

NAP – CC Technical Note







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Introduction

This appendix should be treated as an addendum to the NAP – CC 2013 Technical Report, where all relevant procedures and differences between cycles are described in full. Procedures not specifically described in this appendix are assumed to be unchanged from 2013. The reader is therefore directed to read this appendix in conjunction with the NAP – CC 2013 Technical Report.

Assessment Framework

The NAP – CC Assessment Framework was developed in preparation for NAP – CC 2010 and has remained the same for the 2013 and 2016 cycles of NAP – CC. Chapters 1 and 2 of the NAP – CC 2013 Technical Report include discussion of the content of the assessment framework. The framework can be accessed at:

www.nap.edu.au/_resources/NAP_CC_assessment_framework.pdf

Item development

- Items transferred to online delivery system
- 106 items were available for use in NAP CC 2016
- All items and stimulus materials were reviewed by the test development team and ACARA experts. As a result of this review:
 - i. Two items were deemed to be no longer suitable for inclusion in the item set. These two items were replaced by adapted versions of previously developed items that had been included in the 2013 field trial but not in the 2013 main study.
 - ii. Three pieces of stimulus material were updated for use in 2016 and eight items were revised to maintain consistency with the updated stimulus materials.

Test design

The Year 6 items were allocated across 14 clusters: clusters 1 to 8 comprising six items each and clusters 9 to 14 comprising three items each. The Year 10 items were allocated across 12 clusters each comprising six items. Eight test forms were created for use at Year 6, and 10 test forms were created for use at Year 10. The Year 6 test forms contained 5 six-item clusters and 3 three-item clusters (total 39 items) while the Year 10 test forms contained 7 six-item clusters (total 42 items). Table 1 and Table 2 show the booklet design for the Year 6 and Year 10 assessments, respectively.

	Cluster position									
Booklet	1	2	3	4	5	6	7	8		
1	12	1	7	10	3	4	5	11		
2	9	2	3	11	4	5	6	12		
3	11	3	4	9	5	6	2	13		
4	9	4	5	13	6	2	8	14		
5	13	5	6	14	7	8	1	9		
6	14	6	7	11	8	1	2	10		
7	12	7	8	10	1	2	3	13		
8	10	8	1	12	7	3	4	14		

Table 1: Year 6 Booklet Design

Clusters in *italics* contain 3 items

Table 2: Year 10 Booklet Design

	Cluster position									
Booklet	1	2	3	4	5	6	7			
1	1	12	10	5	9	7	3			
2	2	4	3	10	1	11	8			
3	3	11	5	6	2	12	1			
4	5	3	12	8	2	9	6			
5	6	11	12	1	7	5	4			
6	7	8	6	3	12	1	4			
7	8	10	3	9	11	2	7			
8	9	7	4	10	2	8	5			
9	6	2	7	4	8	11	9			
10	1	5	11	4	9	10	6			

Scoring student responses

Details of how students' test responses were scored can be found in chapter 2 of the 2013 Technical Report. Guides for scoring constructed response items were unchanged from the 2013 NAP – CC assessment. Examples of constructed response scoring guides are available in the NAP Sample School Release Materials at:

www.nap.edu.au/nap-sample-assessments/school-support

Student questionnaire

The NAP – CC student questionnaire addresses students' attitudes towards civic and citizenship issues and students' engagement in civic and citizenship activities.

The student questionnaire used in NAP – CC 2013 was revised by the project team for use in 2016. A set of recommended amendments were presented to ACARA for consideration. A draft revised questionnaire was then created and presented to the NAP – CC Working Group for review.

The final version of the questionnaire was developed following the Working Group review in consultation with ACARA. In addition to some minor revisions to individual items, the questionnaire was revised to include additional information about digital citizenship participation and a new set of items relating to students' perceptions of the degree to which a given set of problems affect Australia.

The Year 10 questionnaire contained 93 items and the Year 6 questionnaire contained 75 items. All the items in the Year 6 questionnaire were also included in the Year 10 questionnaire.

Students' attitudes towards civic and citizenship issues were assessed with questions covering six constructs:

- Importance of conventional citizenship behaviour
- Importance of social movement related citizenship behaviour
- Trust in civic institutions and processes
- Attitudes towards Indigenous culture
- Attitudes towards Australian diversity
- Perceptions of the severity of problems affecting Australia.

