design assessments and to interpret and use assessment data from a broad range of sources to inform planning and teaching including differentiating teaching for students with particular mathematics learning needs.
- strong knowledge of students' typical developmental pathways and common difficulties in learning mathematics.
- strong knowledge of age-appropriate mathematics pedagogy (for example the relevant selection of a range and balance of explicit teaching, play, inquiry, project-based) for the stages of primary schooling: early years; middle; and upper primary.

### **Highly effective classroom teaching and capacity to impact student learning**

It is anticipated that graduate primary teachers with a specialisation in mathematics will demonstrate highly effective teaching based on their content and pedagogical content knowledge. Key underpinning features may include:

- capacity to have a positive impact on student learning in mathematics
- enthusiasm for mathematics teaching,
- belief in the capacity of all students to learn mathematics,
- commitment to engage with and contribute to the profession of mathematics teaching and
- enhanced confidence as teachers of mathematics and in their capacity to work with colleagues to plan for, assess, and constantly improve mathematics teaching.

## **Science**

### **Expert Content Knowledge**

Possible features of graduate primary teachers with a specialisation in science may include:

- deep understanding of science concepts and the processes used to develop scientific knowledge.
- deep understanding of science's contribution to our culture, society and economy as well as its influence in our lives.
- capacity to make connections and creatively integrate science across other Key Learning Areas
- curiosity in seeking to learn about and understand the natural world.
- capacity to contribute to the design and provision of high quality primary science education.
- capacity to critique science curriculum, programs, teaching resources, pedagogies and practices.
- understanding of and capacity to articulate the theoretical and research basis for science curriculum and effective pedagogies.
- understanding of ways in which Aboriginal and Torres Strait Islander science, traditional knowledge and western scientific knowledge can be complementary.

## **Pedagogical content knowledge**

Possible features of graduate primary teachers with a specialisation in science may include:

- comprehensive knowledge of how to enable students to achieve requirements of the curriculum.
- extensive understanding of science concepts relevant to primary science, and the extent to which these are encapsulated in the curriculum<sup>3</sup>.
- deep understanding of scientific inquiry and the extent to which this is encapsulated in the curriculum.
- understanding of the ways in which scientists pursue the production of trustworthy knowledge and the extent to which these are encapsulated in the curriculum.
- capacity to capitalise on and orchestrate opportunities for science learning across all primary year groups including the selection of a range and balance of explicit teaching, play, inquiry, problem-based, project-based strategies for early years; middle primary; and upper primary.
- thorough understanding of learning in science, including students' conceptions, the diagnosis of barriers to and enablers of science learning.
- capacity to implement assessment processes to improve science teaching and learning.
- capacity to work with colleagues to plan for, to evaluate and to improve science teaching and learning.
- capacity to organise and manage spaces, materials and equipment required for the teaching and learning of science.
- capacity to use digital technologies to enhance science teaching and learning.
- knowledge of teaching strategies that enable students to develop an appreciation of and enthusiasm for science.

## **Highly effective classroom teaching and capacity to impact student learning**

It is anticipated that graduate primary teachers with a specialisation in science will demonstrate highly effective teaching based on their content and pedagogical content knowledge. Key underpinning features may include:

- capacity to evaluate and improve the impact of their teaching on student learning.
- ability to differentiate learning experiences for students.
- confidence in and enthusiasm for science teaching.
- ability to facilitate science learning and teaching transitions from pre- to primary and from primary to secondary schooling.

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<sup>3</sup> Primary curriculum refers to the primary elements of the Foundation to Year 12 Australian Curriculum or alternative curriculum frameworks that have been assessed by the Australian Curriculum, Assessment and Reporting Authority (ACARA) as meeting the requirements of the Australian Curriculum or any curriculum authorised by jurisdictional authorities.

## English/ Literacy

The Australian Curriculum requires teachers in all curriculum areas to apply literacy as a General Capability, as well as one of the three strands. It is anticipated that graduates with a specialisation in English will purposefully contribute to reinforcing literacy outcomes for students across the primary curriculum.

### ***Expert content knowledge***

Possible features of graduate primary teachers with a specialisation in English/literacy may include:

- knowledge and understanding of essential concepts and key ideas for the teaching of English in primary school
- sound knowledge of the metalinguistic foundations of the English language and the research base underpinning the essential components of effective early reading instruction including oral language, phonemic awareness, phonics, fluency, vocabulary, and comprehension
- detailed knowledge of the alphabetic code of written English, the linguistic constructs that describe the English language, the spelling conventions of written English, and its etymological and morphological foundations.
- solid understanding of the multi-disciplinary research on how children learn to read as well as the scientific evidence base supporting effective early reading instruction.
- sufficient understanding of language and reading development to identify areas of strength and weaknesses in children's reading progress and apply the appropriate interventions.
- knowledge of Australian literature, including the oral narrative traditions and contemporary literature of Aboriginal and Torres Strait Islander Peoples
- Deep appreciation of the changing nature of English as a language and the changing world of literacy
- knowledge of effective English and literacy pedagogies that have proven efficacy for progressing students' reading, viewing and writing achievement, and a deep understanding of their evidence base.
- capacity to seize opportunities for literacy learning across all primary year groups and across curricula
- knowledge of classroom assessment, including knowledge of different forms and purposes of formative and summative assessments, and curriculum-based and curriculum-based standardised assessments, how assessment impacts students' motivation and learning around literacy

### ***Pedagogical content knowledge***

Possible features of graduate primary teachers with a specialisation in English/literacy may include:

- deep knowledge of a comprehensive range of evidence-based teaching strategies with an emphasis on:
  - fluency in letter-sound correspondences of English language and spelling conventions
  - an expanding vocabulary and grasp of grammatical and textual patterns sufficient to understand and learn from texts encountered in and out of school

- fluency and innovation in listening to, reading, viewing and creating texts for different purposes and contexts
- comprehensive knowledge of strategies to enable all students to attain high levels of literacy proficiency and proficiency in English
- capacity to teach English and literacy as a General Capability, and with an emphasis on supporting less capable students by using:
  - knowledge of pedagogies appropriate to meet the literacy needs of diverse learners in classrooms and particular groups of learners that may include Indigenous students, students with special needs, and/or English as an Additional Language or Dialect students
  - skills to diagnose problems or difficulties, and identify potential strategies for intervention and remediation
  - an ability to locate and draw on a wide range of resources to support instruction and assist colleagues.
- knowledge of pedagogies that support and enhance capabilities of advanced and gifted and talented students of English
- capacity to use curriculum, assessment and reporting knowledge to design effective learning sequences, units of work and assessments within English and across curricula, and to interpret and use assessment data

### **Highly effective classroom teaching and capacity to impact student learning**

It is anticipated that graduate primary teachers with a specialisation in English/ literacy will demonstrate highly effective teaching based on their content and pedagogical content knowledge. Key underpinning features may include:

- enthusiasm for the teaching of English
- capacity to identify and assess challenges related to under-performing students, and opportunities for assisting high-performing students
- teacher professionalism indicative of their commitment to engage with and contribute to the profession of English and literacy educators
- confidence as teachers of English in their capacity to work with colleagues to plan for, assess, and constantly improve teaching and learning associated with the study of English.