National Assessment Program

Civics and Citizenship 2024

Technical Report



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Acknowledgement of Country

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List of acronyms

Acronym	Full form	
AC	Australian Curriculum	
AC: CC	Australian Curriculum: Civics and Citizenship	
AC: HASS	Australian Curriculum: Humanities and Social Sciences	
ACARA	Australian Curriculum, Assessment and Reporting Authority	
ACER	Australian Council for Educational Research	
ASGS	Australian Statistical Geography Standard	
IEA	International Association for the Evaluation of Educational Achievement	
KPM	Key Performance Measure	
NAP	National Assessment Program	
NAPLAN	National Assessment Program Literacy and Numeracy	
NAP-CC	National Assessment Program Civics and Citizenship	
NAP-ICTL	National Assessment Program Information and Communication Technology Literacy	
NAP-SL	National Assessment Program Science Literacy	
PMRT	Performance Measurement and Reporting Taskforce	
SEIFA - IEO	Socio-Economic Indexes for Areas – Index of Education and Occupation	
SRC	Student Representative Council	
V8.4	Australian Curriculum Version 8.4	
V9.0	Australian Curriculum Version 9.0	

Terms used in this report

Term	Definition	
Assessment platform	The online National Assessment Platform enables the online delivery of National Assessment Program events including NAP-CC, NAP-SL and NAPLAN.	
Confidence interval	An estimate derived from a sample is subject to uncertainty because the sample may not reflect the population precisely. The extent to which this variation exists is expressed as the confidence interval. The 95% confidence interval is the range within which the estimate of the statistic based on repeated sampling would be expected to fall for 95 of 100 samples that might have been drawn. Confidence intervals are provided in each of the data tables in this report.	
Correlation coefficient	A statistical measure that indicates the degree to which 2 variables are related. The values range between -1.0 (a perfect negative correlation) and 1.0 (a perfect positive correlation). A coefficient of 0.0 shows no linear relationship between the 2 variables being studied.	
Exempt	Students with very limited English language proficiency and students with significant intellectual or functional disabilities may be exempted from NAP sample testing.	
Geographic location	The Australian Statistical Geography Standard (ASGS) Remoteness Structure is used to classify relative geographic remoteness across Australia. In this report, the 5 classes (major cities, inner regional, outer regional, remote and very remote) are collapsed into 3 classes (major cities, regional and remote) for the purposes of classifying the remoteness of individual schools.	
Indigenous status	A student's Indigenous status refers to whether a student identifies as being of First Nations Australian Aboriginal and/or Torres Strait Islander origin. The term "origin" is considered to relate to people's First Nations Australian Aboriginal or Torres Strait Islander descent and for some, but not all, their cultural identity. A student who identifies as a First Nations Australian student is also considered to be of Aboriginal and/or Torres Strait Islander origin.	
Jurisdiction	For the purposes of this report, jurisdiction refers to all 3 educational sectors (government, Catholic and independent) that sit within an Australian state or territory. The state/territory level is the most granular level of analysis undertaken for the purposes of NAP sample reporting.	
Language other than English spoken at home	A language other than English spoken in the home by a student. If a student speaks more than one language other than English at home, the language other than English the student speaks most often is reported.	
Limited assessment language proficiency	The student is unable to read or speak the language of the assessment and would not be expected to overcome the language barrier in the assessment situation. Typically, a student who had	

Term	Definition
	received less than one year of instruction in the language of the assessment would be excluded.
Locked Down Browser	A secure test player in which students take NAP online tests. It is designed to prevent access to all other applications, tools such as spellcheck, web pages and software while the student is taking the test
NAP-CC Assessment Framework	The overarching assessment design that describes the content to be assessed, the cognitive engagement that is expected of students, the types of assessment items, contextual information and overall structure of the assessment.
NAP-CC scale	A continuous scale that provides a measure of student achievement in civics and citizenship.
Parental education	The highest level of parental school or non-school education that a parent/guardian has completed. This includes the highest level of primary or secondary school completed or the highest post-school qualification attained. For the purposes of this report, where a student has parental education data for 2 parents/guardians, the higher of the 2 values is used.
Parental occupation	The occupation group that includes the main work undertaken by the parent/guardian. If a parent/guardian has more than one job, the occupation group that reflects their main job is reported. For the purposes of this report, where a student has parental occupation data for 2 parents/guardians, the higher of the 2 values is used.
Percentage	A number or ratio that can be expressed as a fraction of 100. In this report, the percentages of students represented in the tables have been rounded and may not always sum to 100.
Percentage point	The unit of measurement used to describe the difference between 2 percentages.
Proficiency level	A defined range of the NAP-CC scale that describes the knowledge and competencies that students at that level are capable of successfully demonstrating.
Proficient standard	A point on the scale that represents a "challenging but reasonable" expectation of student achievement at that year level.
Rasch Item Response Theory	The Rasch model of Item Response Theory is a psychometric model for analysing categorical data. It is the chosen model of analysis for cognitive and contextual data across all NAP sample assessments.
Response rate	Response rates are the percentages of sampled students that participated in the assessment. Response rates are calculated as the number of assessed students from whom data was recorded as a percentage of the total number of sampled students in the year level.
Sample	A subset of a population selected so that reliable and unbiased estimates of statistics for the full population can be inferred.
Sector	The 3 educational sectors of government, Catholic and independent. All schools throughout Australia belong to one of these 3 school

Term	Definition
	sectors. It is important to note that student responses for NAP sample assessments, in their most disaggregated form, are not analysed or reported by sector but are instead examined at the jurisdictional level.
Severe functional disability	A moderate to severe permanent physical disability that severely limits a student's capacity to participate in the test.
Severe intellectual disability	A mental or emotional disability and/or cognitive delay that severely limits a student's capacity to participate in the test.
Significant	In this report, the term significant refers only to differences that are statistically significant. The significant difference is the likelihood of a difference being a true reflection of the measured outcomes rather than the result of chance. Once a difference has been identified as statistically significant, the size of this difference (ranging from a small to very large effect size) can be considered.
Standard deviation	A measure of variability or dispersion in student scores from the mean (or average).
Test form	A collection of selected items sequenced, balanced and grouped together to measure a student's knowledge, skills and understanding of a subject area.
Trend item	An item (test question) used in at least one of the previous NAP-CC assessment cycles.

Chapter 1: Introduction

The National Assessment Program

The National Assessment Program (NAP) was established to measure student achievement and to monitor progress towards the education goals first outlined in the 1999 Adelaide Declaration on National Goals for Schooling in the 21st Century. As part of the NAP, ministers for education in Australia agreed that nationally comparable data across jurisdictions would be collected in the domains of literacy, numeracy, science literacy, information and communication technology (ICT) literacy, and civics and citizenship.

The NAP-Civics and Citizenship (NAP-CC) assessment is one of 3 national sample assessments developed and managed by the Australian Curriculum, Assessment and Reporting Authority (ACARA) under the auspices of the Education Ministers Meeting. Together with the NAP-Science Literacy (NAP-SL) and the NAP-Information and Communication Technology Literacy (NAP-ICT Literacy), the NAP-CC assessment supports the measurement of progress towards the goals first set out in the Adelaide Declaration. These goals were upheld in the subsequent Melbourne Declaration (2008) and Alice Springs (Mparntwe) Education Declaration (2019), and they continue to provide the impetus for the NAP sample assessments.

Background to the NAP-CC 2024 assessment

The first collection of data for NAP-CC occurred in 2004, with subsequent cycles of the assessment conducted on a rolling 3-yearly basis in 2007, 2010, 2013, 2016 and 2019. Due to disruptions caused by the COVID-19 pandemic, a 5-year gap exists between the 2019 and 2024 cycles of NAP-CC.

The NAP-CC 2024 assessment is the third NAP sample assessment to occur since the 2-year pandemic hiatus, following the NAP-ICT Literacy assessment in 2022 and the NAP-Science Literacy assessment in 2023. It is also the second of the NAP sample assessments to shift to the earlier testing window of May, a shift of 5 months from the previous cycles of the assessments, which took place in October. For this reason, changes in achievement between 2024 and previous cycles of the NAP-CC assessment should be interpreted with some caution.

Sample

The NAP-CC 2024 assessment was based on a nationally representative sample of 607 participating schools with 9844 participating students, of which 5294 were from Year 6 and 4550 were from Year 10. The weighted national school response rate when including substitute schools was 87% for Year 6 and 78% for Year 10.

Sampling followed a 2-stage cluster sampling design to ensure that each eligible student had an equal chance of being selected in the sample. In the first stage of sampling, schools were selected from a list of all schools in each jurisdiction with a probability proportional to the number of students in the relevant year level enrolled at that school. In the second stage, 20 students¹ were selected with equal probability from a list stratified by gender for each target year level.

Stages of assessment development and implementation

For any large-scale assessment, a series of delineated stages must be planned in order to deploy the assessment in the field, and then to analyse and report on the data collected. For NAP-CC 2024, the development, implementation, analysis and reporting of the assessment can be separated into 6 distinct stages, namely:

¹ Or up to 20 students when schools had fewer than 20 students in the year level.

- Stage 1: the review and revision of the assessment framework
- Stage 2: the development of items, units, clusters and test forms for field trial deployment
- Stage 3: the implementation of the field trial in order to trial both test items and operational procedures
- Stage 4: the psychometric analysis of field trial test items and subsequent selection of content for main study deployment
- Stage 5: the implementation of the main study in a scientific sample of schools and students across Australia
- Stage 6: the psychometric analysis of main study data, production of school summary reports and development of public reports.

A description of, and approximate timeframe for, each of the 6 stages is provided in Table 1.1.

Table 1.1: Stages of NAP-CC 2024 development

No.	Stage	Description	Timeframe
1	Assessment framework review	 ACER, ACARA and the NAP-CC Working Group worked together to review, revise and enhance the NAP-CC assessment framework. The revised framework is aligned with AC:CC and AC:HASS v8.4 and also coherent with developments in v9.0. 	Dec 2022 – Apr 2023
2	Test development	 A total of 194 new items were developed to complement the inclusion of secure trend items that had been used in previous cycles. With input and guidance from ACARA and the Working Group, ACER reviewed the previous student questionnaires. Where possible, questions were retained without major changes. Some edits were required to update wording or retain relevance to a 2024 audience. Other questions were added so that themes such as students' use of the internet and social media, and different topics related to civics and citizenship at school could be explored. Both the assessment and questionnaire content were authored in the assessment platform. Extensive quality assurance (QA) and user acceptance testing (UAT) was then performed across a variety of device types. 	Jan - Sep 2023

No.	Stage	Description	Timeframe
3	Field trial	 A field trial was conducted in sampled schools to trial both the assessment instruments and related operational procedures. In total, 1495 Year 6 students and 1314 Year 10 students from 119 schools participated in the trial (60 from Year 6, 59 from Year 10). Schools in NSW, Vic, Qld, WA and SA were selected to participate to avoid burdening the comparatively oversampled schools from the smaller jurisdictions. Trained Quality Monitors attended over 5% of test sessions in schools to provide feedback on adherence to test protocol, occurrence of technical issues and levels of student engagement. A centre-based marking operation was implemented for extended response items. A total of 50 items were marked by a team of trained markers with rigorous quality assurance processes implemented. 	Test administration: 16 Oct - 31 Oct 2023 Marking operation: 2 Nov - 10 Nov 2023
4	Item analysis and instrument revision	 All field trial data was consolidated, cleaned and processed in line with agreed data processing protocol. All cognitive (assessment) and contextual (questionnaire) data was psychometrically analysed to determine the success of each item. The NAP-CC Working Group met to review the item analysis and discuss ACER's item inclusion/exclusion recommendations. Main study item selection was confirmed and final test forms were constructed. Test forms were designed to ensure inclusion of vertical and historical links, broad equity of content, difficulty, length and score points, and the avoidance of enemy items. 	Nov 2023 - Feb 2024

No.	Stage	Description	Timeframe
5	Main study	 In total, 607 schools from across Australia participated in the main study. This included 319 schools at a Year 6 level and 288 at a Year 10 level². 	Test administration: 6 - 24 May 2024
		 A total of 181³ new items and 74 trend items were administered across 24 test forms. Trained Quality Monitors attended 35 test sessions in schools across all states and territories in Australia. Again, they reported back on test protocol adherence, technical issue occurrence and the level of student engagement in the assessment. Trained centre-based markers marked all main study extended response items. A total of 62 items were marked with rigorous quality assurance processes implemented. 	Marking operation: 29 May - 14 Jun 2024
6	Data analysis and public reporting	 All cognitive and contextual data was collated, cleaned, processed and analysed by psychometricians. School summary reports were developed and distributed to participating schools at the beginning of term 3. Two reports were developed for publication. The NAP-CC 2024 Public Report (ACARA 2025) contains findings from NAP-CC 2024 including comparisons, where appropriate, with findings from previous assessment cycles. This NAP-CC 2024 Technical Report provides more detailed information about the technical processes and analytical procedures applied in the study. 	Jun - Aug 2024

 ² For the purposes of reporting, schools that were sampled and participated at both year levels were included in both the Year 6 and Year 10 figures (that is, they were counted twice).
 ³ A total of 255 items were administered including item x00231387, a 2-part extended constructed item. Each

³ A total of 255 items were administered including item x00231387, a 2-part extended constructed item. Each part (x0023138701 and x0023138702) was scored and analysed with resulting data for each part. The report references results for 256 items, as also listed in Appendix F.

Reporting the NAP-CC 2024 results

To report on student achievement for this and previous cycles, a NAP–CC reporting scale was established using methods based on the one-parameter item response theory model (the Rasch model). In 2004, the Year 6 cohort was defined as having a mean scale score of 400 and a standard deviation of 100 scale score units. The Year 10 mean and standard deviation in 2004 were determined by the performance of Year 10 relative to the Year 6 parameters. Using common item equating procedures (for secure trend items administered in more than one testing cycle) the results for NAP–CC 2024 are reported on the scale established in 2004. Consequently, the results from NAP–CC 2024 are directly comparable with those from all 6 previous cycles of NAP–CC (2019, 2016, 2013, 2010, 2007 and 2004).

It was also possible to describe students' achievement according to 6 proficiency levels. Summary descriptions for levels 1 to 5 of the NAP–CC scale were established in the first cycle of NAP–CC in 2004. A description for "below level 1" achievement was developed in 2007 when more test material was available to support this description. Each level description provides a synthesised overview of the civics and citizenship and history knowledge and understanding that a student working within the level is able to demonstrate. The proficiency level descriptors were updated in 2013 to reflect the larger pool of items that had been developed over the cycles since 2004. In 2019, the scale descriptors were further revised to reflect the inclusion of items from the NAP–CC History sub-strand of the revised NAP–CC Assessment Framework.

In addition to deriving the NAP-CC scale, proficient standards were established in 2004 for Year 6 and Year 10. The proficient standards "represent a 'challenging but reasonable' expectation of student achievement at a year level with students needing to demonstrate more than elementary skills expected at that year level" (ACARA 2019:5). The proficient standard for Year 6 is 405 scale points, which is the boundary between levels 1 and 2 on the NAP-CC scale. The proficient standard for Year 10 is 535 scale points, which is the boundary between levels 2 and 3 on the scale. Year 6 students performing at level 2 and above, and Year 10 students performing at level 3 and above, have consequently met or exceeded their relevant proficient standard. Further details of the proficient standards are provided in Chapter 6.

The cognitive and contextual findings from the 2024 NAP–CC assessment are reported in the NAP–CC 2024 Public Report (ACARA 2025). Student achievement for Year 6 and for Year 10 are reported at the national level and by the following population subgroup categories: jurisdiction, gender, Indigenous status, language spoken at home, school geographic location, and parental occupation and education. Results of the student questionnaire for Year 6 and for Year 10 were reported at the national level⁴ and by gender only. Where relevant, measures of the association between information from the student questionnaire and student achievement were also reported.

Purpose and structure of the technical report

This technical report complements the NAP-CC 2024 Public Report (ACARA 2025). The purpose of the public report is to summarise the cognitive and contextual analysis of the data collected in the NAP-CC 2024 sample assessment, while the purpose of this report is to describe the technical aspects of the assessment. This report outlines the main activities involved in the assessment design, sampling, data collection, and the analysis and reporting phases of the assessment. The structure of this report is as follows:

Chapter 1 introduces the NAP-CC assessment and provides an overview of content within this report.

Chapter 2 summarises the development of the assessment framework and describes the process of item development and construction of the instruments.

⁴ Percentages for the questionnaire index introduced in 2024 – classroom exposure to civics and citizenship – were also reported by jurisdiction.

Chapter 3 outlines the sample design and describes the sampling process. It also describes the weighting procedures that were implemented to derive population estimates and the calculation of response rates.

Chapter 4 describes the data collection, processing and management procedures used. This includes the steps taken to ensure strict data security protocol was followed, as well as the various methods of data capture that were employed before, during and after the administration of the assessment. The procedures employed in the transfer, tracking, verification, cleaning and transformation of the data are also outlined.

Chapter 5 describes the scaling model and procedures, item calibration, the creation of plausible values and the standardisation of student scores. It discusses the procedures used for horizontal (2024 to 2019, 2016, 2013, 2010, 2007 and 2004) equating and the procedures for estimating equating errors.

Chapter 6 outlines the NAP-CC proficiency levels and proficient standards.

Chapter 7 outlines the reporting of student results, including the procedures used to estimate sampling and measurement variance, and the multivariate analyses conducted with data from NAP-CC 2024.

Chapter 2: Assessment framework and instrument design

The main objective of NAP-CC is to monitor, measure and report trends in civics and citizenship achievement for Year 6 and Year 10 students across Australia. The assessment is an important source of information about what Australian students know, understand and can do in the context of civics and citizenship. It seeks to measure students' cognitive competencies in civics and citizenship by assessing both students' knowledge in this area and their capacity to use this knowledge as they engage in processes of civics and citizenship.

The NAP-CC assessment is also concerned with measuring certain skills that students need, at different stages of their education, to judge, interrogate and make decisions about important civic and citizenship issues.

In addition to testing students' knowledge of civics and citizenship, NAP-CC administers a questionnaire to understand students' attitudes to, and engagement with, civics and citizenship processes both at school and outside of school. Student achievement data in civics and citizenship is analysed with additional background information on student demographic factors, geographic location and school size, all of which are considered during sample selection. This allows for the analysis of contextual factors that influence students' educational outcomes to be considered in relation to civics and citizenship achievement.

The NAP-CC Assessment Framework

The NAP-CC 2024 Assessment Framework was the central reference for development of the NAP-CC 2024 assessment and questionnaire instruments. While the NAP-CC described proficiency scale was used as an indicator of item difficulty, the assessment framework was used as the substantive basis for instrument construction, ensuring appropriate coverage of all relevant content dimensions and cognitive skill areas.

New frameworks for assessing civics and citizenship were developed in 2010 and 2018. The framework was updated for NAP-CC 2024. It maintains elements of both the 2010 and the 2018 assessment frameworks⁵ but contains refined specifications for both the Year 6 and the Year 10 civics and citizenship assessments.

The 2024 framework describes the content to be assessed, the cognitive engagement that is expected of students, the types of assessment items used, the contextual information to be collected, and the overall structure and purpose of the assessment. Drawing on insights from the Alice Springs (Mparntwe) Education Declaration on national education goals for all Australians (Education Council 2019), the 2024 framework mirrors recent enhancements to the Year 3 to Year 10 Australian Curriculum (AC). As such, it continues to provide the basis for an effective measure of students' civics and citizenship achievement over time.

In the 2024 framework, as in previous frameworks, it is acknowledged that states and territories sometimes vary their curriculum from that identified in the Australian Curriculum: Civics and Citizenship. Schools, and individual teachers, can vary their teaching practices and curriculum application according to state and territory curriculum guidelines. The NAP-CC 2024 Assessment Framework aims to deal with these differences by including only item content that is taught in all Australian states and territories. Assessment content and contexts may be drawn from version 8.4 of the Australian Curriculum; however, no item relies on content that students would not reasonably expect to have been taught.

⁵ See section 1.3.1 of the NAP-CC 2024 Assessment Framework for further information about the updated framework's continuity with the previous frameworks of 2010 and 2018.

NAP-CC content dimension

The NAP-CC content dimension describes the content domain — the specific subject matter, including knowledge and understanding, to be covered in the 2024 NAP-CC assessment. The content domain and sub-domains are organised according to the relevant strands and sub-strands of the Australian Curriculum: HASS F-6, the Australian Curriculum: Civics and Citizenship, and the Australian Curriculum: History.

The Australian Curriculum: HASS F-6 and the Australian Curriculum: Civics and Citizenship aim to ensure students develop:

- a lifelong sense of belonging and engagement with civic life as active and informed citizens, in the context of Australia as a secular democratic nation with a dynamic, culturally diverse, multifaith society that has a Christian heritage, and distinct First Nations Australian histories and cultures
- knowledge, understanding and appreciation of the values, principles, institutions and practices of Australia's system of democratic government and law, and the role of the citizen in Australian government and society
- an understanding of the concepts of active citizenship, democracy, global citizenship, legal systems, identity and diversity
- skills including questioning and research; analysis, evaluation and interpretation; civic participation and decision-making; and communicating
- the capabilities and dispositions to participate responsibly in the civic life of their nation at a local, regional and global level, and as individuals in a globalised world.

NAP-CC investigates the origins of our political and legal systems, and explores the nature of citizenship, diversity and identity in contemporary Australian society and beyond. Emphasis is given to the federal system of government, derived from the Westminster system, and the liberal democratic values that underpin it such as freedom, equality and the rule of law (ACARA 2018a and 2018b). The NAP-CC 2024 Assessment Framework and its alignment with the Australian Curriculum: Civics and Citizenship focuses on the content (subject matter) identified in Years 3–5 (the Australian Curriculum: HASS F-6) and Years 7–9 (the Australian Curriculum: Civics and Citizenship) and the intersection with History. It takes into account differences in the approach to the teaching of civics and citizenship across the different states and territories.

The 3 key focus areas in the assessment framework at each year level include government and democracy; laws and citizens; and citizenship, diversity and identity. These focus areas are described in further detail in Table 2.1.

Table 2.1: Key focus areas of the NAP-CC assessment

Focus area	Description
Government and democracy	The core principles and practices that help define the operation of representative government in Australia. This includes institutions, principles and values underpinning Australia's representative democracy such as the key features of the Australian Constitution; the role of democracy in building a socially cohesive and civil society; ways in which individuals, groups and governments make decisions; how governments and parliaments are elected and formed; levels and roles of government; concepts of power, leadership and community service; and the ways in which Australia's legal system contributes to democratic principles, rights and freedoms.
	This key concept is also concerned with the roles and responsibilities of elected representatives, citizens and civic leaders; the roles and responsibilities of the 3 levels of government in Australia, the operation of

Focus area

Description

the federal system and how people can influence the 3 levels; core electoral processes including the secret ballot and compulsory voting; Parliament and the formation of government and how decisions are made at a federal, state/territory and local level; the role of political parties and independents in Australian democracy; and the separation of powers.

Laws and citizens

The reasons for and purposes of rules and laws. The concept includes the social, civic and philosophical bases for rules and laws, and the differences between rules and laws. It includes consideration of the concept of equality before the law; the independence of the judiciary; the presumption of innocence; and the right of appeal and principles of restorative justice. It also involves consideration of the Australian Constitution; the relationships between parliaments, citizens and the law; how and why laws are made and amended; the implementation and enforcement of the law including the role of key personnel in the legal system; and local, national and international influences on and relationships between rules and laws in local, national and international contexts.

Citizenship, diversity and identity

Refers to refers to experiences, values and ideals that help define Australian people, how these have been influenced by social change, and the ways in which concepts of identity and culture in Australia are reflected in civic institutions and processes. The concept includes the following content: the relationship between values, identity and culture in Australia; Aboriginal and Torres Strait Islander Peoples' influences on identity and culture in Australia; the influence of different cultural and ethnic groups on identity and culture in Australia; key events and movements in the development of Australian identity and culture such as the 1967 referendum and abolition of the White Australia policy; multiculturalism in Australia; Australian citizenship; significant Australian people, events, trends and symbols that reflect and influence Australian identity and culture; changing notions of Australian identity.

This key area also is also concerned with how local, national, regional and international communities and developments interact with and influence Australian democracy and examines Australia's relationships with other countries, global trends and events.

Interconnectedness with History curriculum

The Australian Curriculum: HASS F-6 and the Australian Curriculum: History are interconnected with Australian Curriculum: Civics and Citizenship. The study of these curricula provides further opportunities for students to learn about the nation's past and gain an understanding of the attitudes, people and events that have shaped the present.