Students' engagement in civic and citizenship activities was assessed with questions concerning the following areas:

- Participation in civic and citizenship related activities at school
- Participation in civic and citizenship related activities in the community
- Media use and participation in discussion of political or social issues
- Interest in political or social issues
- Confidence to actively engage in civic action
- Valuing civic action
- Intentions to promote important issues in the future
- Expectations of future civic engagement.

Student background information

Information about individual and family background characteristics was collected centrally through schools and jurisdictional education systems (see section Data collection procedures and data management for more information on the method of collection). The background variables were gender, age, Indigenous status, cultural background (country of birth and main language other than English spoken at home), socio-economic background (parental education and parental occupation) and geographic location. The structure of these variables had been agreed upon by ACARA as part of NAP and follows the guidelines given in the 2012 Data Standards Manual – Student Background Characteristics (ACARA 2012).

Sampling and weighting

The same sampling and weighting procedures applied in NAP – CC 2013 were also used in NAP – CC 2016. Details of the sampling and weighting procedures can be found in Chapter 3 of the NAP – CC 2013 Technical Report. Table 3 shows the population of schools and students, and the designed sample, for each state and territory.

		Yea	ar 6		Year 10			
	Рори	lation	Planned	Sample	Рори	lation	Planned Sample	
State	Schools	Students	Schools	Students	Schools	Students	Schools	Students
NSW	2,077	86,176	47	904	797	86,721	45	900
VIC	1,657	66,465	46	908	560	66,886	45	900
QLD	1,147	56,188	47	939	459	59,205	45	900
SA	535	18,254	47	890	194	19,919	45	900
WA	725	28,779	46	897	244	29,285	45	900
TAS	203	6,151	48	895	81	6,483	41	814
NT	118	3,320	30	526	53	2,610	27	512
ACT	95	4,598	31	589	40	4,949	30	600
Australia	6,557	269,931	342	6,548	2,428	276,059	323	6,426

Table 3: Year 6 and Year 10 target population and designed samples by state and territory

Students that were eligible to be excluded from the assessment were generally removed before student sampling was undertaken; however, a small number of these students were sampled due to the school not informing ACER of their exemption status. Table 4 and Table 5 detail the numbers and percentages of students excluded from the NAP – CC 2016 assessment after student sampling had occurred, according to the reason given for their exclusion (1=functional disability, 2=intellectual disability, 3=limited assessment language proficiency). Please refer to chapter 3 of the NAP – CC 2013 Technical Report for a full description of the exclusion categories.

	Enrolment in Participating Schools	Pro	e-sam	ple Exc	clusions	Weighted		
State		1	2	3	Reason Unknown	Post- sample Exclusions	Total Exclusions	Exclusion Rate (%)
NSW	2,887	5	7	7	16	0	35	1.2
VIC	2,691	2	7	12	8	10	39	1.5
QLD	3,573	11	9	6	25	24	75	2.1
SA	2,311	3	14	2	15	19	53	2.3
WA	2,604	1	6	1	4	17	29	1.1
TAS	1,946	4	4	1	8	11	28	1.5
NT	1,259	2	4	6	1	46	59	4.7
ACT	1,835	5	6	2	13	0	26	1.4
Australia	19,106	33	57	37	90	128	345	1.8

Table 4: Year 6 breakdown of student exclusions according to reason by state and territory

Table 5: Year 10 breakdown of student exclusions according to reason by state and territory

	For the section of th	Pr	e-sam	ple Exe	clusions			
State	Enrolment in Participating Schools	1	2	3	Reason Unknown	Weighted Post- sample Exclusions	Total Exclusions	Exclusion Rate (%)
NSW	6,612	2	8	11	17	117	155	2.3
VIC	7,786	3	2	16	14	96	131	1.7
QLD	9,007	9	9	14	25	94	151	1.7
SA	7,206	7	14	18	32	32	103	1.4
WA	7,806	2	8	11	12	97	130	1.7
TAS	4,788	6	8	14	27	8	63	1.3
NT	2,097	3	7	13	3	17	43	2.1
ACT	4,556	2	14	10	20	19	65	1.4
Australia	49,859	34	70	107	150	481	842	1.7

The school and student participation rates by year level and by state and territory are presented in Tables 6 to 9¹.

¹ The response rates included in the public report are slightly different from the ones reported here, because they were the weighted student response rates.