In NAP-CC, the history items focus on key historical knowledge relating to people, places, values and societal systems. By the end of Year 5, in the Australian Curriculum: HASS F-6, students can describe the significance of people and events or developments in bringing about change. They also have opportunities to identify the causes and effects of change for particular communities, and describe aspects of the past that have remained the same. They describe the experiences of different groups of people in the past. The focus is on the impact of the development of British colonies in Australia on the lives of First Nations Australians, the colonists and convicts, and on the natural environment. As part of the Australian Curriculum: HASS F-6 History sub-strand from Year 3 to 5, students also consider the role of significant individuals or groups, including First Nations Australians and those who migrated to Australia, in the development of events in Australia. They identify the importance of

different celebrations and commemorations for different groups, and they can describe the experiences of an individual or group in the past. The aim is for students to be able to explain how and why life changed in the past and identify aspects of the past that have remained the same.

In Years 7 to 9, the focus of the Australian Curriculum: History is to promote the understanding of societies, movements, ideas and events that have shaped humanity, from the ancient world (including Australia), through the Middle Ages (and the origins of the Westminster system) to the making of the modern world. One of the explicit aims of the Australian Curriculum: History is to equip students for the world (local, regional and global) in which they live, and enable them to develop an understanding of the past and present experiences of First Nations Australian Peoples, their identities and the continuing value of their cultures. It also helps students to appreciate Australia's position in the Asia and Pacific regions, and its global interrelationships. This knowledge and understanding are essential for informed and active participation in Australia's diverse society.

NAP-CC skills dimension

The skill sets encouraged through the teaching of the Australian Curriculum: Civics and Citizenship are:

- 1. Questioning and research: students identify, locate and research a range of sources of information to investigate Australia's political and legal systems.
- 2. Analysis, synthesis and interpretation: students apply critical thinking skills, developing and accounting for different points of view.
- 3. Problem-solving and decision-making: students work collaboratively, negotiate and develop strategies to resolve issues, and plan for action.
- Communication and reflection: students present ideas, viewpoints and arguments based on evidence about civics and citizenship topics and issues using subject-specific language, and reflect on their cultural identity, motivations, values and behaviours.

As outlined in the 2024 Assessment Framework, some of these skills are more relevant to the NAP–CC assessment than others. For instance, there is no requirement in the assessment for research skills, or communication in the direct sense. Rather, the majority of NAP–CC assessment items involve analysis, synthesis and interpretation because students are analysing, synthesising and evaluating the stimulus material in order to answer multiple-choice and constructed response questions.

Assessment instrument

The NAP-CC 2024 assessment instrument was based on the design principles established for previous NAP-CC assessment cycles. The new test content for the 2024 NAP-CC assessment was developed by a team of ACER's expert test developers, many of whom had experience developing NAP-CC items in previous cycles. In conceptualising and authoring the assessment content, the test developers sourced and developed relevant, engaging and focused civics and citizenship and history stimulus materials that addressed the revised framework and the relevant Australian Curriculum codes.

Assessment items and units

A total of 181 new items and 74 trend items were distributed across 24 test forms: 12 at each year level. Year 6 students were required to complete one test form comprising 39 items under a time constraint enforced by the assessment platform of 60 minutes. Year 10 students completed one test form comprising between 41 and 43 items in 75 minutes.

As in previous cycles, the items for the NAP-CC 2024 assessment cycle were developed in units. Each unit comprised one or more assessment item/s that were developed around a single theme or stimulus. In its simplest form, a unit was a single, self-contained item. In its most complex form, a unit

was a piece of stimulus material (text and/or graphic images) with a set of assessment items related to it.

Response formats and item types

Item-response types in the 2024 NAP-CC assessment included multiple-choice, multiple-choices, interactive match (drag and drop) and constructed response formats.

Table 2.2 outlines each of these response formats and lists the item types associated with them, as well as a description of how these item types were used in the NAP-CC assessment instrument.

Table 2.2: NAP-CC response formats and item types

Format	Item type	Description				
Selected response formats	Multiple-choice	Students must select one of 3 or 4 options (word, graphical or pictorial).				
	Multiple-choices	Students must select multiple options from a total of 4 or more options (e.g. "select all that apply").				
	Interactive match (drag and drop)	Students must select, drag and drop words, graphical or pictorial elements for classification purposes or to order items.				
Constructed response formats	Text entry	Students must write responses of between one and 3 characters.				
	Extended constructed	Students must write between one sentence and several paragraphs of text, used for assessing deeper understanding and higher proficiency levels.				

The scores allocated to items varied: all selected response formats (multiple-choice, multiple-choices and interactive match items) had a maximum score of one point for correct responses and zero points for incorrect ones. For constructed response items, students could receive between zero and 3 points.

Cluster rotation within test forms

The NAP-CC instrument used a cluster rotation design where each test form was linked through common clusters to other forms. The assessment items were developed and presented in units that each represented a particular civics and citizenship theme or stimulus. Clusters were constructed by grouping units together. The clusters were then allocated to the different test forms so that each form was broadly equivalent in terms of item format, reading load and overall difficulty. Any potential bias due to position effect was mitigated by changing the order and position of the clusters in the test forms, with clusters sometimes appearing at the beginning, sometimes in the middle and sometimes at the end of a test form. In this way, a balanced, rotated cluster design was implemented across the assessment instruments.

The test form designs for Year 6 and Year 10 are shown in Table 2.3. Clusters that appear in both Year 6 and Year 10 test forms (vertical link clusters) are denoted in red text.

Table 2.3: Test form design for Year 6 and Year 10

Test form	Part A	Part B	Part C	No. of items
Year 6 test for	ms			
1	C01	C06	C02	39
2	C02	C07	C09	39
3	C03	C08	C10	39
4	C04	C09	C08	39
5	C05	C10	C12	39
6	C06	C12	C07	39
7	C07	C11	C04	39
8	C08	C02	C05	39
9	C09	C03	C06	39
10	C10	C04	C01	39
11	C11	C05	C03	39
12	C12	C01	C11	39
Year 10 test fo	orms			
13	C01	C15	C13	43
14	C13	C07	C05	41
15	C03	C16	C15	42
16	C14	C09	C19	41
17	C05	C17	C16	42
18	C15	C19	C07	42
19	C07	C18	C14	42
20	C16	C13	C09	42
21	C09	C01	C17	41
22	C17	C14	C03	42
23	C18	C05	C01	41
24	C19	C03	C18	42

Questionnaire instrument

At the conclusion of the civics and citizenship assessment, all students were given a contextual questionnaire to complete.

Unlike the NAP-CC assessment, the student questionnaire was not timed and students were able to take as long as they needed to complete it. For the majority of participating students, the questionnaire took between 15 and 20 minutes to complete. As was the case for previous NAP-CC cycles, this questionnaire included attitudinal content relating to the affective processes associated with the affective domain of the NAP-CC Assessment Framework. This element was measured with sets of Likert-type items. The Year 6 questionnaire contained 12 questions, with each question composed of between 5 and 13 items. The Year 10 questionnaire contained 14 questions, each composed of between 6 and 13 items. As in previous cycles, the Year 10 questionnaire comprised all

Year 6 questionnaire content with some additional questions and items that were exclusive to Year 10

In order to measure the participatory processes referenced by the affective domain of the assessment framework, items were developed to reflect the frequency and nature of students' involvement in various civics and citizenship activities at school as well as their civics and citizenship participation in the community. Items also aimed to capture students' perceptions of their preparedness for prospective engagement as an adult citizen.

With each new cycle of NAP-CC, the content of the student questionnaire is reviewed and updated in consultation with ACARA curriculum experts and the NAP-CC Working Group. In 2024, new content was developed for items related to the use of the internet and social media, different types of engagement and attitudes towards First Nations Australian cultures. A key new addition for the current cycle was a question capturing the extent to which students have learnt about different topics related to civics and citizenship at school. These changes allowed for the questionnaire to be improved and amended to remain relevant and contemporary. Importantly, however, the majority of the questionnaire content remained unchanged from previous cycles so that comparisons of students' engagement and attitudes over time could legitimately be made.

For the purposes of analysis and reporting, questionnaire scales were created using the items from the content areas covered by the questionnaire. Detailed information about the scaling procedures conducted, as well as the psychometric properties of the scales created, are provided in <u>Chapter 5</u>. A copy of the student questionnaire is included in <u>Appendix A</u>.

Chapter 3: Sampling and weighting

This chapter describes the NAP-CC 2024 main study sample design, the achieved sample and the procedures used to calculate the sampling weights. The sampling and weighting methods were used to ensure that the data provided accurate and efficient estimates of the achievement outcomes for the Australian Year 6 and Year 10 student populations. Information on the field trial sampling can be found in the field trial section of Chapter 4.

Sampling

The target populations for the study were Year 6 and Year 10 students enrolled in schools across Australia. A 2-stage stratified cluster sample design was used in NAP-CC, similar to that used in other Australian national sample assessments and in international assessments such as the Trends in International Mathematics and Science Study (TIMSS).

The first stage of sampling involved drawing a sample of schools. The sampling frame was explicitly stratified by state or territory and school sector, and separate, independent samples were drawn from each.

Schools were implicitly stratified within each explicit stratum, by the following variables:

- school type (primary, secondary, combined)
- school NAPLAN performance quintile (from lowest fifth to highest fifth)
- a measure of school socio-economic status known as the Socio-Economic Indexes for Areas Index of Education and Occupation (SEIFA IEO)⁶
- school Australian Statistical Geography Standard (ASGS) remoteness class (Major Cities, Inner Regional, Outer Regional, Remote and Very Remote)⁷
- enrolment size at the target year level (either Year 6 or Year 10).

The second stage of sampling involved drawing a random sample of 20 students across the entire year level in each of the sampled schools.

The sampling frame

Schools were selected from ACARA's Australian Schools List, a comprehensive list of all schools and campuses in Australia, comprising schools from all Australian states and territories, updated annually.

School exclusions

At the school level, exclusions from the target population included:

- very remote schools⁸ in all jurisdictions (except in the Northern Territory)
- schools listed on the ACARA Australian Schools List with fewer than 5 students in the target year level
- non-mainstream schools⁹.

⁶ This is a measure of the socio-economic status based on the socio-economic conditions, such as education and employment, of the geographic location of the school.

⁷ This is a measure of geographic location of the school.

⁸ Very remote schools are considered Australian Statistical Geography Standard (ASGS) Code = 4

⁹ Non-mainstream includes schools such as correctional schools, schools with a non-English curriculum (for example, French immersion schools), language schools, special schools, schools for distance education (including Schools of the Air), hospital schools, short-term provision (for example, environmental education support centre), mature age and preschools (all enrolments below year 0).

At the time of sampling, students from excluded schools accounted for 2.4% of the Year 6 student population and 3.3% of the Year 10 student population.

The decision to include very remote schools in the Northern Territory sample for 2024 was made because very remote schools comprised 22.7% of the Year 6 population and 17.2% of the Year 10 population in the Northern Territory, while this population was less than 1% of the total student population of Australia. The same procedure has been used for the NAP-CC study since 2007. The inclusion of very remote schools in the Northern Territory in the NAP-CC 2024 sample had only a negligible impact on the estimates for Australia and the other states.

After the school sample had been drawn, a number of sampled schools were identified as meeting the criteria for exclusion. When this occurred, the sampled school and its substitutes were removed from the sample and removed from the calculation of response rates. For NAP-CC 2024, 4 Year 6 schools and 6 Year 10 schools were removed from the sample. These exclusions are accounted for in the exclusion rates reported earlier.

First sampling stage

Sample sizes for both Year 6 and Year 10 were chosen to provide accurate estimates of achievement outcomes for all states and territories. The expected 95% confidence intervals were estimated in advance to be within approximately ± 0.15 to ± 0.2 of the population standard deviation for estimated means of the larger states. This level of precision was considered an appropriate balance between the analytical demands of the study, the burden on individual schools and the overall costs of the study.

An effective sample size of around 100–150 students¹⁰ is required to meet confidence intervals of this magnitude in the larger states. Smaller sample sizes were deemed as sufficient for the smaller states and territories because of their relatively small student populations.

The sample design developed for NAP–CC was a stratified cluster sample. Prior to sampling, schools were explicitly stratified by state and sector. That is, separate samples were drawn for each sector ¹¹ within states and territories for a total number of 24 explicit strata for both Year 6 and Year 10.

Schools within each stratum were ordered by school type, school NAPLAN performance quintile, SEIFA IEO, school Australian Statistical Geography Standard (ASGS) remoteness class, and enrolment size at the target year level. With systematic selection of the schools, these variables became implicit stratifiers.

The selection of schools was conducted using a systematic probability-proportional-to-size (PPS) method. For large schools, the measure of size (MOS) was equal to the enrolment at the target year level. To minimise variation in weights, the MOS for very small schools (between 5 and 9 students) was set to 10, and the MOS for small schools (between 10 and 19 students) was set to 20.

After sorting the sampling frame according to the stated implicit stratification variables, the standard process for the selection of schools with PPS was as follows:

- The MOS was accumulated from school to school and the running total was listed next to each school. The total cumulative MOS was a measure of the size of the population of sampling elements. Dividing this figure by the number of schools to be sampled provided the sampling interval.
- The first school was sampled by choosing a random number between one and the sampling interval. The school whose cumulative MOS contained the random number was the first sampled school. By adding the sampling interval to the random number, a second school was identified.

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¹⁰ The effective sample size is the sample size of a simple random sample that would produce the same precision as that achieved under a complex sample design.

¹¹ The 3 Australian school sectors are: government, Catholic and independent.

This process of consistently adding the sampling interval to the previous selection number resulted in a PPS sample of the required size.

An analysis of small schools (schools with fewer enrolments than the assumed cluster sample size of 20 students) was undertaken prior to sampling. On the basis of this analysis, the school sample size in some strata was increased in order to ensure that the number of students sampled was close to expectations. As a result, after the small school analysis, the actual numbers of schools sampled for Year 6 and Year 10 were 328 and 320, respectively. This is known as the "target sample". Table 3.1 shows the total student enrolment, target school populations and target school samples for each state and territory.

Table 3.1: Year 6 and Year 10 target population and target samples by state and territory

		Year 6		Year 10					
State/territory	Enrolment	Schools in Population	Target Sample	Enrolment	Schools in Population	Target Sample			
NSW	98,582	2,123	45	94,615	819	45			
VIC	77,776	1,679	45	75,620	571	45			
QLD	67,808	1,174	45	64,900	489	45			
SA	20,801	542	45	20,821	202	45			
WA	34,035	757	45	31,797	265	45			
TAS	6,374	198	45	6,417	83	40			
NT	3,193	120	28	2,600	50	25			
ACT	5,913	100	30	5,714	42	30			
Aust.	314,482	6,693	328	302,484	2,521	320			

Substitute schools

As each school was sampled, the next school in the sampling frame was designated as a substitute school to be included in cases where the sampled school did not participate. The adjacent school immediately before the sampled school was designated as the second substitute 12. It was used if neither the sampled nor the first substitute school participated. Due to the stratified sampling frame, the 2 substitute schools were similar (with respect to geographic location, socio-economic status, NAPLAN performance and size) to the originally sampled school for which they were assigned as a substitute.

Second sampling stage

The second stage of sampling involved the systematic selection of 20 students within each participating school from a list of all eligible students at each target year level, sorted by gender. This approach ensured that the distribution of students sampled by gender matched the distribution at the school. If fewer than 20 eligible students were enrolled in the target year level (in smaller schools, for instance), all students in the year level were selected to participate.

¹² In some cases (such as primary schools in the Northern Territory), there were not enough schools available for 2 substitutes to be drawn. In these cases, only one substitute school was drawn.

Student exclusions

In each of the sampled schools, individual students were exempted from the assessment if they met any one of the following criteria:

- Severe functional disability: a moderate to severe permanent physical disability that severely limits a student's capacity to participate in the test.
- Severe intellectual disability: a mental or emotional disability and/or cognitive delay that severely limits a student's capacity to participate in the test.
- Very limited assessment language proficiency: the student is unable to read or speak English
 proficiently and would not be expected to overcome the language barrier in the assessment
 situation. Typically, a student who had received less than one year of instruction in English would
 be excluded.

Table 3.2 and Table 3.3 detail the numbers and percentages of students excluded from the NAP-CC assessment, according to the reason given for their exclusion. The number of student-level exclusions was 147 at Year 6 and 250 at Year 10. This gives weighted exclusion rates of 1.9% of the sampled Year 6 students and 3.8% of sampled Year 10 students.

Table 3.2: Year 6 breakdown of student exclusions according to reason by state and territory

			Student Excl	usion	
State/territory	Functional Disability	Intellectual Disability	Limited Language Proficiency	Total	Weighted Proportion of Sampled Students in Year 6 (%)
NSW	5	11	4	20	2.0%
VIC	1	15	5	21	2.1%
QLD	3	10	5	18	1.5%
SA	6	13	11	30	2.6%
WA	1	8	5	14	1.2%
TAS	3	14	3	20	2.3%
NT	6	6	3	15	3.0%
ACT	1	6	2	9	1.5%
Aust.	26	83	38	147	1.9%

Table 3.3: Year 10 breakdown of student exclusions according to reason by state and territory

			Student Excl	usion	
State/territory	Functional Disability	Intellectual Disability	Limited Language Proficiency	Total	Weighted Proportion of Sampled Students in Year 10 (%)
NSW	8	17	4	29	2.5%
VIC	10	22	12	44	5.5%
QLD	6	16	9	31	3.7%
SA	10	37	8	55	6.6%
WA	12	8	6	26	2.3%
TAS	2	16	3	21	2.8%
NT	1	17	11	29	4.4%
ACT	4	8	3	15	2.2%
Aust.	53	141	56	250	3.8%

Weighting

The 2-stage stratified cluster design used in NAP-CC provides an economical and effective data collection process in a school environment. However, the oversampling of sub-populations as well as the non-response present in studies such as NAP-CC cause differential probabilities of selection for the ultimate sampling elements: the students. Consequently, one student in the assessment does not necessarily represent the same number of students in the population as another, as would be the case with a simple random sampling approach.

To account for differential probabilities of selection due to the design and to ensure unbiased population estimates, a sampling weight was computed for each participating student. It was an essential characteristic of the sample design to allow the provision of proper sampling weights, since these were necessary for the computation of accurate population estimates.

The overall sampling weight is the product of weights calculated at the 2 stages of sampling:

- · the selection of the school in the first stage
- the selection of students within the sampled schools in the second stage.

First-stage weight

The first-stage weight is the inverse of the probability of selection of the school, adjusted to account for school non-response within each explicit stratum.

The probability of selection of the school is equal to its measure of size (MOS) divided by the sampling interval (SINT), or one, whichever is lower. A school with a MOS greater than the SINT has a certain probability of selection and therefore has a probability of one.

The sampling interval is calculated at the time of sampling, and for each explicit stratum it is equal to the cumulative MOS of all schools in the stratum, divided by the number of schools to be sampled from that stratum.

The first factor of the first-stage weight, or the school base weight (BW_{sc}), was the inverse of this probability:

$$BW_{sc} = \frac{SINT}{MOS}$$

Following data collection, counts of the following categories of schools were made for each explicit stratum:

- the number of schools that participated (n_n^{sc})
- the number of schools that were sampled but should have been excluded (n_r^{sc})
- the number of non-responding schools (n_n^{sc}) .

Note that $n_n^{sc} + n_x^{sc} + n_n^{sc}$ equals the total number of sampled schools from the stratum.

Examples of the second category (n_x^{sc}) were:

- · a sampled school that no longer exists
- a school that, following sampling, was discovered to fit one of the criteria for school-level exclusion (for example, very remote, very small), but which had not been removed from the frame prior to sampling.

In the case of the non-responding schools (n_n^{sc}) , neither the originally sampled school nor its substitutes participated. Schools with a student response rate of less than 25% were also considered to be non-responding schools.

Within each explicit stratum, an adjustment was made to account for school non-response. This non-response adjustment (ASC) for a stratum was equal to:

$$ASC_{strt} = \frac{\left(n_p^{sc} + n_n^{sc}\right)}{n_p^{sc}}$$

The first-stage weight, or the final school weight, was the product of the base weight of the school and the school non-response adjustment:

$$FW_{sc} = BW_{sc} \times ASC_{strt}$$

Second-stage weight

Following data collection, counts of the following categories of students were made for each sampled school:

- the number of students at the relevant year level (n_{tot}^{st})
- the number of students who participated (n_p^{st})
- the number of sampled students who were exclusions (n_x^{st})
- the number of non-responding sampled students (n_n^{st}) .

Note that $n_{samp}^{st} = n_p^{st} + n_x^{st} + n_n^{st}$ equals the total number of sampled students from the sampled school.

The first factor in the second-stage weight was the inverse of the probability of selection of the student from the sampled school.

$$BW_{st} = \frac{n_{tot}^{st}}{n_{samn}^{st}}$$

The student-level non-response adjustment was calculated for each school as:

$$AST_{sc} = \frac{\left(n_p^{st} + n_n^{st}\right)}{n_p^{st}}$$

The final student weight was:

$$FW_{st} = BW_{st} \times AST_{sc}$$

Overall sampling weight

The overall sampling weight (FWTOT) was the product of the weights calculated at each of the 2 sampling stages:

$$FWTOT = FW_{sc} \times FW_{st}$$

After computation of the overall sampling weights, the weights were checked for outliers that would have a large effect on the computation of the standard errors. A weight was regarded as an outlier if the value was more than 4 times the median weight within an explicit stratum. Weights exceeding this threshold were trimmed to 4 times the median weight. The final, trimmed weight was:

$$WT2024 = FWTOT_{trimmed}$$

Response rates

For the purposes of response rate calculation, a school was considered to be participating if it had a student response rate of at least 50%. Schools with less than 50% response rate and students within schools with less than 50% response rate were given a weight of zero for response rate calculations.

Separate response rates were computed:

- 1. with substitute schools included as participants
- 2. with substitute schools regarded as non-respondents.

In addition, each of these rates was computed using unweighted and weighted counts. Regardless of the method used, school and student response rates were computed, and the overall response rate was the product of these 2 response rates. The differences in computing the 4 response rates are described below. These methods are consistent with the methodology used in TIMSS (Martin et al. 2016).

Unweighted response rates including substitute schools

The unweighted school response rate, where substitute schools were counted as participating schools, was computed as follows:

$$RR_1^{sc} = \frac{n_s^{sc} + n_{r1}^{sc} + n_{r2}^{sc}}{n_s^{sc} + n_{r1}^{sc} + n_{r2}^{sc} + n_{r2}^{sc}}$$

where n_s^{sc} is the number of responding schools from the original sample, $n_{r1}^{sc} + n_{r2}^{sc}$ is the total number of responding substitute schools and n_{nr}^{sc} is the number of non-responding schools that could not be replaced.

The student response rate was computed over all responding schools. Of these schools, the number of responding students was divided by the total number of eligible, sampled students:

$$RR_1^{st} = \frac{n_s^{st} + n_{r1}^{st} + n_{r2}^{st}}{n_s^{st} + n_{r1}^{st} + n_{r2}^{st} + n_{rr}^{st}}$$

where n_s^{st} is the total number of responding students in sampled schools, $n_{r1}^{st} + n_{r2}^{st}$ is the total number of responding students in substitute schools and n_{nr}^{st} is the total number of eligible, non-responding, sampled students in all participating schools.

The overall response rate is the product of the school and the student response rates.

$$RR_1 = RR_1^{sc} \times RR_1^{st}$$

Unweighted response rates excluding substitute schools

The difference of the second method from the first is that the substitute schools were counted as non-responding schools.

$$RR_2^{sc} = \frac{n_s^{sc}}{n_s^{sc} + n_{r1}^{sc} + n_{r2}^{sc} + n_{rr}^{sc}}$$

This difference had an indirect effect on the student response rate because fewer schools were included as responding schools, and student response rates were only computed for the responding schools.

$$RR_2^{st} = \frac{n_s^{st}}{n_s^{st} + n_{r1}^{st} + n_{r2}^{st} + n_{rr}^{st}}$$

The overall response rate was again the product of the 2 response rates.

$$RR_2 = RR_2^{sc} \times RR_2^{st}$$

Weighted response rates including substitute schools

For the weighted response rates, sums of weights were used instead of counts of schools and students. School and student base weights (BW) are the weight values before correcting for non-participation, so they generate estimates of the population being represented by the responding schools and students. The full weights (FW) at the school and student levels are the base weights corrected for non-participation.

School response rates are computed as follows:

$$RR_3^{sc} = \frac{\sum_i^{s+r_1+r_2} \left(BW_i \times \sum_j^{r_i} (FW_{ij}) \right)}{\sum_i^{s+r_1+r_2} \left(FW_i \times \sum_j^{r_i} (FW_{ij}) \right)}$$

where i indicates a school, s+r1+r2 all responding schools, j a student and ri the responding students in school i. First, the sum of the student final weights FW_{ij} for the responding students from each school was computed. Second, this sum was multiplied by the school's base weight (numerator) or the school's final weight (denominator). Third, these products were summed over the responding schools (including substitute schools). Finally, the ratio of these values was the response rate.

The numerator of the school response rate (RR_3^{sc}) is the denominator of the student response rate (RR_3^{st}) :

$$RR_3^{st} = \frac{\sum_{i}^{s+r1+r2} \left(BW_i \times \sum_{j}^{r_i} \left(BW_{ij}\right)\right)}{\sum_{i}^{s+r1+r2} \left(BW_i \times \sum_{j}^{r_i} \left(FW_{ij}\right)\right)}$$

The overall response rate is the product of the school and student response rates:

$$RR_3 = RR_3^{sc} \times RR_3^{st}$$

Weighted response rates excluding substitute schools

Practically, substitute schools were excluded by setting their school base weight to zero for computation of the school response rates and applying the same computation as above. More formally, the parts of the response rates are computed as follows:

$$\begin{split} RR_4^{sc} &= \frac{\sum_{i}^{s} \left(BW_i \times \sum_{j}^{r_i} (FW_{ij})\right)}{\sum_{i}^{s+r_1+r_2} \left(FW_i \times \sum_{j}^{r_i} (FW_{ij})\right)} \\ RR_4^{st} &= \frac{\sum_{i}^{s+r_1+r_2} \left(BW_i \times \sum_{j}^{r_i} (BW_{ij})\right)}{\sum_{i}^{s+r_1+r_2} \left(BW_i \times \sum_{j}^{r_i} (FW_{ij})\right)} \\ RR_4 &= RR_4^{sc} \times RR_4^{st} \end{split}$$

Reported response rates

In terms of the coverage of the sampled population, weighted response rates are a more accurate indicator of the representativeness of the sample. For the 2024 cycle, the weighted national overall response rate in Year 6 was 87% when including substitute schools and 87% when excluding substitute schools. In Year 10, the respective percentages were 78% and 75%.

Overall unweighted response rates for Year 6 were 85% when including substitute schools and 85% when excluding substitute schools. Overall unweighted response rates for Year 10 were 71% when including substitute schools and 70% when excluding substitute schools.

Table 3.4 and Table 3.5 contain the Year 6 and Year 10 response rates for all 4 response rate methods described in this section.

Table 3.4: Overall school and student response rates in Year 6

	Unweighted, including substitute schools			Unweighted, sampled schools only			Weighted, including substitute schools			Weighted, sampled schools only		
State/territory	Overall	School	Student	Overall	School	Student	Overall	School	Student	Overall	School	Student
NSW	0.86	1.00	0.86	0.86	1.00	0.86	0.86	1.00	0.86	0.86	1.00	0.86
VIC	0.88	1.00	0.88	0.88	1.00	0.88	0.88	1.00	0.88	0.88	1.00	0.88
QLD	0.82	0.96	0.86	0.82	0.96	0.86	0.86	1.00	0.86	0.86	1.00	0.86
SA	0.86	1.00	0.86	0.84	0.98	0.86	0.86	1.00	0.86	0.82	0.98	0.84
WA	0.90	1.00	0.90	0.90	1.00	0.90	0.89	1.00	0.89	0.89	1.00	0.89
TAS	0.85	1.00	0.85	0.85	1.00	0.85	0.85	1.00	0.85	0.85	1.00	0.85
NT	0.71	0.88	0.81	0.71	0.88	0.81	0.74	0.92	0.80	0.74	0.92	0.80
ACT	0.87	1.00	0.87	0.87	1.00	0.87	0.87	1.00	0.87	0.87	1.00	0.87
Aust.	0.85	0.98	0.86	0.85	0.98	0.86	0.87	1.00	0.87	0.87	1.00	0.87

Table 3.5: Overall school and student response rates in Year 10

	Unweighted, including substitute schools			Unweighted, sampled schools only			Weighted, including substitute schools			Weighted, sampled schools only		
State/territory	Overall	School	Student	Overall	School	Student	Overall	School	Student	Overall	School	Student
NSW	0.78	0.96	0.81	0.73	0.89	0.82	0.81	1.00	0.81	0.72	0.94	0.77
VIC	0.71	0.91	0.78	0.71	0.91	0.78	0.78	1.00	0.78	0.78	1.00	0.78
QLD	0.70	0.93	0.75	0.70	0.93	0.75	0.76	1.00	0.76	0.76	1.00	0.76
SA	0.71	0.93	0.76	0.71	0.93	0.76	0.77	1.00	0.77	0.77	1.00	0.77
WA	0.76	0.93	0.82	0.76	0.93	0.82	0.82	1.00	0.82	0.82	1.00	0.82
TAS	0.72	0.97	0.74	0.72	0.97	0.74	0.74	1.00	0.74	0.74	1.00	0.74
NT	0.42	0.58	0.72	0.42	0.58	0.72	0.43	0.61	0.72	0.43	0.61	0.72
ACT	0.76	1.00	0.76	0.76	1.00	0.76	0.77	1.00	0.77	0.77	1.00	0.77
Aust.	0.71	0.92	0.77	0.70	0.91	0.78	0.78	1.00	0.79	0.75	0.98	0.77

NAP-CC 2024 Technical Report

Chapter 4: Data collection, management and processing

The collection and processing of cognitive, contextual and administrative data for NAP-CC is supported by a framework of high-quality and well-organised data management procedures. These procedures have been developed and refined by the Australian Council for Educational Research (ACER), which has acted as the project management and delivery contractor over the course of many NAP sample cycles to ensure the integrity and quality of the data, while also minimising the administrative burden on participating schools.

This chapter outlines the data management procedures implemented for NAP-CC 2024. This includes the various methods of data collection that were employed before, during and after the administration of the assessment, as well as the procedures applied in the transfer, tracking, verification and transformation of the data collected.

Data management plan

A detailed data management plan is created for the collection, transfer, processing and storage of data for NAP sample projects. Established plans and associated processes formed the basis for the NAP-CC 2024 cycle data management plan. The plan first identified the data elements, or information assets, that were relevant to NAP-CC. It then detailed where each of the information assets were stored, and described how they were to be secured over the life of the project. This plan was referred to and, where necessary, updated over the course of the project so that it accurately described the most current data management practices implemented by the project team.

Data security

The NAP-CC project team acknowledges the importance schools, educational authorities and wider society rightly place on the security of personal data. In the context of collecting, transferring and storing school- and student-level data, it is important to ensure that all systems, staff and processes are handling those information assets securely for the life of the project. Given that many of the NAP-CC information assets contain a level of Personally Identifiable Data of Australian school children, all assets were marked as protected in accordance with both ACER's Data Classification Policy and its Cryptographic Policy.

For NAP-CC 2024, ACER implemented an Information Security Management System that is compliant with:

- ISO 27001:2013 Information technology Security techniques Information security management systems – Requirements
- ISO 27002:2015 Information technology Security techniques Code of practice for information security controls.

ACER's Information Security Management System also complies with:

- the Australian Government Information Security Manual (ISM) produced by the Australian Signals Directorate
- the Australian Government Protective Security Policy Framework.

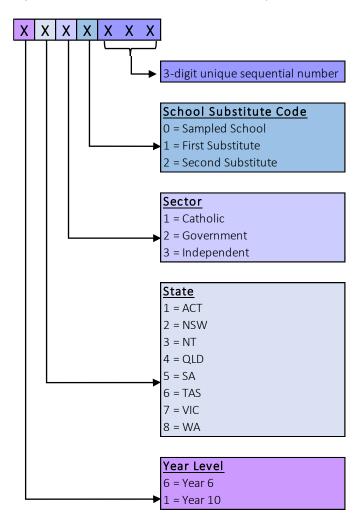
ACER ensured that all the processes, systems and solutions used to support and implement the NAP-CC 2024 study complied with our Information Security Management System. This ensures that ACER systems, staff and processes are securely handling information assets.

Data identification

To track and monitor data throughout the life of the NAP-CC project, a system of identification (ID) codes was implemented. At the school level, a unique ID was created for each school at the time of sampling. This school ID was 7 digits in length and comprised a concatenation of codes relating to year level, state,

sector, substitution status as well as a unique sequential number. The specific codes used for each variable are outlined in Figure 4.1.

Figure 4.1: Breakdown of codes used in unique school ID



At a student level, an ID was created that comprised the 7-digit school ID followed by a 2-digit student number (01–20) that was unique to each sampled student within the school. This student ID was included in the student cognitive, contextual and student background data files so that data could be accurately matched and tracked throughout the data capture, cleaning and analysis stages. Five spare IDs were created for each school and were distributed if additional test login credentials were required. The spare ID comprised the 7-digit school ID followed by a 2-digit student number (21–25). The use of unique student IDs allowed for NAP–CC data to be viewed and analysed without the use of personally identifiable data (that is, student names).

Data collected from schools and jurisdictions

The administration of the NAP–CC 2024 assessment required several stages of contact with the sampled schools to request or provide information. The contribution of both educational authorities and school staff to the data collection process is an essential part of the field administration.

To ensure the participation of sampled schools, education authority liaison officers were appointed for each jurisdiction. The liaison officers were expected to facilitate communication between ACER and the selected schools from their respective jurisdictions. The liaison officers helped to achieve a high participation rate for the assessment, which in turn helped to ensure unbiased, valid and reliable data.

Key personnel at each of the schools were nominated by the principal so that administrative and technical information could be collected in a timely manner. The roles of these nominated school personnel are outlined below:

- The School Contact Officer (SCO) was the main point of contact for ACER at the school and was responsible for coordinating and overseeing the assessment. SCOs provided ACER with information about the school's preferred assessment dates, student cohort lists and, if this could not be provided by the jurisdiction, student background data (SBD) for the selected students.
- The School Technical Support Officer (STSO) was responsible for ensuring that the school's computer system was test-ready by the scheduled assessment date. Primarily, the role involved conducting a series of technical checks on a sample of computers that were to be used for the assessment and helping to troubleshoot any issues ahead of assessment day.
- The Test Administrator (TA) was responsible for administering the assessment to the sampled students, according to the standardised administration procedures provided in the TA Handbook. The SCO at the school would often also perform the duties of TA, though they could alternatively choose to nominate another staff member for this role.

An overview of the school liaison and data collection processes is provided in Table 4.1.

Table 4.1: School liaison and data collection processes

Stage	Jurisdictional activity	ACER project team activity	School activity
Initial contact with sampled schools	Educational authorities inform sampled schools of their selection in the assessment. If the jurisdiction confirms that a sampled school is unable to participate, the relevant substitute school is contacted.	ACER contacts principals of sampled schools to request the nomination of a SCO and STSO.	Principals of contacted schools supply requested contact information via a secure online form.
Administrative data collection		ACER contacts nominated SCOs and requests preferred assessment dates and student lists for target year level (Year 6 and/or Year 10 cohort).	SCOs submit preferred assessment dates and student list via a secure school administration website.
Technical readiness		ACER contacts nominated STSOs and provides technical check instructions. ACER provides technical support and troubleshooting advice to STSOs via the Helpdesk.	STSOs undertake technical checks to ensure the school's computer resources are test-ready.
Date and student sample confirmation		ACER notifies SCOs of finalised assessment date and selected students via the school administration website.	SCOs make relevant school-level test day arrangements (including room bookings and informing sampled students of their selection).
Student Background Data collection	Educational authorities provide SBD for students in schools for which this information is held centrally.	Where SBD cannot be provided by the jurisdiction, ACER requests this information from SCOs for all sampled students.	SCOs provide SBD for all sampled students via the school administration website.

Stage	Jurisdictional activity	ACER project team activity	School activity
Test administration and helpdesk support		ACER provides detailed test administration manual and test login credentials to all nominated test administrators. ACER continues to provide support to schools via the Helpdesk.	Test administrators familiarise themselves with the processes and procedures outlined in the test administration manual. They consult with ACER Helpdesk staff to confirm understanding of protocol and circumvent any perceived issues prior to the scheduled assessment date.

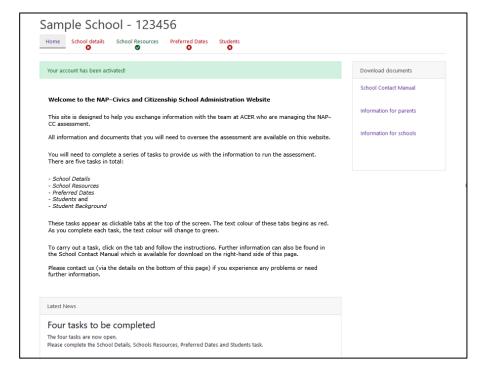
The NAP-CC online school administration website

All information provided by SCOs to ACER was submitted via a secure website. There were 2 significant benefits of using the NAP-CC school administration website; namely, it:

- 1. eased the administrative burden on the selected schools
- 2. provided a convenient, intuitive and secure repository for all school data relating to the study.

Schools were able to download all relevant administrative materials from this site, as well as use it to provide information to ACER regarding SCO details, assessment date preferences and student-related information as required. To access the website, SCOs needed to create a secure password and activate their school-specific account. Figure 4.2 shows a screenshot from the homepage of the website.

Figure 4.2: NAP-CC school administration website homepage



The STSO technical checks

To ensure the smooth running of the assessment, it was necessary for STSOs to perform a series of technical checks on the devices that were selected for use. These checks consisted of a device check run through the test delivery system that checked the compatibility of the schools' devices, and a feedback

questionnaire to report the results. An excerpt from the STSO manual, containing the device check instructions and steps, is provided in <u>Appendix B</u>.

After the technical checks were performed, the ACER project team would liaise with the STSOs who had reported issues. Technical issues were resolved through a process of troubleshooting with the ACER project team. This sometimes involved referring the matter to the test delivery system engineers or, in the case of access/security protocols, to the relevant central education authority of the applicable school.

Helpdesk provision and online support

A 1800 helpdesk support number and a dedicated email address were made available to schools for the entire main study administration phase (February to June 2024). Using these means, the ACER project team supported schools through all administrative, technical and operational tasks related to the administration of the NAP-CC assessment. Project staff were also on hand to provide any urgent assistance required during, or immediately preceding, the assessment session itself.

The helpdesk hours of operation during the assessment window were 8 am-6 pm AEST so that school hours across Australia's various time zones could be accommodated.

Collection of student background information

Student background data were collected for all participating students and matched to students' cognitive assessment and questionnaire responses for analysis and reporting purposes.

The structure of these student background variables follows NAP protocols as set out in the *Data Standards Manual* (ACARA 2022). The information collected included:

- age
- gender
- Indigenous status
- · parental school education
- parental non-school education
- parental occupation
- main language spoken at home.

Schools are required to collect this information from the time of student enrolment. For NAP-CC 2024, student background data was collected in one of 2 ways: from the education authorities in each jurisdiction or from the schools themselves. Where possible, education authorities from each jurisdiction supplied this data directly to ACER so that schools were not unnecessarily burdened with this administrative task. Provision of student background data from education authorities occurred in 14 out of 24 of the jurisdictions across the country. The source of student background data for each of the jurisdictions is outlined in Table 4.2.

Table 4.2: Student background data provision

State/Territory	Sector	Source
NSW	Government	NSW Department of Education
	Catholic	School
	Independent	School
VIC	Government	VIC Department of Education
	Catholic	School
	Independent	School
QLD	Government	QLD Department of Education
	Catholic	School
	Independent	School
SA	Government	SA Department for Education
	Catholic	SA Catholic Education Office
	Independent	School
WA	Government	WA Department of Education
	Catholic	WA Department of Education
	Independent	WA Department of Education
TAS	Government	Tas Department of Education
	Catholic	Tas Catholic Education Office
	Independent	School
NT	Government	NT Department of Education and Training
	Catholic	School
	Independent	School
ACT	Government	ACT Education Directorate
	Catholic	ACT Education Directorate
	Independent	ACT Education Directorate

Where data collection from educational authorities was not possible, ACER collected this information from the schools themselves. To do this, the ACER project team created a template into which schools could enter the coded background details for each sampled student. This template was then uploaded by each school onto the secure NAP-CC school administration website. The code list for the student background data collected is presented in Table 4.3.

Table 4.3: Variable definitions for Student Background Data

Category	Description	Codes
Gender	Gender of student	F = Female M = Male O = Other 9 = Not stated/unknown
Age	Date of birth of student	Free response DD-MM-YYYY
Indigenous status	A student is considered to be Indigenous if they identify as being of Aboriginal and/or Torres Strait Islander origin.	 1 = Aboriginal but not Torres Strait Islander origin 2 = Torres Strait Islander but not Aboriginal origin 3 = Both Aboriginal and Torres Strait Islander origin 4 = Neither Aboriginal nor Torres Strait Islander origin 9 = Not stated/unknown.
Parental school education	The highest year of primary or secondary education a parent/guardian has completed.	1 = Year 9 or equivalent or below 2 = Year 10 or equivalent 3 = Year 11 or equivalent 4 = Year 12 or equivalent 0 = Not stated/unknown/Does not have Parent 2.
Parental non- school education	The highest qualification attained by a parent/guardian in any area of study other than school education.	 5 = Certificate I to IV (including Trade Certificate) 6 = Advanced diploma/Diploma 7 = Bachelor degree or above 8 = No non-school qualification 0 = Not stated/unknown/Does not have Parent 2.
Parental occupation	The occupation group that includes the main work undertaken by the parent/guardian.	1 = Senior management and professionals 2 = Other manager and associate professionals 3 = Tradespeople & skilled office, sales and service staff 4 = Machine operators, labourers, hospitality, and related staff 8 = Not in paid work in last 12 months 9 = Not stated/unknown/Does not have Parent 2.
Student/Parent language spoken at home	The main language spoken in the home by the respondent.	1201 = English Codes for all other languages as per the Australian Standard Classification of Languages (ASCI) Coding Index 2nd Edition

The ability of the ACER project team to collect student background data to the level required for data analysis purposes depends on how complete the records are kept at participating schools and central authorities. Where data variables were labelled as unknown or left blank by the school or jurisdiction, and the absence of data was confirmed upon follow up from the project team, these values were coded as missing. The percentage of missing values for the derived background data variables, along with the percentages for all valid codes, are presented in the NAP-CC 2024 Public Report (ACARA 2025).

Assessment administration

Field trial

The NAP-CC field trial was conducted from 16–31 October 2023. In total, 1,495 Year 6 students and 1,314 Year 10 students from 119 schools across New South Wales, Victoria, Queensland, Western Australia and South Australia participated. The sample included students from major cities, regional and remote areas. The students also came from a range of socio-economic backgrounds, and included a mix of government, Catholic and independent schools.

The purpose of the field trial was to test the assessment instruments and associated operational procedures. There were 22 test forms – 11 were rotated across the participating students so that item-level coverage was evenly distributed.

Overall, the analysis of the collected data suggested that the test instrument, scoring guides and scoring procedures had been successful and would form a solid foundation for the 2024 main study. As a result of the findings, decisions were made as to which items would be used in the main study assessment instrument. The coverage and content of the assessment instrument is described in the following section.

Main study

The NAP-CC 2024 main study assessment was conducted across Australia during Term 2, 2024. Schools were permitted to schedule the assessment on a day that suited them within the official assessment period. The scheduled assessment window for all states and territories was Monday 6 May to Friday 24 May 2024.

During the testing period, the assessment window was extended for an additional week to Friday 31 May to accommodate the testing of additional students.

The NAP-CC assessment consisted of a set of practice questions, the test and a student questionnaire. All components were to be administered on the same day. Schools were asked to allow approximately 2 hours for the entire assessment process to cater for settling the students, providing instruction and logging students into the online assessment platform.

Assessment platform

The 2024 cycle of the NAP-CC assessment was delivered exclusively via the Online National Assessment Platform developed to deliver NAPLAN and other NAP assessment events online. The platform is managed by Educational Services Australia. As all the assessment and questionnaire data was collected electronically, scanning and manual data entry of student responses were not required.

Test session timing

The test administration times were designed to minimise the disruption of teaching and classroom patterns. Table 4.4 shows the timing of the test session.

Table 4.4: NAP-CC assessment session timing

Component	Year 6	Year 10
Practice questions	10 mins (approx.)	10 mins (approx.)
Assessment	60 mins	75 mins
Student questionnaire	20 mins (approx.)	20 mins (approx.)

Follow-up test sessions

To maximise student participation, schools were asked to administer follow-up sessions in cases where a significant proportion (that is, more than 20%) of students were absent on the scheduled assessment day. This helped ensure a minimum student participation rate of 80% at most participating schools.

Quality Monitor visits

In line with quality assurance processes, ACER sent trained Quality Monitors to 5% of participating schools nationally. In total, 15 Quality Monitors were hired, who together visited 35 schools across all states and territories in Australia.

The responsibility of the Quality Monitor was to ensure the uniformity and consistency of test administration procedures implemented across all participating schools. This was done by observing the test administrator before and during the administration of the assessment. The Quality Monitor then reported back to ACER via the online submission of a detailed, structured report. The Quality Monitor report template is provided in <u>Appendix C</u>.

Scoring student responses

Students completed the NAP-CC assessment using software that included a combination of different item types or formats. Student responses were either scored automatically by the testing system or scored during the later marking operation by a team of trained markers using a detailed scoring guide. The different formats and item types were described previously in Table 2.2, Chapter 2.

Constructed response items

Some items required students to provide a typed response. These responses were captured by the test delivery system and later delivered to markers using a purpose-built online scoring system. Some of these items had scoring guides that allowed for dichotomous scoring (correct/incorrect), whereas others had scoring guides with partial credit scoring in which different categories of student responses could be scored according to the degree of knowledge, skill or understanding they demonstrated.

Centre-based marking operation

For the items that could not be autoscored by the test delivery system, responses were marked by a team of trained markers in a centre-based marking operation. The main study marking operation was conducted in the ACER Sydney Marking Centre from Wednesday 29 May to Wednesday 12 June 2024. Marking was conducted online using the ACER Marking System (AMS).

ACER employed a total of 22 markers, and 2 marking supervisors, to mark the 62 items needing to be human scored. These individuals were chosen from ACER's pool of highly experienced markers, many of whom had marked previous cycles of the NAP-CC field trial and main study. The marking design used for the operation of the marking centre involved 2 teams of markers, each marking student responses to a total of 31 items. Each group was closely supervised by a group leader, who was responsible for checkmarking and the maintenance of marking consistency across the group.

As per previous NAP sample marking operations, ACER used an ongoing training model (train-mark, train-mark) over the entire duration of the operation. This means that training in each item is conducted directly before marking of that particular item begins, so that the rubric and construct are fresh in the minds of the markers as they begin to mark an item.

The training approach included the completion of carefully selected sample responses that exemplified the nuances of the rubric, with time assigned for marker discussion and clarification of any questions prior to the commencement of marking.

Quality assurance during the marking process

Part of the role of the group leaders was to spot check a random sample of at least 10% of all responses scored by markers. Very few instances of off-task marking were observed, although in each group there were instances in which some retraining and remarking of individual items occurred as a result of interactions with student responses that evidenced answers not anticipated by the marking guide.

Control scripts for each item were pre-selected and added into the system for the markers to score as part of their allocated packet of responses. Very high compliance rates were observed on all control scripts, which again denotes a high level of marker accuracy.

Group leaders also referred to score distribution reports to ensure consistency in scoring patterns across the team during the scoring of each item.

Data cleaning and verification

Data cleaning and verification relate to processes of ensuring the integrity of the data collected. For NAP—CC, a series of data cleaning steps was undertaken on all data collected from jurisdictions, schools and students. With respect to student background data, the following steps were performed:

• Student names (for the purposes of school reporting) were corrected where there was obvious first name/surname reversal, or where foreign characters (for example, ?, !, %) were included. Some instances of correction had to be confirmed with the school directly.

- Missing gender of the student was attributed where it could be inferred from the school type (for example, where single-sex). Some instances of correction had to be confirmed with the school directly.
- All dates of birth were converted to the standard dd/mm/yyyy format, and any auto-formatting
 executed by the spreadsheet template that rendered dates of birth illegible was reversed and
 corrected.
- Any free text or abbreviated text was coded as per the variable coding schema presented in Table 4.3.
- Any out of range, implausible or missing values were double-checked with the school or jurisdiction
 that provided the data. Where possible, the correct values were inputted. Where no further information
 was provided or available, the data were recoded to missing.

Student background variables were also derived for the purposes of reporting achievement outcomes. Table 4.5 shows the derived variables and the transformation rules used to recode them.

Table 4.5: Transformation rules to derive student background variables for reporting

Variable	Label	Transformation rule
School location	ASGSRemote	The geographical classification of the school location according to the ABS remoteness classification (1 = major cities, 2 = inner regional, 3 = outer regional, 4 = remote, 5 = very remote).
Gender	GENDER	Classified by response; missing data treated as missing unless the student was present at a single-sex school.
Age	AGE	Derived from the difference between the date of assessment and the date of birth, transformed to whole years.
Indigenous status	INDIG	Coded as Indigenous (1) if response was "yes" to Aboriginal OR Torres Strait Islander OR Both. Coded as non-Indigenous (0) otherwise.
Language spoken at home	LBOTE	Each of the 3 Language spoken at home questions (student, Parent 1 or Parent 2) were recoded to "LBOTE" (1) or "Not LBOTE" (0) according to Australian Standard Classification of Languages (ASCL) codes. The reporting variable (LBOTE) was coded as "LBOTE" (1) if response was "LBOTE" for any student, Parent 1 or Parent 2. If all 3 responses were "not LBOTE" then the LBOTE variable was designated as "not LBOTE" (0). If any of the data were missing, then the data from the other questions were used. If all of the data were missing, then LBOTE was coded as missing.
Parental education	PARED	Parental education equalled the highest education level (of either parent). Where one parent had missing data, the highest education level of the other parent was used. Only if parental education data for both parents were missing would parental education be coded as "missing" (0).
Parental occupation	POCC	Parental occupation equalled the highest occupation group (of either parent). Where one parent had missing data or was classified as "not in paid work", the occupation group of the other parent was used. Where one parent had missing data and the other was classified as "not in paid work", parental occupation equalled "not in paid work". Only if parental occupation data for both parents were missing would parental occupation be coded as "missing" (9).

With respect to the student cognitive and survey data, the following preliminary data cleaning steps were performed:

- Instances of invalid IDs were investigated and, after liaison with the test administration team, corrected where possible or else removed from the data set.
- Instances of spare IDs were matched with valid Student IDs and recoded accordingly. This often necessitated confirmation and cross-checking with the attendance roll data and notes from the test administration team.
- Patterns of missing values were explored and, where appropriate, recoded to "9" for embedded missing, "r" for not reached (cognitive data only) or "n" for not administered.

Further information regarding the scaling procedures implemented for the cognitive achievement data and student questionnaire data can be found in Chapter 5 of this report.

Student eligibility for reporting

Psychometric analysis of student cognitive and contextual data requires a minimum threshold of valid responses to be met. To include a student record in the database for scaling, each student must meet a combination of 3 criteria (as shown in Table 4.6) including:

- valid attempts on at least 3 cognitive items, or at least one valid attempt in the student survey
- an appropriate attendance status
- · not being listed as exempt.

Students who did not meet the minimum valid attempt criterion were flagged as "Ineligible" and subsequently "Non-respondent".

Students who met the minimum valid attempt criterion were flagged as "Eligible" for consideration to be identified as "Respondent". They were marked as "Respondent" only when their attendance status was "Participated", "Other" or "Not in attendance file" and their exemption status was "Not stated". The remaining "Eligible" students were flagged as "Non-respondent".

Students flagged as "Respondent" were kept for the purposes of scaling and analysis only if the school response rate met the minimum requirement as outlined in Chapter 3.

Table 4.6: Rules of flagging students as respondents

Fitation.	Christiant attendance	Stı	udent exemp	tion			
Eligibility	Student attendance	Not stated	1	2	3		
	Participated						
	Absent						
	Exempt						
Ineligible	Left school	Non-respondent					
	Parent refusal						
	Other - please specify						
	Not in attendance data file						
	Participated	Dognandant					
	Absent	Respondent					
	Exempt						
Eligible	Left school	Non-respo		-responde	ent		
	Parent refusal	Non-respondent					
	Other - please specify						
	Not in attendance data file	Respondent					

Students identified to be eligible when they returned:

Exemption code 1 = severe functional disability

Exemption code 2 = severe intellectual disability

Exemption code 3 = very limited English language proficiency

Data processing for school reporting

Once all student responses were marked, the following data processing steps were implemented to produce the school summary reports that were distributed to the participating schools:

- collation of all marked student data and creation of a single data file for each year level
- removal of introductory practice items for each student and separation of student questionnaire data (which was not included in the analysis for school summary reports)
- checking of the student response data file against the codebook to ensure no major data anomalies
- computation of item per cent correct (unweighted, and excluding not reached responses)
- for partial credit items, computation of item per cent correct for each item in standard NAP sample format (for example, 75,23 where 0,1,2 item becomes 75 [facility of 1 and 2], 23 [facility of 2 only])
- formatting of data file to required specifications for export into school-specific Microsoft Excel reports.

Providing the school summary reports to schools

After all test data were collected, cleaned, marked and analysed, ACER provided access to an interactive Excel report for all participating schools via the NAP-CC school administration website.

The NAP-CC 2024 school summary reports included:

- · descriptions of each item in the test
- · details of which students were administered each item
- · the level of credit students received for each item they were administered

a) at least 3 valid* cognitive item responses, or b) at least 1 valid response* in questionnaire

^{*} Valid responses exclude missing, not reached and not administered

• summary information of the weighted (with preliminary weights) percentage of students receiving different levels of credit for each item.

The school summary reports were developed as interactive Microsoft Excel reports, which were generated through the R open-source software program. These reports allowed schools to undertake detailed interrogation of the data using existing Excel features many would be familiar with.

The school summary reports were hosted on the school administration website, allowing schools to access the reports on the same website used for other NAP-CC administrative tasks and using existing login credentials.

Schools were advised to read their report in conjunction with the NAP–CC School Report Instructions provided in the appendices to this report (<u>Appendix D</u>). These instructions provided a description of each of the fields shown in the report and outlined how to interpret the data provided. An example of a school summary report is shown in <u>Appendix E</u> to this report.

Chapter 5: Scaling procedures

Both cognitive and questionnaire items were scaled using item response theory (IRT) scaling methodology. The cognitive items were used to derive a one-dimensional NAP-CC achievement scale, while a number of scales were constructed based on different sets of questionnaire items.

This chapter outlines the procedures implemented to create these scales. It also provides a description of the associated processes of DIF analysis, item calibration, horizontal equating and the creation of plausible values.

The scaling model

Test items were scaled with the one-parameter model (Rasch 1960). In the case of dichotomous items, the model predicts the probability of selecting a correct response (value of one) instead of an incorrect response (value of zero), and is modelled as:

$$P_i(\theta_n) = \frac{\exp(\theta_n - \delta_i)}{1 + \exp(\theta_n - \delta_i)}$$

where $P_i(\theta_n)$ is the probability of person n scoring 1 on item i, θ_n is the estimated ability of person n, and δ_i is the estimated location of item i on this dimension. For each item, item responses are modelled as a function of the latent trait θ_n .

For items with more than 2 (k) categories (Likert-type items, for instance), the more general Rasch partial credit model (Masters and Wright 1997) was applied, which takes the form of:

$$P_{x_i}(\theta_n) = \frac{exp \sum_{k=0}^{x} (\theta_n - \delta_i + \tau_{ik})}{\sum_{k=0}^{m_i} exp \sum_{k=0}^{h} (\theta_n - \delta_i + \tau_{ik})} \quad x_i = 0, 1, \dots, m_i$$

where $P_{x_i}(\theta_n)$ denotes the probability of person n scoring x on item i, θ_n denotes the person's ability, the item parameter δ_i gives the location of the item on the latent continuum, τ_{ik} denotes an additional step parameter for each step k between adjacent categories and m_i denotes the maximum score attainable on item i.

The analysis of item characteristics and the estimation of model parameters were carried out with the ACER ConQuest software package (Version 5 software: see Adams, Wu, Cloney, Berezner and Wilson 2024).

Scaling cognitive items

This section outlines the procedures for analysing and scaling the cognitive test items. The procedures are somewhat different from scaling the survey items, which are discussed later in the chapter.

The model fit of cognitive test items was assessed using a range of item statistics. The weighted mean-square statistic (infit), which is a residual-based fit statistic, was used as a global indicator of item fit. Infit statistics were reviewed both for item and step parameters.

In addition to this, item characteristic curves (ICCs) were also used to review item fit. ICCs provide a graphical representation of item fit across the range of student abilities for each item (including dichotomous and partial credit items). The functioning of the partial credit items was further analysed by reviewing the proportion of responses in each response category and the correct ordering of mean abilities of students across response categories.

Final decisions on removing test items were based on a range of different criteria. Generally, items were flagged for review if first item calibrations showed a considerably higher infit statistic (for example, infit > 1.2) as well as low item-rest correlation (0.2 or lower). The ACER project team considered both item-fit criteria as well as the content of the item prior to a decision about removing or retaining flagged items for scaling.

Of the 256 items in the test, one was removed from the scale due to poor fit statistics at Year 6 only (x00222545) and another 2 were removed at Year 10 only (x00224647 and x00225756). Consequently, these items were not used to estimate student achievement.

Differential item functioning

The quality of the items was also explored by assessing differential item functioning (DIF) by gender. DIF occurs when groups of students with the same ability have different probabilities of responding correctly to an item. For example, if boys have a higher probability of success than girls with the same ability on an item, the item shows DIF in favour of boys. This constitutes a violation of the Rasch model, which assumes that the probability is only a function of ability and not of any other variable. Substantial item DIF with respect to gender may result in bias of performance estimates across gender groups. No instances of substantial gender DIF were encountered so no items were removed for this reason.

Item calibration

Missing student responses that were likely caused by issues with test length ("not reached" items)¹³, were omitted from the calibration of item parameters but were treated as incorrect for the scaling of student responses. All other missing responses were included as incorrect responses for the calibration of items (except for the ones that were not administered).

Item parameters were calibrated using all sampled student data, except for students who were identified as non-respondents. The student weights were rescaled to ensure that each state or territory was equally represented in the sample. The items were calibrated separately for Year 6 and Year 10. After removing items with unsatisfactory scaling characteristics, a total of 253 items were used for scaling of which 61 items were administered to both year levels.

An investigation was conducted to verify that items from the 4 strands of civics and citizenship should be scaled together on a unidimensional scale. A 4-dimensional model was created by year level. The correlation between the 4 dimensions was between 0.91 and 0.98 for Year 6 and between 0.89 and 0.98 for Year 10, which suggested a unidimensional scale at each year level. It was therefore decided to use a unidimensional model to scale the civics and citizenship items together for each year level.

Figure 5.1 presents item maps for Year 6 and Year 10. The crosses represent students, the numbers represent items, and in the case of a partial credit item the threshold is included. The vertical line represents the measured NAP-CC scale with high-performing students and difficult items at the top and low-performing students and easy items at the bottom. The blue horizontal dotted line is at 0 logits, centred on the items. Each "X" represents 7.4 cases and 6.4 cases for Year 6 and Year 10 respectively. The 2 scales are not directly comparable because they have been calibrated separately, but they have been lined up approximately for this report. The response probability in this figure is 0.5, which means that students with an ability equal to the difficulty (or threshold) of an item have a 50% chance of responding correctly to that item. At each year level, the alignment of the student and item distributions in the figure shows that the test was relatively well targeted at both Year 6 and Year 10 levels.

[&]quot;Not reached" items were defined as all consecutive missing values at the end of the test except the first missing value of the missing series, which was coded as "embedded missing", like other items that were presented to the student but which did not receive a response.

Figure 5.1: Item maps for Year 6 and Year 10

The overall reliability of the test, as obtained from the scaling model, was 0.81 for Year 6 and 0.85 for Year 10 (ACER ConQuest estimate). Appendix F shows the item thresholds on the NAP-CC scale with a response probability of 0.50 and of 0.62¹⁴ in logits and their equated reporting scale score. It also shows the respective percentages of correct responses for each year sample (giving equal weight to each jurisdiction). The weighted fit statistics are included in the last column and column 4 indicates if an item was used as a horizontal link (trend) item.

Horizontal equating

Test forms at both year levels consisted of newly developed items and trend items. The trend items were developed for and used in previous cycles. As the items had been kept secure, they could be used as horizontal link items to equate the results of the 2024 assessment with the established NAP-CC scale.

To ensure that the link items had the same measurement properties across cycles, the relative difficulties in 2024 and 2019 were compared. Five out of 47 common items for Year 6, and 7 out of 52 common items for Year 10 showed standardised item difficulty differences larger than 0.5 logits between 2024 and 2019, and were not used for equating. For each year level, the set of link items showed similar average discrimination (item–rest correlation was 0.36 in 2019 and 0.37 in 2024 for Year 6, and 0.39 in both 2019 and 2024 for Year 10). The average DIF with respect to gender in both cycles was also close to zero (0.02 logits in 2019 and 0.00 logits in 2024 for Year 6; and 0.04 logits in 2019 and 0.02 logits in 2024 for Year 10).

Figure 5.2 to Figure 5.5 show scatter plots of item difficulties for horizontal link items in 2019 and 2024 before and after horizontal link item selections for Year 6 and Year 10, respectively. The average difficulty of each set of link items was set to zero and each dot represents one link item. The expected location under the assumption of complete measurement equivalence across both assessments is the identity line (y = x). The thick broken lines represent the 95% confidence interval around the expected values. Items outside of these lines had statistically significant deviations from the green identity line. The pink broken line is the line of best fit between the item difficulties of the 2 cycles. The graphs show that the slope of this line is close to one.

The original standard errors provided by ACER ConQuest were adjusted by multiplying them by the square root of 6, the approximate design effect in 2024. This correction was made because data was collected

¹⁴ This means that a student with a scale score equal to the item difficulty parameters has 62% probability of giving a correct response to the test question.

from a cluster sample design, whereas the scaling software assumes simple random sampling of data (see <u>Chapter 3</u> for further information about sampling procedures).

Figure 5.2: Relative item difficulties in logits of Year 6 horizontal link items between 2019 and 2024 before selection

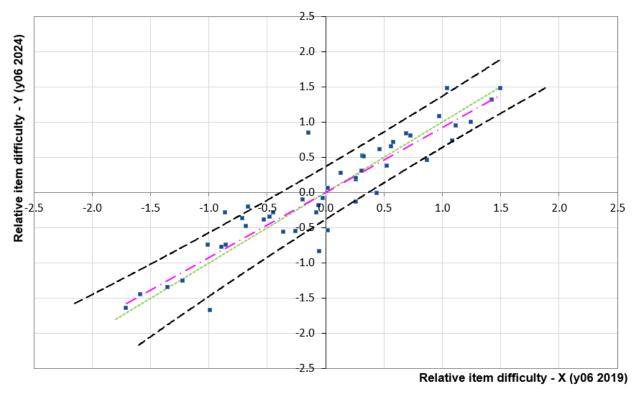


Figure 5.3: Relative item difficulties in logits of Year 6 horizontal link items between 2019 and 2024 after selection

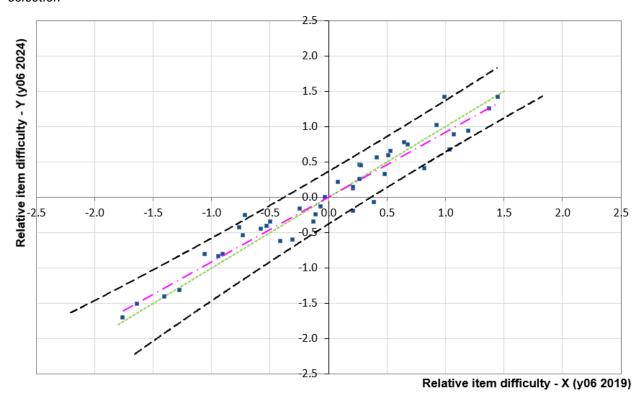


Figure 5.4: Relative item difficulties in logits of Year 10 horizontal link items between 2019 and 2024 before selection

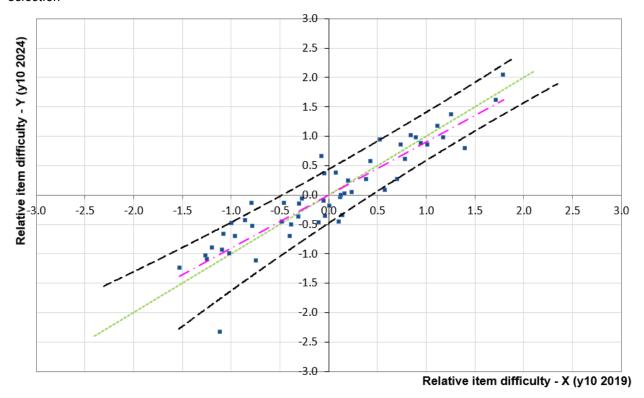
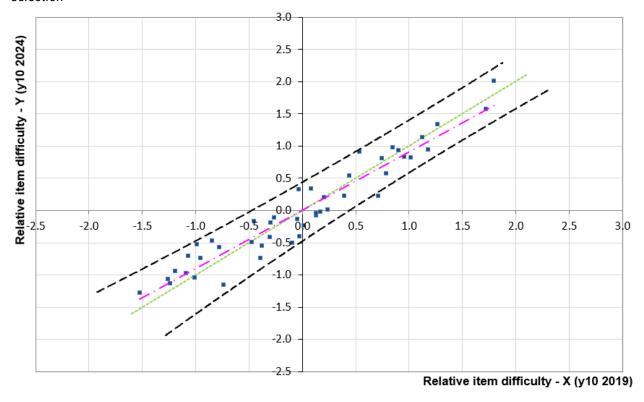


Figure 5.5: Relative item difficulties in logits of Year 10 horizontal link items between 2019 and 2024 after selection



Item—rest correlation is an index of item discrimination, which is computed as the correlation between the scored item and the raw score of all other items in a test form. It indicates how well an item discriminates between high- and low-performing students, similar to the item fit statistic. The 2019 and 2024 values of these discrimination indices are plotted in Figure 5.6 and Figure 5.7.

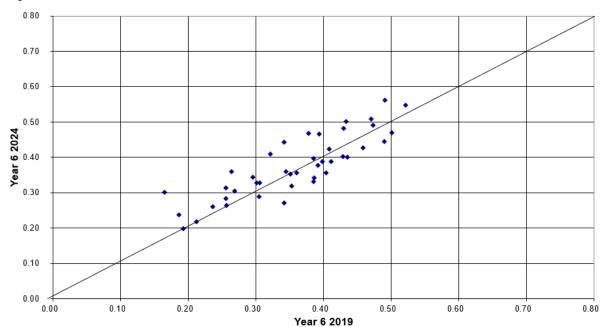
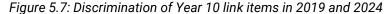
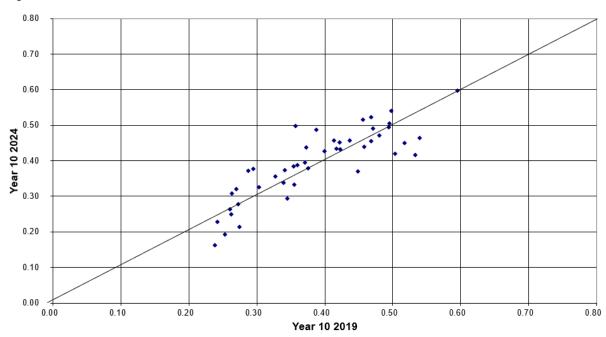


Figure 5.6: Discrimination of Year 6 link items in 2019 and 2024





After the selection of link items, common item equating was used to shift the 2024 scale onto the historical scale. The value of the shift is the difference in average difficulty of the link items between 2019 and 2024, 0.382 for Year 6 and 0.346 for Year 10. After applying this shift, the same transformation was applied as in 2019. The original scale scores (logits) for the Year 6 students were converted as:

$$\theta_n^* = \{(\theta_n + 0.382 + 0.197 - 0.193 - 0.063 - 0.473 - 0.547 - 0.189 - \bar{\theta}_{04})/\sigma_{04}\} \times 100 + 400 + 1$$

and for the Year 10 students:

$$\theta_n^* = \{(\theta_n + 0.346 + 0.170 - 0.168 - 0.208 - 0.777 - 0.057 + 0.119 - \bar{\theta}_{04})/\sigma_{04}\} \times 100 + 400$$

where θ_n^* is the transformed ability estimate for student n, θ_n is the original ability estimate for student n in logits, $\bar{\theta}_{04}$ is the mean ability in logits of the Year 6 students in 2004 (-0.6993), and σ_{04} is the standard deviation in logits of the Year 6 students in 2004 (0.7702).

Uncertainty in the link

The shift that equates the 2024 data with the 2019 data depends upon the change in difficulty of each of the individual link items. As a consequence, the sample of link items that have been chosen will influence the estimated shift. This means that the resulting shift could be slightly different if an alternative set of link items had been selected. As a result, there is an uncertainty associated with the equating that is due to the choice of link items, similar to the uncertainty associated with the sampling of schools and students.

The uncertainty that results from the selection of a sub-set of link items is referred to as a linking or equating error. This error should be considered when making comparisons between the results from different data collections across time. Just as with the error that is introduced through the process of sampling students, the exact magnitude of this equating error cannot be determined. We can, however, estimate the likely range of magnitudes for this error and take this error into account when interpreting results. This likely range of magnitude for the combined errors is represented as a standard error of each reported statistic.

The following approach has been used to estimate the equating error. Suppose we have a total of L score points in the link items in K units. In the following, C_{ij} is the difference of item i in unit j between the 2 cycles. Use i to index items in a unit and j to index units so that $\hat{\delta}_{ij}^{y}$ is the estimated difficulty of item i in unit j for year y, and let:

$$C_{ij} = \hat{\delta}_{ij}^{2024} - \hat{\delta}_{ij}^{2019}$$

The size (number of score points) of unit j is m_i so that:

$$\sum_{j=1}^{K} m_j = L \quad \text{and} \quad \overline{m} = \frac{1}{K} \sum_{j=1}^{K} m_j$$

Further, let:

$$c_{\bullet j} = \frac{1}{m_j} \sum_{i=1}^{m_j} c_{ij} \qquad \qquad \overline{c} = \frac{1}{N} \sum_{j=1}^K \sum_{i=1}^{m_j} c_{ij}$$

where $c_{.j}$ is the average of the item difference between cycles, \bar{c} is the mean of the differences of all link items.

Then the equating error, taking into account the clustering, is as follows:

$$EquatingError_{2019,2024} = \sqrt{\frac{\sum_{j=1}^{K} m_{j}^{2} (c_{.j} - \bar{c})^{2}}{K(K-1)\bar{m}^{2}}} = \sqrt{\frac{\sum_{j=1}^{K} m_{j}^{2} (c_{.j} - \bar{c})^{2}}{L^{2}}} \frac{K}{K-1}$$

The equating error between 2019 and 2024 is 5.150 scale score points for Year 6 and 4.183 for Year 10. The equating error between 2024 and 2016 is the sum of the 2 equating errors between adjacent cycles for each year level. For example, the equating error between 2024 and 2016 for Year 6 is:

$$error_{2024-2016} = \sqrt{5.150^2 + 2.968^2} = 5.944$$

The equating error between 2024 and 2013 is the square root of the sum of the 3 squared equating errors between the 4 cycles and the equating error between 2024 and 2010 is square root of the sum of the 4 squared equating errors between the 5 cycles.

$$error_{2024-2013} = \sqrt{5.150^2 + 2.968^2 + 4.424^2} = 7.140$$

 $error_{2024-2010} = \sqrt{5.150^2 + 2.968^2 + 4.424^2 + 4.848^2} = 8.855$

Plausible values

Plausible values methodology was used to generate estimates of students' civic and citizenship achievement. Using item parameters anchored at their estimated values from the calibration process, plausible values were randomly drawn from the marginal posterior of the latent distribution (Mislevy 1991; Mislevy and Sheehan 1987; von Davier, Gonzalez and Mislevy 2009). Here, "not reached" items were included as incorrect responses, just like other (embedded) missing responses. Estimations are based on the conditional item response model and the population model, which includes the regression on background and survey variables used for conditioning (see a detailed description in Adams and Wu 2002). The ACER ConQuest software was used for drawing plausible values. Plausible values were drawn nationally by year level (ACARA 2020).

Some variables were used as direct regressors in the conditioning model for drawing plausible values. The variables included dummy variables of explicit strata of jurisdiction by sector, school mean performance adjusted for the student's own performance¹⁵, the school's geolocation and the student-level variables of gender, Indigenous status, language background other than English (LBOTE), highest parental education (PARED) and highest parental occupation group (POCC). Principal component analysis (PCA) was used to extract component scores from all other student-background variables and responses to questions in the student survey. The principal components were estimated separately by year level. Subsequently, the components that explained 99% of the variance in the original variables were included as regressors in the final conditioning model for each year level. Details of the coding of variables included directly in the conditioning model or included in the PCA are listed in Appendix G.

Scaling questionnaire items

The student questionnaire included items primarily measuring constructs within broad areas of interest: students' attitudes towards civics and citizenship issues (6 scales) and students' engagement in civics and citizenship activities (5 scales). For the current cycle, a new construct was included measuring exposure to civics and citizenship topics at school. The content of the constructs was described in Chapter 2. This section describes the scaling procedures and the psychometric properties of the questionnaire scales.

Most of the questionnaire scaling procedures remain the same as for the 2019 cycle. A few changes were made to the survey in 2024, including the creation of 2 new scales, modification of 8 existing items and the addition of 16 new items. Based on conceptual grounds, the question on students' perceptions of problems affecting Australia (PROBLEM), which was included as a scale in the previous cycle, was not scaled in 2024.

There were some differences in the composition of the derived questionnaire scales, as detailed below.

- There were new scales for student intentions to engage in social movement related activities and student exposure to civics and citizenship topics at school.
- Three new items were included in the scale to measure students' intentions to promote important issues in the future.

Before estimating student scale scores for the questionnaire indices, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were carried out for all scales to evaluate the dimensionality of each set of items. The CFA largely confirmed the expected dimensional structure and the resulting scales had satisfactory reliabilities. For example, there were 10 items designed to measure intentions to promote important issues in the future (PROMIS) for Year 6 students and 5 items reflecting student intentions to engage in civic action (CIVACT) for both Year 6 and Year 10 students. The analyses confirmed the expected one-dimensional factor structure of each of these item sets.

Table 5.1 shows scale descriptions, scale names and number of items for each scale in the Year 6 questionnaire. If the number of items in the Year 10 questionnaire differs from the Year 6 questionnaire, this number is indicated in parentheses. In addition, the table includes the score range, scale reliabilities (Cronbach's alpha) as well as the correlations with student achievement for each year level.

¹⁵ Weighted likelihood estimates (WLEs) were used as ability estimates in this case (Warm 1989).

Table 5.1: Description of questionnaire scales

	Index	Question	Number	Scores	Cronbac	ch's alpha	Correlation with achievement	
	name	number	of items	000100	Year 6	Year 10	Year 6	Year 10
Students' engagement in civic and	citizenship a	activities						
Intentions to promote important issues in the future	PROMIS	Q4	10(11)	0-3	0.84	0.91	0.07	0.24
Student intentions to engage in civic action	CIVACT ¹	Q5	5	0-3	-	0.81	-	0.18
Student intentions to engage in social movement related action	SOCACT ¹	Q5	4	0-3	-	0.87	-	0.2
Interest in civic issues	CIVINT	Q6	6	0-3	0.81	0.87	0.15	0.32
Confidence to engage in civic action	CIVCONF	Q7	5(9)	0-3	0.81	0.92	0.27	0.34
Belief in value of civic action	VALCIV	Q8	5(6)	0-3	0.75	0.88	0.25	0.31
Students' attitudes towards civic a	nd citizenshi	ip issues						
The importance of conventional citizenship	IMPCCON	Q9	6	0-3	0.76	0.85	0.12	0.27
The importance of social movement related citizenship	IMPCSOC	Q9	4	0-3	0.82	0.89	0.23	0.3
Trust in civic institutions and processes	CIVTRUST	Q10	6	0-3	0.87	0.93	0.16	0.16
Attitudes towards Aboriginal and Torres Strait Islander Histories and Cultures	ATINCULT	Q11	6	0-3	0.9	0.95	0.25	0.33
Attitudes towards Australian diversity	ATAUSDIF1	Q12	7	0-3	-	0.93	-	0.3
Classroom contexts for civic and citizenship education								
Exposure to civic and citizenship topics at school	TOPIC	Q14	8(10)	0-3	0.84	0.91	-0.04	0.15

¹ Indices only available for Year 10

Student and item parameters were estimated using the ACER ConQuest software. Items were scaled using the Rasch partial credit model (Masters and Wright 1997). Item difficulty parameters and students' attitudes (WLEs) were estimated for Year 6 and Year 10 separately on the full sample, weighting all states and territories equally.

When calibrating the item parameters, for each scale the average item difficulty was fixed to zero. Then, horizontal equating was conducted to put the student scores onto the same scale as last cycle so that the results could be compared. The transformation was applied as follows:

$$WLE^{T} = ((WLE + e + d + c^{16} - b) / a) * 10 + 50$$

Where:

- WLET is the transformed score for student T, WLE is the estimate of the student's attribute in logits
- e is the horizontal equating shift for Year 6 or Year 10 from 2024 to 2019
- d is the horizontal equating shift for Year 6 or Year 10 from 2019 to 2010

¹⁶ This term is only applicable to some scales.

- c is the vertical equating shift for Year 6 or Year 10 student scores established in 2010 for CIVCONF, CIVTRUST, PROMIS and VALCIV
- b is the 2010 mean estimate in logits of the Year 10 students
- a is the 2010 standard deviation in logits of the Year 10 students.

The scales were converted to a metric with a mean score of 50 and a standard deviation of 10 with the Year 10 cohort as the reference. A detailed description about the 2010 vertical equating shift is given in the NAP–CC 2010 Technical Report (Gebhardt, Fraillon, Wernert and Schulz 2011).

ATAUSDIF was considered to be a new scale in 2019 as it had been heavily modified. Therefore, it was not equated back to the historical scale. The 2024 scale was equated to the 2019 scale.

Table 5.2: Transformation parameters for questionnaire scales

		o 2019 Il Shift (e)		o 2010 al Shift (d)	20 Vertical	10 Shift (c)	2010 Mean (b)	2010 SD (a)
	Year 6	Year 10	Year 6	Year 10	Year 6	Year 10	Year 10	Year 10
ATINCULT	0.00	-0.03	0.00	0.00			2.42	2.50
ATAUSDIF	-	0.00	-	-			2.34 [†]	2.78 [†]
CIVACT	-	0.00	-	0.00			-0.98	1.56
CIVCONF	-0.14	-0.06	0.15	0.04	-0.14	0.02	0.10	1.74
CIVINT	0.00	0.00	-0.10	-0.06			0.28	1.69
CIVTRUST	0.00	0.00	0.02	0.03	0.00	-0.13	-0.07	1.92
IMPCCON	0.00	0.00	-0.10	-0.13			0.55	1.63
IMPCSOC	-0.26	-0.33	-0.16	-0.20			1.03	2.15
PROMIS	-0.11	-0.01	-0.07	-0.09	0.05	-0.03	-0.15	1.46
VALCIV	0.00	0.00	-0.02	-0.03		0.03	1.41	1.63

[†] 2019 Mean and SD were used for ATAUSDIF

Similar to the equating process of the cognitive scale, equating errors need to be applied when comparing results of 2024 with results from 2019. For the questionnaire scales, all items were within the same units and had the same maximum score. Therefore, a less complicated formula was used to compute the equating errors. After adjusting the item difficulties by applying the shifts so that the average difficulty of the items in a scale is equal in 2024 and 2019, the following formula was applied:

$$EqErr = \frac{SD(d_i)}{\sqrt{N}}$$

where d_i is the difference between the adjusted difficulties of item i in 2019 and 2024 and N is the number of items in each scale.

The equating errors are presented in Table 5.3.

Table 5.3: Equating errors for questionnaire scales

	Equating Error (2024 with 2019)				
	Year 6	Year 10			
ATINCULT	0.05	0.07			
ATAUSDIF	-	0.09			
CIVACT	-	0.11			
CIVCONF	0.06	0.07			
CIVINT	0.11	0.14			
CIVTRUST	0.08	0.08			
IMPCCON	0.04	0.07			
IMPCSOC	0.04	0.07			
PROMIS	0.05	0.06			
VALCIV	0.07	0.03			

Chapter 6: Proficiency levels and the proficient standard

One of the key objectives of NAP-CC is to monitor and report trends in civics and citizenship achievement over time. As is standard practice in NAP sample assessments, 2 summary measures of student achievement are used in addition to reporting students' NAP-CC proficiency solely in terms of average scale score achievement. These are:

- 1. Proficiency level achievement. For NAP-CC, a set of 6 proficiency levels was developed, each representing a range on the scale that was accompanied by descriptions of the skills and capabilities associated with that level. The percentage of students performing at each proficiency level provided a measure of student achievement.
- 2. Proficient standard achievement. The proficient standards represent points on the NAP-CC scale indicating a "challenging but reasonable" proficiency level that Year 6 and Year 10 students would be expected to reach. The percentage of students who had attained (that is, reached or exceeded) the proficient standard presented an additional measure of student performance. The proportion of students achieving at or above the proficient standard is also the national Key Performance Measure (KPM) specified in the Measurement Framework for Schooling in Australia (ACARA 2023).

This chapter describes the development of these 2 measures for NAP-CC.

Proficiency levels

The NAP-CC scale forms the basis for the empirical comparison of student achievement. In addition to the scale, a set of 6 proficiency levels with substantive descriptions was established in 2004. These described levels were syntheses of the item contents within each level. Scale level descriptions have been reviewed following each cycle of the assessment, including most recently in 2024, to ensure they accurately reflect the NAP-CC assessment content.

Comparison of student achievement against the proficiency levels provides an empirically and substantively convenient way of describing profiles of student achievement. Students whose results are located within a particular level of proficiency are typically able to demonstrate the understandings and skills associated with that level. They also typically possess the understandings and skills defined as applying to lower proficiency levels.

Creating the proficiency levels

Assumptions underpinning the proficiency levels

The proficiency levels were established in 2004 and were based on an approach developed for the OECD's Project for International Student Assessment (PISA). For PISA, a method was developed that ensured that the notion of being at a level could be interpreted consistently and in line with the fact that the achievement scale is a continuum. This method ensured that there was some common understanding about what being at a level meant and that the meaning of being at a level was consistent across levels.

Similar to the approach taken in the PISA study (OECD 2005: 255), this method takes the following 3 variables into account:

- the expected success of a student at a particular level on a test containing items at that level
- the width of the levels in that scale
- the probability that a student in the middle of a level would correctly answer an item of average difficulty for that level.

To achieve this for NAP-CC, the following 2 parameters for defining proficiency levels were adopted:

- setting the response probability for the analysis of data at p = 0.62
- setting the width of the proficiency levels at 1.00 logit.

With these parameters established, the following statements can be made about the achievement of students relative to the proficiency levels.

- A student at the lowest possible point of the proficiency level is likely to get 50% correct on a test made
 up of items spread uniformly across the level, from the easiest to the most difficult. In other words, any
 student whose performance is within a level is expected to respond correctly to at least 50% of the
 items that are located within the same level and is therefore regarded as being able to demonstrate
 skills required to answer items at that level.
- A student at the lowest possible point of the proficiency level is likely to get 62% correct on a test made up of items similar to the easiest items in the level.
- A student at the top of the proficiency level is likely to get 82% correct on a test made up of items similar to the easiest items in the level.

Establishing the position of and describing the proficiency levels

The positioning of the proficiency levels on the NAP-CC scale was done together with a standards setting exercise in which a proficient standard was established for each year level. The Year 6 proficient standard was set at 405 scale points – the cut-point between Level 1 and Level 2 on the NAP-CC scale. The Year 10 proficient standard was set at 535 scale points – the cut-point between Level 2 and Level 3 (details of the standard-setting procedures are reported later in this chapter).

Proficiency level cut-points

Six proficiency levels were generated for reporting student achievement. Table 6.1 shows these levels and shows the percentage of Year 6 and Year 10 students in each level in NAP-CC 2019.

Table 6.1: Proficiency level cut-points and percentage of Year 6 and Year 10 students in each level in 2024

	Lower level boundary	Perce	ntages
Proficiency Level	(scale points)	Year 6	Year 10
Level 5	795		0 (±0.2)
Level 4	665	0 (±0.3)	4 (±0.9)
Level 3	535	9 (±1.5)	24 (±2.2)
Level 2	405	34 (±2.2)	40 (±2.7)
Level 1	275	39 (±2.1)	24 (±2.6)
Below Level 1		18 (±1.9)	9 (±1.8)

Describing proficiency levels

The proficiency levels were described using a combination of expert descriptions of the knowledge and skills required to answer each civics and citizenship item, and information from the analysis of students' responses. Each level description provides a synthesised overview of the civics and citizenship and history knowledge and understanding that a student working within the level is able to demonstrate as evidenced by the assessment items within that level.

Summary descriptors for levels 1 to 5 of the NAP-CC scale were established in the first cycle of NAP-CC in 2004. A descriptor for "below level 1" achievement was developed in 2007 when more test material was available to support this description.

Routinely as part of each NAP-CC cycle, the proficiency level descriptors are reviewed with respect to new item content and consequently revised if warranted. New examples of achievement at each level are also added to supplement the level descriptors as appropriate.

The proficiency level descriptors were updated in 2013 to reflect the larger pool of items that had been developed over the cycles since 2004. In 2019, the scale descriptors were revised to reflect the inclusion of items from the NAP-CC history sub-strand of the revised NAP-CC Assessment Framework. For 2024, the descriptors for the higher proficiency levels were further refined to provide additional details related to historical contexts.

The NAP-CC scale represents a hierarchy of students' knowledge, skills and understanding associated with civics and citizenship content. The scale describes a developmental learning progression in the sense that students are assumed to be typically able to demonstrate achievement of the content and cognitive processes described at the level below, as well as at their measured level of achievement.

The proficiency level descriptors are provided in Appendix H.

Setting the proficient standards

The proficient standards "represent a 'challenging but reasonable' expectation of student achievement at a year level with students needing to demonstrate more than elementary skills expected at that year level" (ACARA 2023:6). This is different from the definition of either a benchmark or a national minimum standard, which refer to minimum competence.

The process for setting standards in areas such as primary science, information and communications technologies, civics and citizenship, and secondary (15-year-old) reading, mathematics and science was endorsed by the Performance Measurement and Reporting Taskforce (PMRT) at its 6 March 2003 meeting and is described in the paper, Setting National Standards (PMRT 2003).

The Year 6 and Year 10 proficient standards for NAP-CC were set in March 2005, with an expert group of civics and citizenship educators from all Australian jurisdictions using a combination of a modified Angoff (yes/no) and Bookmark standards-setting procedures. A description of this process is given in the NAP-CC 2004 Technical Report.

To access the NAP-CC public report and technical report documents from previous cycles, visit www.nap.edu.au.

By referring to the proficient standards, Year 6 students performing at level 2 and above, and Year 10 students performing at level 3 and above have consequently met or exceeded their relevant proficient standard.

The proficient standards for Year 6 and Year 10 civics and citizenship achievement were endorsed by the Key Performance Measures subgroup of the PMRT in 2005. These standards have remained unchanged as the KPMs for civics and citizenship across all subsequent cycles (ACARA 2023:13).

Chapter 7: Reporting of results

The students assessed in NAP-CC 2024 were selected using a 2-stage cluster sampling procedure. At the first stage, schools were sampled from a sampling frame with a probability proportional to their size as measured by student enrolments in the relevant year level. In the second stage, 20 students at each year level were randomly sampled within schools (see Chapter 3 for further information on sampling and weighting).

Applying cluster sampling techniques is an efficient and economical way of selecting students in educational research. However, as these samples were not obtained through (one-stage) simple random sampling, standard formulae to obtain sampling errors of population estimates are not appropriate. In addition, NAP-CC estimates were obtained using plausible value methodology (see Chapter 5 on scaling procedures), which allows for estimating and combining the measurement error of achievement scores with their sampling error.

Reporting of results by subgroups of interest becomes more limited as group sizes decrease due to the increase in error that accompanies this. For this cycle of NAP-CC, the gender category "other" is not reported because there are fewer than 30 students with valid data.

This chapter describes the method applied for estimating sampling as well as measurement error. In addition, it contains a description of the types of statistical analyses and significance tests that were carried out for reporting of results in the NAP-CC 2024 Public Report (ACARA 2025).

Computation of sampling and measurement variance

Unbiased standard errors from studies should include both sampling variance and measurement variance. One way of estimating sampling variance on population estimates from cluster samples is by using the application of replication techniques (Wolter 1985; Gonzalez and Foy 2000). The sampling variances of population means, differences, percentages and correlation coefficients in NAP–CC studies were estimated using the jackknife repeated replication technique (JRR). The other component of the standard error of achievement test scores, the measurement variance, can be derived from the variance among the 5 plausible values for NAP–CC. In addition, for comparing achievement test scores with those from previous cycles (2004, 2007, 2010, 2013, 2016 and 2019), an equating error was added as a third component of the standard error.

Replicate weights

When applying the JRR method for stratified samples, primary sampling units (PSUs) – in this case schools – are paired into pseudo-strata, also called sampling zones. The assignment of schools to these sampling zones needs to be consistent with the sampling frame from which they were sampled (to obtain pairs of schools that were adjacent in the sampling frame) and zones are always constructed within explicit strata of the sampling frame. This procedure ensures that schools within each zone are as similar to each other as possible ¹⁷. For NAP–CC 2024 there were 167 sampling zones each in Year 6 and Year 10.

Within each sampling zone, one school was randomly assigned a value of 2, whereas the other one received a value of zero. To create replicate weights for each of these sampling zones, the jackknife indicator variable was multiplied by the original sampling weights of students within the corresponding zone so that one of the paired schools had a contribution of zero and the other school a double contribution, whereas schools from all other sampling zones remained unmodified.

At each year level, 167 replicate weights were computed. This was done in order to have a consistent number of replicate weight variables in the final database.

¹⁷ In the case of an odd number of schools within an explicit stratum on the sampling frame, the remaining school is randomly divided into 2 halves and each half assigned to the 2 other schools in the final sampling zone to form pseudo-schools.

Standard errors

In order to compute the sampling variance for a statistic t, t is estimated once for the original sample S and then for each of the jackknife replicates J_h . The JRR variance is computed using the formula:

$$Var_{jrr}(t) = \sum_{h=1}^{H} [t(J_h) - t(S)]^2$$

where H is the number of replicate weights, t(S) is the statistic t estimated for the population using the final sampling weights, and $t(J_h)$ is the same statistic estimated using the weights for the hth jackknife replicate. For all statistics that are based on variables other than student test scores (plausible values), the standard error of t is equal to:

$$\sigma(t) = \sqrt{Var_{jrr}(t)}$$

The computation of JRR variance can be obtained for any statistic. However, many standard statistical software packages such as SPSS® do not generally include any procedures for replication techniques. Therefore, specialist software, the SPSS® Replicates add-in, was used to run tailored SPSS® macros to estimate JRR variance for means and percentages¹⁸.

Population statistics for NAP-CC scores were always estimated using all 5 plausible values, with standard errors reflecting both sampling and measurement error. If t is any computed statistic and t_j is the statistic of interest computed on one plausible value, then:

$$t = \frac{1}{M} \sum_{i=1}^{M} t_i$$

with *M* being the number of plausible values.

The sampling variance U is calculated as the average of the sampling variance for each plausible value U_i :

$$U = \frac{1}{M} \sum_{i=1}^{M} U_i$$

Using 5 plausible values for data analysis allows the estimation of the error associated with the measurement of NAP-CC due to the lack of precision of the test instrument. The measurement variance or imputation variance B_m was computed as:

$$B_m = \frac{1}{M-1} \sum_{i=1}^{M} (t_i - t)^2$$

To obtain the final standard error of NAP-CC statistics, the sampling variance and measurement variance were combined as:

$$SE = \sqrt{U + \left(1 + \frac{1}{M}\right)} B_m$$

with *U* being the sampling variance.

The 95% confidence interval, as presented in the NAP-CC 2024 Public Report (ACARA 2025), was computed as 1.96 times the standard error. The actual 95% confidence interval of a statistic is between the value of the statistic minus 1.96 times the standard error and the value of the statistic plus 1.96 times the standard error.

Conceptual background and application of macros with examples are described in the PISA Data Analysis Manual SPSS®, 2nd edition (OECD 2009b).

Reporting of mean differences

This report includes comparisons of average achievement across states and territories; that is, averages of scales and percentages were compared in graphs and tables. Each population estimate was accompanied by its 95% confidence interval. In addition, tests of significance for the difference between estimates were provided, in order to describe the probability that differences were just a result of sampling and measurement errors.

The following types of significance tests for differences in average achievement population estimates were reported:

- · between states and territories
- between student background subgroups
- across the 7 assessment cycles (2004, 2007, 2010, 2013, 2016, 2019 and 2024).

Mean differences between states and territories and year levels

Pairwise comparison charts allow the comparison of population estimates between one state or territory and another or between Year 6 and Year 10. Differences in averages were considered significant when the test statistic t was outside the critical values ± 1.96 ($\alpha = 0.05$). The t value is calculated by dividing the difference in averages by its standard error that is given by the formula:

$$SE_{dif_ij} = \sqrt{SE_i^2 + SE_j^2}$$

where SE_{dif_ij} is the standard error on the difference and SE_i and SE_j are the standard errors of the compared averages i and j. The standard error on a difference can only be computed this way if the comparison is between 2 independent samples like states and territories or year levels. Samples are independent if they were drawn separately.

Mean differences between dependent subgroups

The formula for calculating the standard error provided above is only suitable when the subsamples being compared are independent (see OECD 2009a for more detailed information). In the case of dependent subgroups, the covariance between the 2 standard errors needs to be taken into account and the Jackknife repeated replication (JRR) technique should be used to estimate the sampling error for average differences.

As subgroups other than "state or territory" and "year level" are dependent subsamples (for example, gender and language background subgroups), the difference between statistics for subgroups of interest and the standard error of the difference were derived using the specialist software *SPSS® Replicates Addin* that runs macros to apply JRR. Differences between subgroups were considered significant when the test statistic t was outside the critical values ± 1.96 ($\alpha = 0.05$). The value t was calculated by dividing the average difference by its standard error.

Mean differences between assessment cycles

This report also includes comparisons of assessment results across cycles. As the process of equating the tests across the cycles introduces some additional error into the calculation of any test statistic, an equating error term was added to the formula for the standard error of the difference (between cycle averages, for example).

The value of the equating error between 2024 and 2019 is 5.150 units of the civics and citizenship scale for Year 6 and 4.183 for Year 10. When testing the difference of a statistic between the 2 assessments, the standard error of the difference is computed as follows:

$$SE(\mu_{24} - \mu_{19}) = \sqrt{SE_{24}^2 + SE_{19}^2 + EqErr_{24-19}^2}$$

where μ can be any statistic in units on the NAP-CC scale (average, percentile, gender difference, but *not* percentages), SE_{24}^2 is the respective standard error of this statistic in 2024, SE_{19}^2 is the respective standard error of this statistic in 2019, and $EqErr_{24-19}^2$ is the equating error for comparing 2024 with 2019 results.

When comparing population estimates between 2024 and the third assessment in 2016, 2 equating errors (between 2024 and 2019 and between 2019 and 2016) had to be taken into account. This was achieved by applying the following formula for the calculation of the standard error for differences between statistics from 2024 and 2016:

$$SE(\mu_{24} - \mu_{16}) = \sqrt{SE_{24}^2 + SE_{16}^2 + EqErr_{24-16}^2}$$

For Year 6, $EqErr_{24-16}^2$ reflects the uncertainty associated with the equating between the assessment cycles of 2024 and 2019 (5.15 score points), as well as between 2019 and 2016 (2.97 score points). This combined equating error was equal to 5.94 score points and was calculated as:

$$EqErr_{24_{16}} = \sqrt{EqErr_{24_{19}}^2 + EqErr_{19_{16}}^2}$$

Similarly, for comparisons between 2024 and the first cycle in 2004, the equating errors between each adjacent pair of assessments had to be taken into account and standard errors for differences were computed as:

$$SE(\mu_{24} - \mu_{04}) = \sqrt{SE_{24}^2 + SE_{04}^2 + EqErr_{24-04}^2}$$

The combined equating error for Year 6 was equal to 11.17 score points, and was calculated as:

$$EqErr_{24_04}^2 = \sqrt{\text{EqErr}_{24_{19}}^2 + \text{EqErr}_{19_{16}}^2 + \text{EqErr}_{16_{13}}^2 + \text{EqErr}_{13_{10}}^2 + \text{EqErr}_{10_{07}}^2 + \text{EqErr}_{07_{04}}^2}$$

The equating errors for comparing averages between 2024 and each previous NAP-CC cycle are provided in Table 7.1.

Table 7.1: Equating errors for comparing averages between NAP-CC 2024 and each previous assessment cycle

Assessment cycle years	Equating error of average difference (scale points)			
Cycle years	Year 6	Year 10		
2024-2019	5.15	4.18		
2024-2016	5.94	5.23		
2024-2013	7.41	6.83		
2024-2010	8.85	8.30		
2024-2007	10.31	9.35		
2024-2004	11.17	9.61		

Differences in percentages between assessment cycles

To report the significance of differences between percentages at or above proficient standards, the equating error for each year level could not be applied directly. Therefore, the following replication method was applied to estimate the equating error for percentages at proficient standards.

For each year level cut-point that defines the corresponding proficient standard (405 for Year 6 and 535 for Year 10), a number of n replicate cut-points were generated (5,000) by adding a random error component with an average of 0 and a standard deviation equal to the estimated equating error. Percentages of students at or above each replicate cut-point (ρ_n) were computed and an equating error for each year level was estimated as:

$$EquErr(\rho) = \sqrt{\frac{(\rho_n - \rho_o)^2}{n}}$$

where ρ_o is the percentage of students at or above the (reported) proficient standard. The standard errors for the differences between percentages at or above proficient standards were calculated as:

$$SE(\rho_{24} - \rho_{19}) = \sqrt{SE(\rho_{24})^2 + SE(\rho_{19})^2 + EqErr(\rho)^2}$$

where ρ_{19} and ρ_{24} are the percentages at or above the proficient standard in 2019 and 2024 respectively.

The equating errors for comparing percentage achievement between 2024 and each previous NAP-CC cycle are provided in Table 7.2 and Table 7.3 for Year 6 and Year 10 respectively.

Table 7.2: Equating errors for comparing averages between NAP-CC 2024 and each previous assessment cycle (Year 6)

V		Equating Error 2024 with					
Year	Group	2019	2016	2013	2010	2007	2004
6	Australia	1.70	1.94	2.37	2.80	3.24	3.51
6	NSW	1.78	2.00	2.39	2.77	3.16	3.39
6	VIC	1.80	1.99	2.37	2.78	3.22	3.49
6	QLD	1.76	2.04	2.53	3.02	3.50	3.78
6	SA	1.57	1.83	2.33	2.82	3.31	3.61
6	WA	1.69	1.97	2.49	2.99	3.47	3.76
6	TAS	1.41	1.68	2.17	2.64	3.10	3.36
6	NT	1.20	1.41	1.78	2.14	2.49	2.71
6	ACT	1.63	1.84	2.23	2.62	3.03	3.29
6	Female	1.81	2.09	2.58	3.05	3.53	3.80
6	Male	1.61	1.81	2.19	2.58	3.00	3.25
6	Non-Indigenous students	1.75	1.99				
6	Indigenous students	1.28	1.43				
6	English	1.68	1.93				
6	Language other than English	1.71	1.92				
6	Major cities	1.76					
6	Regional	1.68					
6	Remote	0.62					
6	Senior Managers and Professionals	1.82	2.06				
6	Other Managers and Associate Professionals	2.01	2.26				
6	Tradespeople & skilled office, sales and service staff	1.83	2.08				
6	Machine operators, labours, hospitality, and related staff	1.33	1.52				
6	Not in paid work in last 12 months	1.54	1.80				
6	Not stated or unknown	1.34	1.49				
6	Year 11 or equivalent or below	0.92	0.99				
6	Year 12 or equivalent	1.03	1.23				
6	Certificate 1 to 4 (inc trade cert)	1.77	2.04				
6	Advanced Diploma/Diploma	1.55	1.80				
6	Bachelor degree or above	1.90	2.13				
6	Not stated or unknown	2.37	2.60				

Table 7.3: Equating errors for comparing averages between NAP-CC 2024 and each previous assessment cycle (Year 10)

	Craur	Equating Error 2024 with					
Year	Group	2019	2016	2013	2010	2007	2004
10	Australia	1.28	1.60	2.07	2.49	2.77	2.84
10	NSW	1.24	1.53	1.96	2.34	2.61	2.67
10	VIC	1.77	2.17	2.73	3.23	3.56	3.64
10	QLD	1.17	1.50	1.97	2.39	2.68	2.75
10	SA	0.86	1.12	1.53	1.90	2.17	2.24
10	WA	1.10	1.40	1.86	2.26	2.55	2.62
10	TAS	1.38	1.63	1.97	2.28	2.50	2.55
10	NT	0.53	0.63	0.82	1.02	1.16	1.21
10	ACT	1.31	1.67	2.24	2.78	3.15	3.25
10	Female	1.20	1.51	1.97	2.39	2.69	2.76
10	Male	1.38	1.71	2.19	2.60	2.88	2.95
10	Non-Indigenous students	1.29	1.61				
10	Indigenous students	1.18	1.57		_	_	_
10	English	1.29	1.62				
10	Language other than English	1.21	1.53				
10	Major cities	1.24					
10	Regional	1.49					
10	Remote	0.68					
10	Senior Managers and Professionals	1.41	1.86				
10	Other Managers and Associate Professionals	1.65	1.96				
10	Tradespeople & skilled office, sales and service staff	1.21	1.47				
10	Machine operators, labours, hospitality, and related staff	1.04	1.24				
10	Not in paid work in last 12 months	1.38	1.59				
10	Missing	0.97	1.16				
10	Year 11 or equivalent or below	2.20	2.51				
10	Year 12 or equivalent	0.93	1.14				
10	Certificate 1 to 4 (inc trade cert)	0.93	1.12				
10	Advanced Diploma/Diploma	1.05	1.35				
10	Bachelor degree or above	1.53	1.93				
10	Not stated or unknown	2.02	2.62				

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Appendices

Appendix A. Student questionnaire

All questions were presented to both Year 6 and Year 10 students unless otherwise stated.

Q01

At this school, I			
Select one choice in each row.			
	Yes	No	This is NOT available at my school
have voted for class representatives.			
have been elected onto a Student Council, Student Representative Council (SRC) or class/school parliament.			
have helped to make decisions about how the school is run.			
have helped prepare a school web page, social media post, newspaper or magazine.			
have participated in peer support, 'buddy' or mentoring programs.			
have participated in activities in the community (e.g. collecting money for a charity or volunteering).			
have represented the school in activities outside of class (such as drama, sport, music or debating).			
have been a candidate in a Student Council, Student Representative Council (SRC) or class/school parliament election.			
have participated in an excursion to a parliament, local government or law court.			

Q02 - Year 10 only

Think of activities that you can participate in that are NOT organised by your school. Have you ever participated in activities associated with each of the following? Select one choice in each row.						
	Yes, I have done this within the past 12 months	Yes, I have done this but not within the past 12 months	No, I have never done this			
collecting money for a charity or social cause						
a voluntary group doing something to help the community						
an environmental organisation						
a human rights organisation						
a youth development organisation (e.g. Scouts, Australian Services Cadets, Police and Community Youth Clubs)						
an animal rights or protection organisation						
a protest or demonstration about a political or social issue						

Q03

Outside of school, how often do you...

Select one choice in each row.

	At least once a day	At least three times a week	At least once a week	At least once a month	Never or hardly ever
use the internet (including social media) to get news of current events?					
watch the news on television?					
listen to news on the radio or on podcasts?					
read about current events in a paper or online newspaper?					
talk about political or social issues with your family?					
talk about political or social issues with your friends?					

Additional options presented to Year 10 only post your own content about a political or social issue on the internet (including social media)? share a comment or image about a political or social issue from someone else on the internet (including social media)? Q04 There are many different ways to express your opinions about important issues. Would you do any of the following in the future? Select one choice in each row. I would I would I would probably I would certainly certainly do probably do NOT do this NOT do this this this sign an online petition write to a newspaper or publication write your opinion about an issue on the internet (e.g. on social media, a blog or web forum) encourage others to participate in activities that help protect the environment wear a badge, hat or T-shirt expressing your opinion contact a member of parliament or a local council take part in a protest or demonstration collect signatures for a petition choose not to buy certain products or brands of product as a protest participate in a strike at school to raise awareness about environmental issues

content (e.g. podcasts) about an issue to share on the internet (including social media)

produce visual content (e.g. videos, images) or audio

Additional option presented to Year 10 only

Q05 - Year 10 only

There are many different ways people can participate in the community. Which of the following will you do in the future? Select one choice in each row.								
	I will certainly do this	I will probably do this	I will probably NOT do this	I will certainly NOT do this				
find information about candidates before voting in an election								
help a candidate or party during an election campaign								
join a political party								
join a trade union or other union								
stand as a candidate in local council or shire elections								
join an environmental organisation								
volunteer for a charity								
join a human rights organisation								
join an animal rights or protection organisation								
06								
How interested are you in the following Select one choice in each row.	?							
	Very interested	Quite interested	Not very interested	Not interested at all				
what is happening in your local community								
Australian politics								

social issues in Australia

global (worldwide) issues

environmental issues in Australia

what is happening in other countries

Q07

Select one choice in each row.

How well do you think you could do each of the following?

	Very well	Fairly well			
discuss news about a conflict between countries					
argue your opinion about a political or social issue					
be a candidate in a school or class election					
express your opinion on a current issue to a newspaper or publication					
be able to identify the reliability of information on the internet or social media about a political or social issue					
Additional options presented to Year 10 only					
organise a group of students in order to achieve changes at school					
give a speech to your class about a political or social issue		0	0	0	
present information about a political or social issue on social media			0	0	
express your own opinion in a post on social media		0	0		
Q08					
How much do you agree or disagree with each of the following some choice in each row.	statements?				
	Strongly agree	Agree	Disagree	Strongly disagree	
If students act together at school they can make real change happen.					
Elected student representatives (such as members of the Student Council or Student Representative Council) contribute to school decision making.					
Council or Student Representative Council) contribute to school			0		
Council or Student Representative Council) contribute to school decision making. Student participation in how schools are run can make schools					

Additional option presented to Year 10 only

Citizens can have a strong influence on government policies in Australia.					
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Q09

How important do you think the following are for being a good citizen in Australia? Select one choice in each row.

	Very important	Quite important	Not very important	Not important at all
supporting a political party				
learning about Australia's history				
learning about political issues in the newspaper, on the radio, on TV or on the internet				
learning about what happens in other countries				
discussing politics				
taking part in protests or demonstrations about important issues				
participating in activities to benefit the local community				
taking part in activities promoting human rights				
taking part in activities to protect the environment				
making personal efforts to protect natural resources (e.g. water saving, recycling)				
voting in elections				
always obeying the law				
showing responsible behaviour during national crises (e.g. during the COVID-19 pandemic)				
always following government directives during national crises (e.g. during the COVID-19 pandemic)				

Q10

	Completely	Quite a lo	ot A little	Not at
the Australian parliament				
your state or territory parliament				
your local government (e.g. local council or shire)				
law courts				
the police				
Australian political parties				
the media (i.e. television, newspapers, radio)				
social media (e.g. Twitter, blogs, YouTube, Facebook, Instagram)				
scientists and scientific research organisations				
ow much do you agree or disagree with the following statemen eoples?	ts about Abo	riginal and	l Torres Str	rait Island
low much do you agree or disagree with the following statemen eoples? elect one choice in each row.	Strongly	riginal and	d Torres Str	Strongly
ow much do you agree or disagree with the following statemen eoples? elect one choice in each row.				Strongly
ow much do you agree or disagree with the following statemen eoples? elect one choice in each row. Australia should support the cultural traditions and languages of	Strongly			Strongly
ow much do you agree or disagree with the following statemen eoples? elect one choice in each row. Australia should support the cultural traditions and languages of Aboriginal and Torres Strait Islander peoples. Australia has a responsibility to work with Aboriginal and Torres Strait	Strongly			Strongly
ow much do you agree or disagree with the following statemen eoples? elect one choice in each row. Australia should support the cultural traditions and languages of Aboriginal and Torres Strait Islander peoples. Australia has a responsibility to work with Aboriginal and Torres Strait Islander peoples to improve their life outcomes.	Strongly			Strongly
ow much do you agree or disagree with the following statemen eoples? elect one choice in each row. Australia should support the cultural traditions and languages of Aboriginal and Torres Strait Islander peoples. Australia has a responsibility to work with Aboriginal and Torres Strait Islander peoples to improve their life outcomes. It is important to recognise the traditional ownership of their land by Aboriginal and Torres Strait Islander peoples.	Strongly			Strongly
low much do you agree or disagree with the following statemen eoples?	Strongly			

How much do you agree or disagree with the following statements about Australian society? Select one choice in each row.

	Strongly agree	Agree	Disagree	Strongly disagree
Immigrants should be encouraged to keep their cultural beliefs, practices and languages.				
Australia will remain a peaceful country as more people from different backgrounds come to live here.				
Australia benefits greatly from having people from many cultures and backgrounds.				
At school, all students should learn about different cultural beliefs and practices.				
All Australians should respect different cultural beliefs and practices.				
Having people from many different cultures and backgrounds makes it easier for a country to be united.				
Australia will be a better place in the future as more people with different backgrounds come to live here.				

Below is a list of problems affecting countries across the world in different ways. In your view, to what extent is Australia affected by each of these problems?

Select one choice in each row.

	To a large extent	To a moderate extent	To a small extent	Not at all
pollution				
unemployment				
terrorism				
poverty				
climate change				
water shortages				
lack of access to high-quality education				
crime				
lack of access to adequate health services				
racism and discrimination				
lack of cyber security and privacy				
economic problems				
health problems (e.g. the COVID-19 pandemic)				

To what extent have the following topics been cover Select one choice in each row.	red in your scho	oling?		
	To a large extent	To a moderate extent	To a small extent	Not at all
Australian political system				
ways to protect the environment				
human rights				
understanding different cultures				
Australia's relationship with Asia				
Australian laws				
Aboriginal and Torres Strait Islander histories and cultures				
how to evaluate the reliability of information about a political or social issue				
dditional options presented to Year 10 only				
international relations				
how the economy works				

Appendix B. Technical Readiness Test (TRT) instructions – Excerpts from the STSO Manual

The nominated School Technical Support Officer (STSO) at each school was tasked with completing a number of technical checks in order to ensure the school's technical set up for the assessment was 'test-ready'. STSOs were asked to complete these tasks in the weeks leading up to the scheduled assessment at their school. The instructions reproduced below are excerpts from the STSO Manual that have been modified slightly to improve readability as an Appendix.

What do you need to do now?

Run a bandwidth test

You must ensure that your school's bandwidth capabilities meet the minimum requirements for the NAP-CC Assessment delivery system. Please make a note of the upload and download speed of the bandwidth test you complete so you can include the results in the STSO technical preparations questionnaire. If possible, do more than one bandwidth test and take an average across all tests.

To conduct the bandwidth test, please navigate to any free online speed test tool. There are many bandwidth tests available online but two are provided below:

https://speedof.me/ http://www.speedtest.net/

The bandwidth test should be done on a student computer that will be used for the assessment. For accuracy, you should also conduct the bandwidth test during normal school hours, if possible.

If your school's internet connection does not meet the following minimum requirements,

- 2 3 Mbps download and
- 100 150 Kbps upload

we may need to contact you to discuss running two or more smaller test sessions.

Install the Locked Down Browser (LDB) on student devices

Students access the NAP–CC assessment via the Locked Down Browser (LDB), so this must be installed on all devices used by students to take the assessment. The LDB is the same application that is used to sit NAPLAN Online testing. Please ensure the LDB is installed on devices used by Year 6 and Year 10 students sitting NAP–CC.

If you experience any issues when installing the LDB please see Section 3 – Getting help, which provides details about where to find further documents to assist you on the Assessform website.

IMPORTANT NOTE: The most recent version of the LDB is needed to access the NAP–CC assessment. If any device already has the LDB installed, you should check that it is not out of date. You can do this by launching the LDB. If the system alerts you that your LDB is out of date, you will need to download a new version.

It is also imperative that the Locked Down Browser is installed on a profile that students will be able to access on the day of the test. The Device Check must also be conducted using this profile whilst accessing the internet connection available to students.

Open a browser and navigate to https://www.assessform.edu.au/

2. Click on the Locked down browser link (Figure 1).

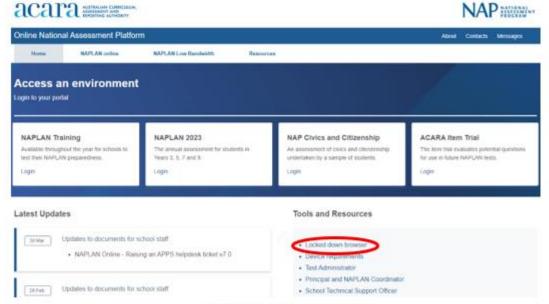


Figure 1: Assessform home page

3. On the Locked down browser page (Figure 2), you will find links to the locked down browser user guides and device requirements information. The LDB user guides provide detailed instructions for installing the LDB on a range of different devices. The Device requirements page outlines the minimum specifications a device must meet to interact successfully with the online assessment platform. You should check that student devices meet these requirements before downloading the locked down browser onto them.

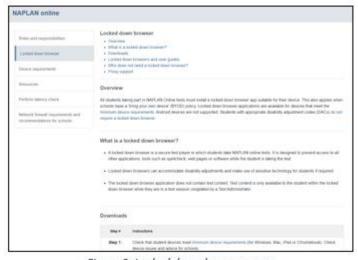


Figure 2: Locked down browser page

4. On the Locked down browser page you will also find download links to the LDB installation files. Click on the appropriate link for the device you are using and install the LDB. Ensure you install the LDB on all devices students will use to take the assessment.

Perform the Device Check on student devices

To ensure that all student devices will be able to successfully run the assessment, you must perform a device check on each machine. Note: the platform offers several ways to perform a device check. For all student computers used in the NAP–CC Assessment, the device check must be performed <u>via the locked down browser</u>. If the check is not performed this way there is a risk that computers/devices may not be able to access the test event on test day.

IMPORTANT NOTE: even if a machine already had the LDB installed and you did not need to download a new version, you must still perform the Device Check.

- 1. Launch the locked down browser.
- Select Device check from the list of options provided (Figure 3). <u>Do not select</u> Device check (without login).



Figure 3: Starting the device check

3. Select NAP Civics and Citizenship from the list of server options provided.

Select server for device check

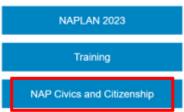


Figure 4: server selection

In the login boxes that appear (Figure 5) enter your STSO username and password (provided in the email sent to you with this document).



Figure 5: Device check login screen

The Device Check will now run for one to two seconds. Once complete, you will see a screen similar to the one below (Figure 6).

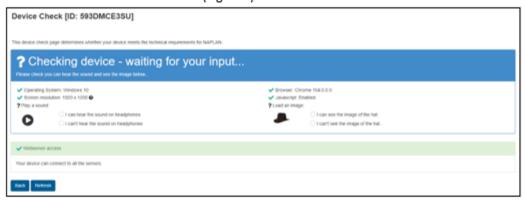


Figure 6: Device check

 As previously stated, there is no audio component to the NAP-CC Assessment. However, to complete the device check please click on I can hear the sound on headphones (Figure 7).



Figure 7: Device check for sound

Indicate whether the device can load an image by selecting the appropriate response (Figure 8).



Figure 8: Device check for images

 The Device Check is now complete. The device and browser you are using have been checked against the technical requirements for NAP assessments. You should see one of the two screens below (Figure 9 and Figure 10).



Figure 9: Device check pass



Figure 10: Device check fail

If your Device Check was successful, please proceed to step 9.

If you receive a fail against an element of the test, please see Section 3 – Getting help to assist you in rectifying the problem. Once the device, network or LDB has been updated, please run the device check again.

 Click the Back button on the device check screen (Figure 11). Your result will be saved. Please note: if you exit the Device Check by using the grey X in the bottom right corner, your Device Check will not register in the Device List for your school.



Figure 11: Finishing the device check

- 10. Exit the app.
- 11. Repeat steps 1-10 for every device that will be used for the NAP-CC Assessment.

Ensure a device for the Test Administrator (TA) is prepared

You will need to ensure a device has been set aside for the Test Administrator to use on assessment day. The device can be one the Test Administrator already uses (i.e., a work issued laptop), or a spare computer in the testing room. This device <u>does not</u> need to have the LDB installed, and the Device Check should be performed outside the LDB.

To run the Device Check on the TA machine, open the home page of the Assessform website assessform.edu.au and click on *Device Check (no results stored)* in the Tools and resources section on the right (Figure 12) and follow the instructions.

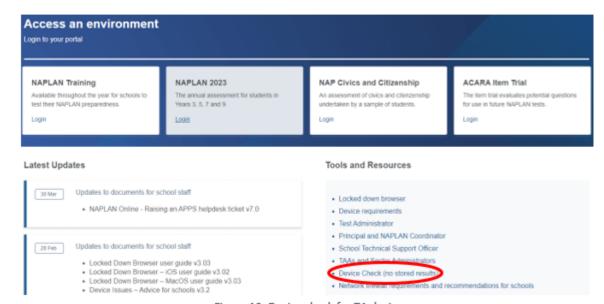


Figure 12: Device check for TA device

Appendix C. Quality Monitor report template

NAP-Civics and Citizenship 2024 Main Study QUALITY MONITOR REPORT

Quality Monitor							
School Name							
State/Territory				Sector			
Year Level				Date			
Number of Students Present							
 Staff Present Who was present for the assessment session? (Please check <u>all</u> that apply and indicate whether they were present for all or part of the test session) 							
tney were present for all or part of	i tile t	est session)	1				
Staff Member	the		or all of sess (X)	sion Pr	esent for part of session (X)		
Staff Member	the		or all of sess	sion Pro			
Staff Member Test Administrator	THE C		or all of sess	sion Pro			
Staff Member Test Administrator Chool Contact	THE C		or all of sess	sion Pro			
Staff Member Test Administrator Chool Contact Chool Technical Support Officer	THE C		or all of sess	sion Pro			
			or all of sess	sion Pro			

2. Timing

Room Set Up and Logging in

	999			
How long did it ta	ke for the computers	to be switched on and I	ogged into?	_ (mins)
	ther school staff mer] No	nber assist the TA in sett □Yes	ing up the computers?	
	tably set up for the a	ssessment and for stude	nts' optimal participation	?
If No, please prov	ide further comment	:.		
Introductory TA s	cript			
_	ke the TA to lead stu ions?	_	assessment instructions, l	before
Please detail any i	ssues that were expe	erienced during the intro	ductory process.	
How long did it ta	ke the students to co	omplete the practice que	stions, on average?	
Please provide fur expected time of		ual time for any student	was s ignificantly different	: to
Assessment Sessi	on			
_		e to complete the assess his test session, was this t	sment (60 mins for Y6, 75 time allowance:	mins for
☐ Too ge	nerous	☐ Just right	□Too short	
How many studer	ts were able to com	plete the assessment in t	he allocated time?	
☐ A minority of s☐ The majority o	ere able to complete tudents were able to f students were able ere able to complete	complete in time to complete in time		

Questionnaire (untimed, but suggested time of 15 mins) How long did it take most of the students to complete the questionnaire? (minum fixed the slowest student to complete the questionnaire? (minum fixed fixed for the comment on questionnaire timing, if needed.
How long did it take the slowest student to complete the questionnaire? (mir
<u> </u>
Please provide further comment on questionnaire timing, if needed.
3. <u>Test Instructions</u>
Was the script followed according to the Test Administrator Handbook?
□ No □Yes
If changes were made, were they
☐ Major ☐ Minor
Why do you think the TA made changes to the script?
Do you think the variation to the script affected the performance of students?
□ No □Yes
If Yes, please provide further comment.

4. Assistance Given Were there any particular test questions that students asked for clarification about? □ No □Yes Please provide a general description of the item and a brief description of the issue/clarification requested: In your opinion, did the Test Administrator follow the instructions in the TA Handbook when assisting students with their questions? □ No □Yes If No, please provide further comment. Was any extra assistance given to any students with special needs? □ No If Yes, please provide further comment. 5. **Technical Matters** What devices did students use to sit the assessment? (Check all that apply) □ Desktop computers □ Laptop computers □ iPads □ Chromebooks If iPads were used, did students use an external keyboard? ☐ Yes, all iPad users had an external keyboard. ☐ No, no iPad users had an external keyboard. They used the onscreen ('pop up') keyboard ☐ Amongst iPad users, there was a mix of external keyboards and onscreen ('pop up') keyboard use. Were any technical issues experienced at this school before or during the assessment session? □ No □Yes

	If Y	es, were they			
		☐ Major ☐ Minor			
	If te	echnical issues were experienced, please describe what	they were.		
	_				
	_				
	D-		-6-414-2		
	DO	you think the technical issues affected the performance ☐ No ☐ Yes	orstudentsr		
		E NO E les			
	If Y	es, please provide further comment.			
	_				
6.		Student Behaviour	No students	Some students	Most students
	a)	How many students appeared to be engaged in the test material?			
	b)	How many students made noise or moved around, causing disruption to other students during the session?			
	c)	How many students attempted to navigate to other websites or access their mobile phones during the session?			
	d)	How many students appeared to struggle with understanding how to navigate the test interface?			
	7.	Outside Interruptions			
	We	re the students distracted or impacted by any outside in	nterruptions?	For example:	
		Announcements over the PA or intercom system	m		
		 Noise from other classes in the school Distractions from other students not participat 	ing in the test	session within	the
		classroom	Ü		
		Students or teachers visiting the testing room			
		□ No □Yes			

If yes, please specify the disruption:	
8. <u>School Receptiveness</u> How receptive was the school towards participating in NAP–Civics and Citizenship? What do a perceive to be the school's overall attitude and level of commitment towards the assessment	you t?
As a visitor, were you made to feel welcome by the school?	
9. Other Comments	
Please provide any other comments that you feel would help us improve this assessment and administration.	l its

Thank you very much for recording these observations!

Please transpose your observations to the online ACER Questionnaire as soon as possible following the assessment session using the below link or QR code.



http://survey.qa/FGcbZD

Appendix D. School summary report instructions





The NAP-Civics and Citizenship 2024 report for your school is provided on the Report tab of this spreadsheet.

Below is a brief description of the contents of each of the fields shown in this report.

Unit Name	The name of the unit the question belongs to. Each unit contains 1 to 4 questions that are developed around a single theme or stimulus. Students' test forms are made up of a selection of these units.
Descriptor	A brief description of what students need to do in order to complete a question. Each row refers to a single question in the assessment.
AC Skills Code	Refers to the Australian Curriculum (v8.4) code that the question aligns with.
AC Knowledge Code	Refers to the Australian Curriculum (v8.4) code that the question aligns with.
AC Sub-Strand	Refers to the Australian Curriculum sub-strand that the question aligns with. Hovering over the data cell will display the full sub-strand name.
General Capability	Refers to one of the Australian Curriculum general capabilities that the question aligns with, where applicable.
Percent Correct	Shows an estimate of the national percentage of students who responded to the question correctly. For questions with a maximum score of more than 1, more than one percentage will be displayed. Each percentage denotes the proportion of students that achieved each score or higher. For example, if a question has a maximum score of 2, the first number is the percentage of students that received a score of 1 or 2, the second number is the percentage of students that received a score of 2.
Max Score	Shows the maximum score possible for each question.

The score for each question is listed under the name of each student. There are four possible score values for each question:

- i. Blank: The question was not in a unit assigned to the student.
- ii. Red (0): The student responded to the question incorrectly.
- iii. Green (1, 2, 3): The student responded to the question correctly (or partially correctly). The number refers to the score the student received for their response to the question. This can be compared to the maximum score for that task.

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Appendix E. Excerpt from a sample school summary report

000100	ISTRALIAN CURRICULIA								Student							
acara A	SSESSMENT AND					A C	E R	01	02	03	04	05	06	07	08	09
CCCCCT CC RE	PORTING AUTHORITY				4		\mathbf{r}	F	М	F	F	М	М	F	F	F
Unit Name	Descriptor	AC Skill Code	AC	AC Sub-	General	Percent	Max Score	133000401	133000402	133000403	133000404	133000405	133000406	133000407	133000408	133000409
			Knowledge	Strand	Capability	Correct										
▼	▼	~	Code ▼			_	~	~	~	~	~	~	~	~	~	_
ANZAC book	Identifies that the Gallipoli campaign took place during the First World War	ACHHS169	ACDSEH095	н	ССТ	69	1		1						0	
ANZAC book	Identifies Australia's opponents during the First World War	ACHHS169	ACDSEH095	Н	ССТ	62	1		1						1	
ANZAC book	Identifies the nature of Australia's relationship with Britain during the First World War	ACHCS084	ACDSEH095	н	ССТ	64,35	2		2						1	
Acknowledgement of Country-2	Identifies the importance and prevalence of Acknowledgement to Country	ACHASSI058	ACHASSK062	CD&I	ΙU	56	1		1	1						1
Age Pension-2	ldentifies a reason why a threshold for government welfare could be difficult to reach	ACHHS172	ACDSEH019	Н	PSC	56	1	1			1					
Age Pension-3	Identifies a reason why eligibility for pensions has changed over time	ACHHS172	ACDSEH019	н	PSC	41	1	1			1					
Ambassador Job	Identifies a representative of Australia abroad	ACHCS070	ACHCK062	L&C	сст	51	1	1			1					
Australian Aid	Gives a reason for Australia's aid focus in the Asia-Pacific region	ACHCS102	ACHCK091	G&D	ΙU	45	1			0				0		
Australian Aid	Gives a reason explaining the contribution of aid to regional security	ACHCS102	ACHCK091	G&D	ΙU	68	1			1				1		
Australian Aid	Gives a reason to support the provision of local rather than international aid	ACHCS101	ACHCK091	G&D	EU	72	1			1				0		
Australian Constitution	Identifies a main purpose of the Australian Constitution	ACHCS084	ACHCK048	G&D	сст	80	1		1							
Australian of the Year Awards-1	Identifies an element of an important Australian award	ACHASSI058	ACHASSK064	CD&I	PSC	59	1						1			
Australian of the Year Awards-2	Considers the positive impact that Australian of the Year Awards may have	ACHASSI101	ACHASSK064	CD&I	PSC	57	1						1			
Australian of the Year Awards-3	Identifies actions of outstanding contribution to society	ACHASSI101	ACHASSK115	CD&I	PSC	59	1						1			
Bike helmets	Identifies how laws can prioritise a social good over individual freedoms	ACHASSI101	ACHASSK147	CD&I	EU	94	1	1						1		1
Bike helmets	Identifies a law that prioritises social good over individual freedoms	ACHASSI101	ACHASSK147	CD&I	ССТ	63	1	1						0		0
Branch of Gov	Identifies the role of different branches of government (separation of powers)	ACHCS097	ACHCK048	G&D	ССТ	36	1	1				1	1			
Branch of Gov	Identifies an example of activities undertaken by different branches of government	ACHCS097	ACHCK048	G&D	сст	50	1	0				1	1			
Budj Bim-1	Identifies the significance of an important First Nations heritage site	ACHASSI079	ACHASSK062	н	ΙU	60	1					1		1	1	
Budj Bim-2	Identifies the significance of an important First Nations heritage site	ACHASSI079	ACHASSK062	н	IU	83	1					1		1	1	
Census of Population and Housing	Identifies the key purpose of collecting census information	ACHCS084	ACHCK103	L&C	сст	32	1				1				0	0

Appendix F. Item difficulties

Table A 1: Year 6 Item difficulties

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00072125	1	Link	No	0.07	0.56	448	0.07	448			49	1.19
x00072128	1	Link	Yes	0.79	1.28	542	0.79	542			35	1.05
x00072143	1	Year 6	Yes	-0.35	0.14	394	-0.35	394			58	0.91
x00072156	1	Link	Yes	-0.47	0.02	378	-0.47	378			60	1.02
x00072174	1	Year 6	Yes	-0.64	-0.15	357	-0.64	357			64	1.01
x00072181	1	Year 6	Yes	0.47	0.96	500	0.47	500			41	1.03
x00072201	1	Year 6	Yes	-2.17	-1.68	157	-2.17	157			87	0.91
x00072202	1	Link	Yes	-0.90	-0.41	323	-0.90	323			68	1.02
x00072203	1	Link	Yes	-0.82	-0.33	333	-0.82	333			67	0.88
x00072204	1	Link	Yes	-0.03	0.46	436	-0.03	436			51	1.11
x00072224	1	Year 6	Yes	-0.22	0.27	411	-0.22	411			56	1.03
x00072233	1	Year 6	Yes	0.95	1.44	563	0.95	563			31	1.00
x00072234	1	Year 6	Yes	-1.79	-1.30	207	-1.79	207			82	0.93
x00072251	1	Link	Yes	-0.25	0.24	406	-0.25	406			56	1.10
x00072252	1	Link	Yes	-1.31	-0.82	269	-1.31	269			75	1.00
x00072253	1	Link	No	-1.07	-0.58	301	-1.07	301			71	1.02
x00072319	1	Year 6	Yes	-0.67	-0.18	353	-0.67	353			65	1.03
x00072351	1	Link	Yes	0.18	0.67	463	0.18	463			46	1.03
x00072360	1	Link	Yes	-0.88	-0.39	325	-0.88	325			68	0.94
x00072364	1	Link	Yes	-1.09	-0.60	298	-1.09	298			72	1.04
x00072366	1	Link	Yes	0.20	0.69	466	0.20	466			47	0.92

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00072391	1	Year 6	Yes	-1.88	-1.39	195	-1.88	195			84	0.87
x00072436	1	Link	Yes	-0.61	-0.12	360	-0.61	360			63	0.83
x00072437	1	Link	Yes	-0.01	0.48	438	-0.01	438			50	0.98
x00072438	1	Link	Yes	-1.01	-0.52	308	-1.01	308			70	0.91
x00072446	1	Year 6	No	-1.37	-0.88	262	-1.37	262			77	1.03
x00072450	1	Link	Yes	-1.28	-0.79	273	-1.28	273			75	0.92
x00139848	1	Year 6	Yes	0.31	0.80	479	0.31	479			43	1.06
x00139882	1	Year 6	Yes	-0.33	0.16	396	-0.33	396			57	0.90
x00139966	1	Year 6	Yes	-1.08	-0.59	299	-1.08	299			72	1.10
x00140001	1	Year 6	Yes	-0.15	0.34	420	-0.15	420			53	0.85
x00140011	1	Year 6	Yes	0.55	1.04	511	0.55	511			39	1.12
x00140040	1	Year 6	Yes	-1.98	-1.49	183	-1.98	183			85	0.86
x00140372	1	Year 6	Yes	-0.82	-0.33	333	-0.82	333			67	0.88
x00140397	1	Link	Yes	0.27	0.76	475	0.27	475			45	1.02
x00140398	1	Link	Yes	0.08	0.57	450	0.08	450			49	1.07
x00140399	2	Year 6	Yes	0.01	0.50	440	0.01	440	1.89	685	32	1.07
x00140494	1	Year 6	Yes	-0.92	-0.43	320	-0.92	320			69	1.00
x00141365	1	Link	Yes	-0.73	-0.24	344	-0.73	344			64	0.99
x00141382	1	Year 6	Yes	0.13	0.61	456	0.13	456			47	0.96
x00141581	1	Year 6	Yes	-0.07	0.42	431	-0.07	431			52	0.96
x00141694	1	Year 6	Yes	-1.27	-0.78	274	-1.27	274			75	0.93
x00141853	1	Link	No	-2.21	-1.72	153	-2.21	153			87	0.96
x00141857	1	Link	Yes	0.42	0.91	494	0.42	494			42	0.97

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00141938	1	Link	No	-0.82	-0.33	333	-0.82	333			66	0.89
x00142035	1	Link	Yes	-0.71	-0.22	347	-0.71	347			64	1.00
x00142036	1	Link	Yes	-0.54	-0.06	369	-0.54	369			61	0.97
x00148362	1	Link	No	0.31	0.80	480	0.31	480			44	0.99
x00222365	1	Year 6	No	-1.28	-0.79	273	-1.28	273			75	0.94
x00222366	1	Link	No	1.25	1.74	601	1.25	601			25	1.14
x00222369	1	Link	No	0.22	0.71	467	0.22	467			45	0.98
x00222390	1	Year 6	No	-2.41	-1.92	126	-2.41	126			89	0.86
x00222392	1	Year 6	No	0.27	0.75	474	0.27	474			44	0.95
x00222394	1	Year 6	No	-0.28	0.21	403	-0.28	403			56	1.01
x00222602	1	Link	No	0.54	1.03	509	0.54	509			38	0.97
x00222631	1	Link	No	1.71	2.20	661	1.71	661			19	0.90
x00222634	1	Year 6	No	0.38	0.87	488	0.38	488			42	1.17
x00223079	1	Year 6	No	-0.25	0.24	407	-0.25	407			55	1.13
x00223083	1	Year 6	No	0.18	0.67	462	0.18	462			47	0.99
x00223298	1	Year 6	No	1.76	2.25	668	1.76	668			18	1.09
x00223312	1	Year 6	No	-1.50	-1.01	245	-1.50	245			79	0.94
x00223314	1	Year 6	No	1.27	1.76	604	1.27	604			26	1.06
x00223321	1	Year 6	No	-1.89	-1.40	194	-1.89	194			84	1.09
x00223323	1	Year 6	No	-0.72	-0.23	346	-0.72	346			65	1.01
x00223330	1	Link	No	-0.08	0.41	429	-0.08	429			52	0.98
x00223331	1	Year 6	No	-0.11	0.38	425	-0.11	425			53	0.85
x00223333	1	Year 6	No	0.54	1.03	509	0.54	509			39	0.90

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00223334	1	Year 6	No	1.07	1.56	578	1.07	578			29	1.12
x00223335	1	Year 6	No	0.14	0.63	458	0.14	458			47	0.93
x00223344	1	Link	No	-0.57	-0.08	365	-0.57	365			62	1.05
x00223349	1	Link	No	0.65	1.14	524	0.65	524			37	0.92
x00223350	1	Link	No	0.46	0.95	500	0.46	500			40	0.89
x00223356	1	Link	No	0.89	1.38	555	0.89	555			33	0.86
x00223359	1	Link	No	0.92	1.41	559	0.92	559			32	1.00
x00223360	1	Link	No	0.83	1.32	547	0.83	547			33	0.95
x00223363	1	Year 6	No	0.35	0.84	485	0.35	485			43	0.97
x00223365	1	Year 6	No	-1.66	-1.17	224	-1.66	224			80	0.88
x00223492	1	Year 6	No	-0.15	0.34	420	-0.15	420			53	1.08
x00223560	1	Year 6	No	0.03	0.52	443	0.03	443			49	0.97
x00223561	1	Link	No	-0.34	0.15	395	-0.34	395			58	0.95
x00224624	1	Year 6	No	2.71	3.20	791	2.71	791			9	0.96
x00224632	1	Link	No	-0.52	-0.03	372	-0.52	372			62	1.14
x00224635	1	Year 6	No	0.97	1.46	565	0.97	565			31	1.15
x00225169	1	Link	No	0.75	1.24	537	0.75	537			35	0.98
x00225171	1	Year 6	No	-1.96	-1.47	185	-1.96	185			85	0.91
x00225172	1	Year 6	No	0.66	1.15	526	0.66	526			37	1.04
x00225178	1	Year 6	No	1.47	1.96	631	1.47	631			22	1.14
x00225214	1	Year 6	No	-0.02	0.47	437	-0.02	437			51	1.07
x00225223	1	Link	No	0.85	1.34	550	0.85	550			32	1.15
x00225225	1	Link	No	1.30	1.79	609	1.30	609			24	0.91

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225228	1	Link	No	1.19	1.68	594	1.19	594			27	0.95
x00225231	1	Link	No	-0.87	-0.38	326	-0.87	326			68	0.96
x00225254	1	Link	No	1.77	2.25	668	1.77	668			18	1.03
x00225264	1	Link	No	2.30	2.79	738	2.30	738			12	0.94
x00225271	1	Link	No	1.74	2.23	666	1.74	666			18	0.98
x00225272	1	Link	No	-0.38	0.11	390	-0.38	390			58	0.92
x00225332	1	Year 6	No	0.00	0.48	439	0.00	439			51	0.98
x00225383	1	Link	No	0.71	1.20	531	0.71	531			36	0.83
x00225397	1	Link	No	0.98	1.47	566	0.98	566			31	1.20
x00225402	1	Year 6	No	0.21	0.70	466	0.21	466			46	1.17
x00225408	1	Link	No	2.33	2.82	742	2.33	742			12	0.91
x00225460	1	Link	No	0.96	1.45	564	0.96	564			30	0.93
x00225523	1	Year 6	No	0.69	1.18	529	0.69	529			36	0.95
x00225525	1	Link	No	-0.10	0.39	427	-0.10	427			53	1.13
x00225529	1	Year 6	No	-1.12	-0.63	294	-1.12	294			73	0.91
x00225531	1	Year 6	No	1.12	1.61	585	1.12	585			28	1.02
x00225532	1	Year 6	No	-1.38	-0.89	260	-1.38	260			76	0.94
x00225538	2	Year 6	No	-1.53	-1.04	241	-1.53	241	-0.93	318	80	1.01
x00225562	1	Year 6	No	-1.08	-0.59	299	-1.08	299			72	1.07
x00225693	1	Year 6	No	-1.26	-0.77	276	-1.26	276			75	0.98
x00225695	1	Link	No	0.96	1.44	563	0.96	563			31	0.88
x00225721	1	Year 6	No	-0.11	0.38	424	-0.11	424			53	0.99
x00225723	1	Year 6	No	0.61	1.10	519	0.61	519			38	1.05

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225724	1	Year 6	No	-0.42	0.07	385	-0.42	385			59	0.92
x00225737	1	Year 6	No	1.61	2.10	649	1.61	649			20	1.04
x00225743	2	Year 6	No	-0.05	0.44	432	-0.05	432	1.57	643	34	0.94
x00225755	1	Year 6	No	0.86	1.35	551	0.86	551			32	1.08
x00225757	1	Year 6	No	0.76	1.25	538	0.76	538			34	1.15
x00225800	1	Year 6	No	-0.28	0.21	403	-0.28	403			57	0.88
x00225801	1	Year 6	No	0.00	0.49	439	0.00	439			50	0.90
x00225803	1	Year 6	No	0.37	0.86	487	0.37	487			43	1.04
x00225807	1	Link	No	0.76	1.25	538	0.76	538			35	0.92
x00225809	1	Link	No	1.91	2.40	687	1.91	687			16	1.00
x00225815	1	Year 6	No	1.92	2.41	689	1.92	689			16	1.07
x00225816	1	Year 6	No	0.09	0.58	451	0.09	451			49	1.10
x00225845	1	Year 6	No	1.45	1.94	627	1.45	627			23	0.96
x00225846	1	Year 6	No	0.91	1.40	557	0.91	557			32	1.07
x00225849	1	Link	No	0.82	1.31	545	0.82	545			33	0.96
x00225852	1	Year 6	No	-0.93	-0.44	319	-0.93	319			69	0.94
x00225855	1	Year 6	No	0.69	1.18	529	0.69	529			36	1.12
x00225856	1	Year 6	No	-1.63	-1.14	228	-1.63	228			80	0.94
x00225879	1	Year 6	No	-0.48	0.01	376	-0.48	376			60	0.98
x00225883	1	Year 6	No	-1.25	-0.77	276	-1.25	276			74	1.01
x00225886	1	Year 6	No	-0.38	0.11	390	-0.38	390			58	0.98
x00225887	1	Year 6	No	-0.83	-0.34	332	-0.83	332			67	0.92
x00225889	1	Year 6	No	0.20	0.68	465	0.20	465			47	1.03

					Difficulty		Thresh	old 1	Thres	hold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225892	1	Year 6	No	0.74	1.23	535	0.74	535			35	0.93
x00225895	1	Link	No	-0.28	0.21	402	-0.28	402			57	1.02
x00225896	1	Link	No	-0.87	-0.38	326	-0.87	326			69	0.88
x00225902	1	Year 6	No	0.89	1.38	555	0.89	555			32	1.10
x00225905	1	Year 6	No	0.22	0.71	467	0.22	467			46	1.09
x00225928	1	Year 6	No	0.93	1.42	560	0.93	560			32	1.17
x00225933	1	Year 6	No	-0.20	0.29	413	-0.20	413			55	1.09
x00225934	1	Year 6	No	0.74	1.23	535	0.74	535			35	1.00
x00225935	1	Year 6	No	-1.85	-1.36	199	-1.85	199			84	0.98
x00225936	1	Year 6	No	0.44	0.92	496	0.44	496			42	1.06
x00225937	1	Year 6	No	-1.12	-0.63	294	-1.12	294			72	0.93
x00225943	1	Year 6	No	0.06	0.55	447	0.06	447			50	1.21
x00225947	1	Year 6	No	0.29	0.78	477	0.29	477			45	1.01
x00225950	1	Link	No	-1.24	-0.76	278	-1.24	278			75	1.02
x00225972	1	Link	No	2.10	2.59	712	2.10	712			14	1.01
x00230536	2	Year 6	No	-0.15	0.34	420	-0.15	420	1.29	606	38	0.94

Table A 2: Year 10 Item difficulties

					Difficulty		Threst	nold 1	Threst	nold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00072107	1	Year 10	Yes	0.53	1.02	548	0.53	548			46	0.93
x00072116	1	Year 10	Yes	-0.60	-0.11	402	-0.60	402			68	0.90
x00072117	1	Year 10	Yes	-0.78	-0.29	379	-0.78	379			71	0.94
x00072118	1	Year 10	Yes	0.30	0.79	519	0.30	519			50	1.18
x00072125	1	Link	Yes	0.21	0.70	507	0.21	507			52	1.02
x00072127	1	Year 10	Yes	-1.34	-0.85	305	-1.34	305			79	0.97
x00072128	1	Link	No	0.15	0.64	499	0.15	499			53	0.99
x00072145	1	Year 10	Yes	-0.07	0.42	471	-0.07	471			56	1.13
x00072156	1	Link	Yes	-0.74	-0.25	384	-0.74	384			70	1.05
x00072176	1	Year 10	Yes	-0.62	-0.13	399	-0.62	399			68	0.97
x00072202	1	Link	Yes	-1.64	-1.15	266	-1.64	266			83	0.95
x00072203	1	Link	Yes	-1.89	-1.40	235	-1.89	235			86	0.80
x00072204	1	Link	Yes	-1.02	-0.53	348	-1.02	348			74	1.04
x00072251	1	Link	Yes	-0.40	0.09	428	-0.40	428			64	1.05
x00072252	1	Link	Yes	-1.67	-1.18	263	-1.67	263			84	1.04
x00072253	1	Link	Yes	-1.15	-0.66	330	-1.15	330			77	1.03
x00072294	1	Year 10	Yes	-0.28	0.21	443	-0.28	443			61	1.03
x00072296	1	Year 10	Yes	0.34	0.83	523	0.34	523			48	1.09
x00072300	1	Year 10	Yes	0.21	0.70	507	0.21	507			51	1.16
x00072301	3	Year 10	Yes	-0.42	0.07	426	-0.42	426	0.72	573	39	1.09
x00072338	1	Year 10	Yes	-0.83	-0.35	371	-0.83	371			71	0.79
x00072339	1	Year 10	No	-1.10	-0.61	336	-1.10	336			76	0.90

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					Difficulty		Threst	nold 1	Thres	nold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00072341	1	Year 10	Yes	-1.11	-0.62	336	-1.11	336			76	0.89
x00072342	1	Year 10	Yes	-0.68	-0.19	391	-0.68	391			69	1.00
x00072351	1	Link	Yes	-0.79	-0.30	377	-0.79	377			70	1.06
x00072360	1	Link	Yes	-1.34	-0.85	306	-1.34	306			79	0.92
x00072364	1	Link	Yes	-1.58	-1.09	275	-1.58	275			83	0.90
x00072366	1	Link	Yes	-0.38	0.11	430	-0.38	430			64	0.96
x00072387	1	Year 10	No	-0.56	-0.07	406	-0.56	406			67	1.00
x00072394	1	Year 10	Yes	-0.03	0.46	475	-0.03	475			56	1.06
x00072426	1	Year 10	Yes	-1.13	-0.64	333	-1.13	333			76	0.87
x00072427	1	Year 10	No	-0.78	-0.29	378	-0.78	378			70	0.82
x00072436	1	Link	Yes	-1.31	-0.82	310	-1.31	310			79	0.84
x00072437	1	Link	Yes	-1.10	-0.61	337	-1.10	337			76	0.95
x00072438	1	Link	Yes	-1.76	-1.27	252	-1.76	252			85	0.84
x00072450	1	Link	Yes	-1.54	-1.05	279	-1.54	279			81	0.87
x00139945	1	Year 10	Yes	-0.71	-0.22	387	-0.71	387			70	1.14
x00139946	1	Year 10	Yes	-0.27	0.22	445	-0.27	445			61	0.99
x00139947	2	Year 10	Yes	-0.20	0.29	454	-0.20	454	0.85	591	49	1.09
x00140397	1	Link	Yes	-1.17	-0.68	327	-1.17	327			76	0.94
x00140398	1	Link	Yes	-1.00	-0.52	349	-1.00	349			74	1.01
x00141365	1	Link	Yes	-1.07	-0.58	340	-1.07	340			74	0.89
x00141584	1	Year 10	Yes	0.96	1.45	605	0.96	605			36	1.09
x00141590	1	Year 10	Yes	0.23	0.72	510	0.23	510			50	1.08
x00141853	1	Link	No	-2.97	-2.48	94	-2.97	94			94	0.94

				Difficulty			Threshold 1		Threshold 2			
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00141857	1	Link	Yes	-0.38	0.11	431	-0.38	431			63	0.96
x00141913	1	Year 10	Yes	0.38	0.86	528	0.38	528			47	0.95
x00141914	1	Year 10	Yes	1.40	1.89	662	1.40	662			27	0.89
x00141938	1	Link	Yes	-1.74	-1.25	254	-1.74	254			84	0.83
x00142035	1	Link	Yes	-0.65	-0.16	396	-0.65	396			67	1.03
x00142036	1	Link	No	-0.99	-0.50	351	-0.99	351			73	1.01
x00148362	1	Link	No	0.02	0.51	482	0.02	482			56	1.05
x00222366	1	Link	No	0.92	1.41	600	0.92	600			36	1.07
x00222369	1	Link	No	-0.26	0.23	446	-0.26	446			60	0.99
x00222387	1	Year 10	No	0.66	1.14	565	0.66	565			43	1.03
x00222545	1	Link	No	-0.27	0.22	444	-0.27	444			61	1.16
x00222560	1	Year 10	No	0.29	0.78	517	0.29	517			49	0.89
x00222602	1	Link	No	0.14	0.63	498	0.14	498			51	0.96
x00222631	1	Link	No	0.15	0.64	499	0.15	499			52	0.84
x00222901	1	Year 10	No	0.74	1.23	575	0.74	575			40	1.04
x00223080	1	Year 10	No	1.18	1.67	632	1.18	632			31	0.98
x00223082	1	Year 10	No	-0.53	-0.04	411	-0.53	411			65	0.89
x00223311	1	Year 10	No	-0.07	0.42	471	-0.07	471			57	0.94
x00223322	1	Year 10	No	0.56	1.05	552	0.56	552			43	1.05
x00223325	1	Year 10	No	1.67	2.16	696	1.67	696			23	1.07
x00223329*	1	Year 10	No	1.86	2.35	721	1.86	721			20	1.08
x00223330	1	Link	No	-0.40	0.09	428	-0.40	428			63	1.01

^{*}An inaccurate response option was identified in this item. Initial analysis revealed that the item still discriminated well between high- and low- achieving students. Additional analysis was then conducted, recalculating Year 10 results with the item omitted. The findings confirm that the average scale score remains unchanged at 31 points lower than the previous cycle. Additionally, the removal of this item did not impact the distribution of student scores. The published Year 10 results (average scale score, proficiency level percentages) remain unchanged.

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				Difficulty		Threshold 1		Threshold 2				
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00223336	1	Year 10	No	0.68	1.17	568	0.68	568			41	1.00
x00223338	1	Year 10	No	0.86	1.35	591	0.86	591			38	1.08
x00223340	1	Year 10	No	1.62	2.11	690	1.62	690			24	0.96
x00223344	1	Link	No	-0.08	0.41	469	-0.08	469			58	1.16
x00223349	1	Link	No	-0.02	0.47	477	-0.02	477			56	0.92
x00223350	1	Link	No	-0.09	0.39	467	-0.09	467			58	0.96
x00223356	1	Link	No	-0.58	-0.09	404	-0.58	404			67	0.84
x00223359	1	Link	No	-0.01	0.48	478	-0.01	478			56	1.05
x00223360	1	Link	No	0.40	0.89	531	0.40	531			48	0.96
x00223382	1	Year 10	No	0.02	0.51	483	0.02	483			55	1.09
x00223553	1	Year 10	No	1.10	1.59	623	1.10	623			33	1.12
x00223556	1	Year 10	No	0.83	1.32	587	0.83	587			37	1.06
x00223558	1	Year 10	No	0.30	0.79	518	0.30	518			49	1.12
x00223561	1	Link	No	-1.36	-0.87	304	-1.36	304			80	0.88
x00223563	1	Year 10	No	-0.70	-0.21	389	-0.70	389			69	1.01
x00223565	1	Year 10	No	0.54	1.03	550	0.54	550			44	0.95
x00223634	1	Year 10	No	-0.07	0.42	471	-0.07	471			57	1.14
x00224393	1	Year 10	No	1.18	1.67	633	1.18	633			32	1.12
x00224396	1	Year 10	No	-0.56	-0.07	406	-0.56	406			66	1.00
x00224397	1	Year 10	No	0.67	1.16	567	0.67	567			42	1.16
x00224632	1	Link	No	-0.84	-0.35	370	-0.84	370			72	1.07
x00224639	1	Year 10	No	-1.23	-0.74	321	-1.23	321			77	0.91
x00224642	1	Year 10	No	-0.66	-0.17	393	-0.66	393			68	0.91

					Difficulty		Threst	nold 1	Thres	nold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00224645	1	Year 10	No	1.93	2.42	730	1.93	730			19	0.88
x00224646	1	Year 10	No	1.21	1.70	637	1.21	637			32	1.06
x00224648	1	Year 10	No	0.01	0.50	481	0.01	481			55	1.06
x00224649	1	Year 10	No	0.83	1.32	588	0.83	588			39	1.11
x00224880	1	Year 10	No	-0.38	0.10	430	-0.38	430			63	0.87
x00224882	1	Year 10	No	0.15	0.64	500	0.15	500			52	0.82
x00224886	1	Year 10	No	-0.19	0.30	455	-0.19	455			60	1.12
x00224889	2	Year 10	No	0.43	0.92	536	0.43	536	1.59	686	34	1.02
x00225128	2	Year 10	No	-0.55	-0.06	409	-0.55	409	1.05	617	49	0.83
x00225169	1	Link	No	-0.60	-0.11	401	-0.60	401			68	0.91
x00225182	1	Year 10	No	0.75	1.24	577	0.75	577			40	1.05
x00225184	1	Year 10	No	0.68	1.17	568	0.68	568			41	0.91
x00225185	1	Year 10	No	2.05	2.54	746	2.05	746			17	1.09
x00225208	1	Year 10	No	0.16	0.65	500	0.16	500			53	1.03
x00225210	1	Year 10	No	0.22	0.71	508	0.22	508			51	0.85
x00225213	1	Year 10	No	0.95	1.44	603	0.95	603			36	1.21
x00225216	1	Year 10	No	0.08	0.57	490	0.08	490			53	0.89
x00225223	1	Link	No	0.83	1.32	588	0.83	588			37	1.14
x00225225	1	Link	No	0.34	0.83	524	0.34	524			47	0.87
x00225227	1	Year 10	No	0.19	0.68	505	0.19	505			50	0.99
x00225228	1	Link	No	0.22	0.71	508	0.22	508			51	0.99
x00225231	1	Link	No	-1.42	-0.93	295	-1.42	295			80	0.94
x00225249	1	Year 10	No	1.61	2.10	689	1.61	689			24	0.98

				Difficulty		Threshold 1		Threshold 2				
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225254	1	Link	No	0.66	1.15	565	0.66	565			41	1.02
x00225256	1	Year 10	No	1.88	2.37	724	1.88	724			19	1.11
x00225258	1	Year 10	No	1.64	2.13	693	1.64	693			24	1.13
x00225261	1	Year 10	No	0.50	0.99	544	0.50	544			46	0.97
x00225264	1	Link	No	-0.07	0.42	470	-0.07	470			57	0.82
x00225271	1	Link	No	1.44	1.93	666	1.44	666			27	0.97
x00225272	1	Link	No	-1.38	-0.89	300	-1.38	300			80	0.90
x00225275	1	Year 10	No	-1.13	-0.64	333	-1.13	333			76	0.93
x00225329	1	Year 10	No	-1.19	-0.70	325	-1.19	325			78	1.00
x00225383	1	Link	No	-0.67	-0.18	393	-0.67	393			69	0.84
x00225397	1	Link	No	0.61	1.10	558	0.61	558			43	1.25
x00225408	1	Link	No	1.04	1.53	615	1.04	615			34	0.89
x00225460	1	Link	No	0.27	0.76	514	0.27	514			49	0.91
x00225471	1	Year 10	No	3.15	3.64	889	3.15	889			7	1.01
x00225473	1	Year 10	No	-0.07	0.42	471	-0.07	471			56	0.87
x00225474	1	Year 10	No	0.66	1.15	566	0.66	566			41	0.90
x00225524	1	Year 10	No	0.23	0.72	509	0.23	509			51	1.03
x00225525	1	Link	No	-0.40	0.09	428	-0.40	428			63	1.16
x00225527	1	Year 10	No	0.83	1.32	587	0.83	587			39	1.02
x00225695	1	Link	No	0.15	0.63	499	0.15	499			53	0.94
x00225700	1	Year 10	No	-0.25	0.24	447	-0.25	447			60	0.97
x00225715	1	Year 10	No	0.47	0.96	541	0.47	541			45	1.23
x00225720	1	Year 10	No	0.59	1.08	556	0.59	556			43	1.11

					Difficulty		Threst	nold 1	Thres	nold 2		
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225730	1	Year 10	No	-0.71	-0.22	387	-0.71	387			68	0.99
x00225751	1	Year 10	No	-0.23	0.26	450	-0.23	450			60	1.06
x00225752	1	Year 10	No	-0.63	-0.14	399	-0.63	399			68	1.12
x00225758	1	Year 10	No	0.72	1.21	574	0.72	574			40	0.88
x00225794	1	Year 10	No	0.41	0.90	532	0.41	532			48	1.04
x00225795	1	Year 10	No	0.71	1.20	572	0.71	572			41	1.14
x00225796	1	Year 10	No	-0.47	0.02	419	-0.47	419			65	0.84
x00225804	1	Year 10	No	0.02	0.50	482	0.02	482			56	0.90
x00225805	1	Year 10	No	0.58	1.07	555	0.58	555			44	1.11
x00225806	1	Year 10	No	0.93	1.42	601	0.93	601			37	1.14
x00225807	1	Link	No	0.06	0.55	488	0.06	488			55	0.93
x00225808	1	Year 10	No	0.32	0.81	521	0.32	521			48	1.03
x00225809	1	Link	No	0.78	1.27	581	0.78	581			40	1.00
x00225849	1	Link	No	-0.08	0.41	469	-0.08	469			56	0.94
x00225895	1	Link	No	-0.18	0.31	456	-0.18	456			60	1.00
x00225896	1	Link	No	-1.57	-1.08	276	-1.57	276			83	0.90
x00225899	1	Year 10	No	-0.41	0.08	426	-0.41	426			64	1.13
x00225950	1	Link	No	-1.45	-0.96	292	-1.45	292			80	0.95
x00225955	1	Year 10	No	0.09	0.58	491	0.09	491			55	1.01
x00225959	1	Year 10	No	1.02	1.51	613	1.02	613			34	1.16
x00225960	1	Year 10	No	-0.15	0.34	461	-0.15	461			58	1.18
x00225964	1	Year 10	No	-1.62	-1.13	269	-1.62	269			83	0.87
x00225965	1	Year 10	No	0.10	0.59	493	0.10	493			54	1.15

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				Difficulty		Threshold 1		Threshold 2				
Item Code	Scores	Vertical link	Horizontal link	RP=0.5	RP=0.62	CC Scale	RP=0.5	CC Scale	RP=0.5	CC Scale	Correct	Weighted fit (MNSQ)
x00225972	1	Link	No	1.58	2.07	684	1.58	684			25	1.01
x00225976	1	Year 10	No	1.20	1.69	636	1.20	636			30	1.16
x0023138701	1	Year 10	No	2.26	2.75	773	2.26	773			15	0.89
x0023138702	1	Year 10	No	1.72	2.21	703	1.72	703			22	0.91

Appendix G. Variables for conditioning

Table A 3: NAP-CC variables for conditioning

Variable	Values	Coding	Regressor
Adjusted school mean achievement	Adjusted school mean	Logits	Direct
State and Sector	ACT Catholic	1000000000000000000000	Direct
	NSW Catholic	0100000000000000000000	
	NT Catholic	0010000000000000000000	
	QLD Catholic	0001000000000000000000	
	SA Catholic	0000100000000000000000	
	TAS Catholic	0000010000000000000000	
	VIC Catholic	000001000000000000000	
	WA Catholic	000000100000000000000	
	ACT Government	000000010000000000000	
	NSW Government (Reference category)	0000000000000000000000	
	NT Government	000000001000000000000	
	QLD Government	0000000001000000000000	
	SA Government	00000000010000000000	
	TAS Government	00000000001000000000	
	VIC Government	0000000000001000000000	
	WA Government	0000000000000100000000	
	ACT Independent	0000000000000010000000	
	NSW Independent	0000000000000001000000	
	NT Independent	0000000000000000100000	
	QLD Independent	0000000000000000010000	
	SA Independent	0000000000000000001000	
	TAS Independent	000000000000000000000000000000000000000	
	VIC Independent	000000000000000000000000000000000000000	

Variable	Values	Coding	Regressor
	WA Independent	000000000000000000000000000000000000000	
School geolocation	Major Cities of Australia (Reference category)	0000	Direct
	Inner Regional Australia	1000	
	Outer Regional Australia	0100	
	Remote Australia	0010	
	Very Remote Australia	0001	
Gender	Male	One dummy with the year level mode as the reference category	Direct
	Female		
Language background other than	No (Reference category)	00	Direct
English	Yes	10	
	Missing	01	
Indigenous Status	No (Reference category)	00	Direct
	Yes	10	
	Missing	01	
Highest parental education	Year 9 or equivalent or below	1000000	Direct
	Year 10 or equivalent	0100000	
	Year 11 or equivalent	0010000	
	Year 12 or equivalent	0001000	
	Certificate I to IV (inc trade cert)	0000100	
	Advanced diploma/diploma	0000010	
	Bachelor degree or above (Reference category)	0000000	
	Not stated or unknown or does not have Parent 1/2	0000001	
Highest parental Occupation Group	Senior managers and professionals (Reference category)	00000	Direct

Variable	Values	Coding	Regressor
	Other managers and associate professionals	10000	
	Tradespeople and skilled office, sales and service	01000	
	Machine operators, labourers, hospitality and related staff	00100	
	Not in paid work in last 12 months	00010	
	Not stated or unknown or does not have Parent 1/2	00001	
Age	Value	Copy, 0	PCA
	Missing	Mean, 1	
Civic participation at school - vote	Yes	Three dummies for each variable with the	PCA
Civic participation at school - elected	No	year level mode as the reference category	
Civic participation at school - decisions	This is not available at my school		
Civic participation at school - webpage/magazine	Missing		
Civic participation at school - buddy			
Civic participation at school - community			
Civic participation at school - co-curricular			
Civic participation at school - candidate			
Civic participation at school - excursion			
Civic participation in community - collecting money	Yes, I have done this within the past 12 months	Three dummies for each variable with the year level mode as the reference category.	PCA
Civic participation in community - help community	Yes, I have done this but not within the past 12 months No, I have never done this Missing	Year 10 only.	
Civic participation in community - environmental			

Variable	Values	Coding	Regressor
Civic participation in community - human rights			
Civic participation in community - youth organisation			
Civic participation in community - animal rights			
Civic participation in community - protest or demonstration			
Civic communication - internet	At least once a day	Recode to 4,3,2,1,0; missing replaced by	PCA
Civic communication - television	At least three time a week At least once a week	the year level mode; dummies for missing	
Civic communication - radio or podcasts	At least once a month Never or hardly ever		
Civic communication - paper or online newspaper	Missing		
Civic communication - post your own content on the internet			
Civic communication - share a comment or image on the internet			
Civic communication - family			
Civic communication - friends			
Expected participation - sign petition	I would certainly do this	Recode to 3,2,1,0; missing replaced by the	PCA
Expected participation - write to	I would probably do this I would probably not do this	year level mode; dummies for missing.	
newspaper Expected participation - write opinion on internet	I would certainly not do this Missing		
Expected participation - produce visual or audio content on internet			
Expected participation - encourage others to participate activities			

Variable	Values	Coding	Regressor
Expected participation - wear an opinion			
Expected participation - contact an MP			
Expected participation - rally or demonstration			
Expected participation - collect signature			
Expected participation - choose not to buy			
Expected participation - participate in strike at school			
Expected active engagement - research candidates	I will certainly do this I will probably do this	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing	PCA
Expected active engagement - help on campaign	I will probably not do this I will certainly not do this	Year 10 only	
Expected active engagement - join party	Missing		
Expected active engagement - join union			
Expected active engagement - be a candidate			
Expected active engagement - join an environmental organisation			
Expected active engagement - volunteer			
Expected active engagement - join a human rights organisation			
Expected active engagement - join an animal rights organisation			
Interest in civic issues - local community	Very interested Quite interested	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing.	PCA

Variable	Values	Coding	Regressor
Interest in civic issues - politics Interest in civic issues - social issues Interest in civic issues - environmental Interest in civic issues - other countries Interest in civic issues - global issues	Not very interested Not interested at all Missing		
Confidence to engage - discuss a conflict Confidence to engage - argue an opinion Confidence to engage - be a candidate Confidence to engage - organise a group Confidence to engage - newspaper or publication Confidence to engage - give a speech Confidence to engage - present information on social media Confidence to engage - express opinion on social media Confidence to engage - identify the reliability of information on websites	Very well Not very well Not at all Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing	PCA
Belief in value of action - act together Belief in value of action - elected reps Belief in value of action - student participation Belief in value of action - organising groups	Strongly agree Agree Disagree Strongly disagree Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing.	PCA

Variable	Values	Coding	Regressor
Belief in value of action - vote school election			
Belief in value of action - citizens			
Belief in civic responsibility - support a party Belief in civic responsibility - learn history Belief in civic responsibility - learn politics	Very important Quite important Not very important Not important at all Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing	PCA
Belief in civic responsibility - learn about other countries			
Belief in civic responsibility - discuss politics			
Belief in civic responsibility - take part in protests			
Belief in civic responsibility - local community			
Belief in civic responsibility - human rights			
Belief in civic responsibility - environmental			
Belief in civic responsibility - protect natural resources			
Belief in civic responsibility - vote in elections			
Belief in civic responsibility - obey the law			
Belief in civic responsibility - show responsible behaviour			
Belief in civic responsibility - follow government directives			

Variable	Values	Coding	Regressor
Trust in institutions - Australian parliament Trust in institutions - state parliament Trust in institutions - local government Trust in institutions - law courts Trust in institutions - police Trust in institutions - political parties Trust in institutions - media Trust in institutions - social media Trust in institutions - research organisations	Completely Quite a lot A little Not at all Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing.	PCA
Attitudes towards Indigenous - support traditions Attitudes towards Indigenous - work with Indigenous people Attitudes towards Indigenous - traditional ownership Attitudes towards Indigenous - learn from traditions Attitudes towards Indigenous - learn about reconciliation Attitudes towards Indigenous - active role in decision-making	Strongly Agree Agree Disagree Strongly disagree Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing	PCA
Attitudes towards Diversity - keep traditions Attitudes towards Diversity - remain peaceful Attitudes towards Diversity - benefit greatly	Strongly Agree Agree Disagree Strongly disagree Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing. Year 10 only.	PCA

Variable	Values	Coding	Regressor
Attitudes towards Diversity - all should learn Attitudes towards Diversity - respect differences Attitudes towards Diversity - unity easy Attitudes towards Diversity - better place with different background			
Problems affecting Australia - pollution Problems affecting Australia - unemployment Problems affecting Australia - terrorism Problems affecting Australia - poverty Problems affecting Australia - climate change Problems affecting Australia - water shortages Problems affecting Australia - lack of access education Problems affecting Australia - crime Problems affecting Australia - lack of access health Problems affecting Australia - racism and discrimination Problems affecting Australia - lack of cyber security and privacy Problems affecting Australia - economic problems	To a large extent To a small extent Not at all Missing	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing	PCA

Variable	Values	Coding	Regressor
Problems affecting Australia - health problems			
Exposure at school - Australian political system	To a large extent To a moderate extent	Recode to 3,2,1,0; missing replaced by the year level mode; dummies for missing.	PCA
Exposure at school - international relations	To a small extent Not at all		
Exposure at school - protect the environment	Missing		
Exposure at school - how the economy works			
Exposure at school - human rights			
Exposure at school - understand different cultures			
Exposure at school - relationship with Asia			
Exposure at school - Australian laws			
Exposure at school - Indigenous histories and cultures			
Exposure at school - evaluate the reliability of information			

Appendix H. Proficiency level descriptions

Table A 4: NAP-CC proficiency level descriptions

Achievement level	Proficiency level description	Examples of student achievement at this level
Level 5 ≥ 795	Students working at level 5 demonstrate precise knowledge and understanding of the workings of Australian democracy and the contexts in which it has developed. In general, they evaluate civic actions and recognise the potential for ambiguity in contested civics and citizenship concepts.	 Students working at level 5 can, for example: analyse the potential for tension between critical citizenship values and abiding by the law identify 2 ways that state and territory governments can raise money, above and beyond the obvious ways.
Level 4 665-794	Students working at level 4 recognise the interaction between governmental policies and processes, and actions of civil and civic institutions and the broader community. They explain the benefits, motivations and outcomes of institutional policies and parliamentary processes. They demonstrate familiarity with the precise discipline-specific vocabulary associated with civics and citizenship and history content and concepts, both through interpreting text and in written responses. They show an understanding of the conflicts surrounding certain historical events.	 identify what is needed to achieve success in a referendum understand what an invalid vote is understand the principles that are at the heart of our democratic system and can identify their historical origins recognise points of conflict in our colonial past understand sensitivities for First Nations Australian Peoples around certain dates explain how citizens can become aware of other cultures and encourage social harmony.
Level 3 535-664	Students working at level 3 demonstrate knowledge of specific details of Australian democracy such as referendums and election processes. They demonstrate an understanding of the importance of First Nations Australian cultures. They make connections between the processes and outcomes of civil and civic institutions. They demonstrate awareness of the common good as a potential motivation for civic action.	 Students working at level 3 can, for example: understand why a referendum is held recognise some key functions and features of the political system understand the importance of certain First Nations ceremonies for the whole community understand the reason for compulsory voting, voting processes and the nature of informal voting identify key features of the justice system identify certain types of laws understand the nature of representative democracy understand the role of the media in a democracy

Achievement Proficiency level description Examples of student achievement at this level level Students working at level 3 identify a key factor affecting Federation identify specific historical facts related to demonstrate awareness that European migration and settlement civic processes can be identify the structure of aspects of the explained and justified in relation to their broader Westminster system understand the principles underlying the contexts, including the historical existence of Australia's pension system context. understand why specific wartime policies were introduced • identify specific important historical events of the 19th century • identify aspects of First Nations Australian history prior to European settlement • recognise features of human rights · understand the effectiveness of certain protest strategies understand motivations underlying historical identify that different religious groups coexist in society identify a specific responsibility of Australian citizenship. Level 2 Students working at level 2 Students working at level 2 can, for example: demonstrate knowledge of core 405-534 identify reasons for community activities aspects of the Australian identify the location of a significant historical democracy. They demonstrate awareness of the connection • understand the significance of Country to First between fundamental principles Nations Australian Peoples (such as fairness) and their • understand how volunteering benefits the manifestation in rules and laws. community They demonstrate awareness understand the impact of government that citizenship rights and programs for the disadvantaged responsibilities are collective as understand the contribution that can be made well as individual. They make by refugees simple evaluations of given recognise the responsibilities involved in mechanisms of civic action. administering elections describe a benefit of a community initiative understand the democratic process in relation to the establishment of rules understand the significance of place names for First Nations Australian Peoples identify significant historical figures of the 19th century understand the concept of compulsory voting • identify how well-established First Nations Australian cultures are • recognise the different levels of government

understand why some laws restrict behaviour

understand the need to educate about climate

for the greater good of the community identify the benefit of seeking community

feedback

change

Achievement level	Proficiency level description	Examples of student achievement at this level
		 recognise the historical contribution of First Nations Australian individuals understand how a First Nations Australian practice promotes democratic principles recognise Australian symbols and symbolic occasions identify the main role of the Prime Minister.
Level 1 275-404	Students working at level 1 demonstrate knowledge of broad features of the Australian democracy. They recognise the cultural significance of the land to First Nations Australians and that cultural attitudes and values can change over time. They demonstrate familiarity with simple mechanisms of community engagement and how civic actions inform and influence change.	 recognise a key element of democracy understand an example of freedom of expression recognise that democratic governments are elected by the people recognise the need for equity in the workforce, in education and the community in general recognise violations of the principle of equity identify an unlawful form of protest identify the benefits of a public meeting identify the benefits of a specific employment program for First Nations Australian Peoples recognise the collective wisdom of First Nations Australian Peoples identify the significance of a First Nations Australian heritage site recognise the importance of maintaining and safeguarding Australia's democratic principles identify the requirements expected for new Australian citizens identify an element of an important Australian award understand eligibility to vote in elections identify the key motivation for Chinese migration to Australia in the 19th century identify that Australia was used by Britain as a convict colony identify a difference between a rule and a law identify a way school life has changed in Australia over time identify the main purpose of the constitution understand the use and purpose of a petition understand when the battle at Gallipoli took place identify a source of state government revenue.

Achievement level	Proficiency level description	Examples of student achievement at this level
Below Level 1 <275	Students working at below level 1 demonstrate knowledge of the notion of fairness and recognise some basic human rights. They demonstrate familiarity with basic aspects of democratic processes and legal systems, and some familiarity with generalised characteristics of Australian identity.	 identify a basic human right identify a basic right related to work recognise that taxes are collected by government recognise the role of a volunteer recognise the importance of special commemorative days recognise the importance of rural communities recognise the importance of the role of a law enforcement officer recognise the image of the reigning monarch identify the focus of ANZAC Day identify a democratic decision-making process in a familiar setting identify an action that can be taken on an important global issue understand the importance of the UN's world heritage sites.