State	Sample	Closed/ Ineligible Schools	Eligible Schools	School Refusals	School Replacements	Participating Schools	Schools with < 50% Response Rate	Total Number of Participating Schools Meeting Response Rate Requirements	Unweighted School Participation Rate (%)
NSW	47	1	46	0	0	46	1	45	97.8
VIC	46	0	46	2	2	46	0	46	100.0
QLD	47	0	47	0	0	47	0	47	100.0
SA	47	0	47	3	3	47	0	47	100.0
WA	46	0	46	0	0	46	0	46	100.0
TAS	48	0	48	0	0	48	0	48	100.0
NT	30	2	28	1	1	28	4	24	85.7
ACT	30	0	30	0	0	30	0	30	100.0
Australia	341	3	338	6	6	338	5	333	98.5

 Table 6:
 Year 6 numbers and percentages of participating schools by state and territory

Note that these figures differ from the number of schools reported in the Public Report because schools with low response rates were excluded from the participation rate calculations. Of the 5 Year 6 schools with response rates <50%, two had response rates <25% and were discarded. The remaining three schools were included in the analysis but not in the estimation of participation rates.

State	Sample	Closed/ Ineligible Schools	Eligible Schools	School Refusals	School Replacements	Participating Schools	Schools with < 50% Response Rate	Total Number of Participating Schools Meeting Response Rate Requirements	Unweighted School Participation Rate (%)
NSW	45	0	45	4	4	45	1	44	97.8
VIC	45	0	45	0	0	45	2	43	95.6
QLD	45	0	45	0	0	45	1	44	97.8
SA	45	1	44	0	0	44	1	43	97.7
WA	45	1	44	0	0	44	1	43	97.7
TAS	41	2	39	0	0	39	2	37	94.9
NT	27	6	21	0	0	21	6	15	71.4
ACT	30	1	29	0	0	29	1	28	96.6
Australia	323	11	312	4	4	312	15	297	95.2

 Table 7: Year 10 numbers and percentages of participating schools by state and territory

Note that these figures differ from the number of schools reported in the Public Report because schools with low response rates were excluded from the participation rate calculations. Of the 15 Year 10 schools with response rates <50%, four had response rates <25% and were discarded. The remaining 11 schools were included in the analysis but not in the estimation of participation rates.

State	Number of Sampled Students in Participating Schools	Number of Exclusions	Number of Eligible Students	Number of Non- respondents (including Parental Refusal)	Number of Participating Students	Unweighted Student Participation Rate (%)	Unweighted Overall Participation Rate (%)
NSW	868	0	868	77	791	91.1	89.1
VIC	906	4	902	114	788	87.4	87.4
QLD	936	9	927	134	793	85.5	85.5
SA	897	8	889	111	778	87.5	87.5
WA	903	4	899	80	819	91.1	91.1
TAS	871	5	866	99	767	88.6	88.6
NT	433	11	422	70	352	83.4	71.5
ACT	584	0	584	63	521	89.2	89.2
Australia	6,398	41	6,357	748	5,609	88.2	86.9

 Table 8:
 Year 6 numbers and percentages of participating students by state and territory

Table 9:	Year 10 numbers and	percentages of	participating stuce	lents by state and territory
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State	Number of Sampled Students in Participating Schools	Number of Exclusions	Number of Eligible Students	Number of Non- respondents (including Parental Refusal)	Number of Participating Students	Unweighted Student Participation Rate (%)	Unweighted Overall Participation Rate (%)
NSW	884	8	876	167	709	80.9	79.1
VIC	828	6	822	142	680	82.7	79.0
QLD	891	11	880	182	698	79.3	77.6
SA	859	14	845	186	659	78.0	76.2
WA	874	14	860	159	701	81.5	79.7
TAS	736	7	729	142	587	80.5	76.4
NT	316	17	299	82	217	72.6	51.8
ACT	572	12	560	116	444	79.3	76.6
Australia	5,960	89	5,871	1,176	4,695	80.0	76.1

Data collection procedures and data management

The data collection procedures and data management of NAP – CC 2013 have largely remained the same for the 2016 cycles of NAP – CC. They are detailed in Chapters 4 and 5 of the NAP – CC 2013 Technical Report. Below is the summary of the changes that were made in the 2016 cycle.

- No field trial was conducted.
- The Technical Readiness Test (TRT) process changed significantly from 2013. In 2016, school IT Coordinators also needed to download and install the NAP-Locked Down Browser (LDB) on all assessment devices, in addition to performing technical tests to confirm that compatibility and connectivity minimum requirements were met.
- USBs were not used as a backup data collection method. Rather, the 'school server' solution was implemented, whereby portable servers were delivered to schools and a closed network was created by connecting this server to school devices.
- ACER Test Administrators were not used. Rather, school staff delivered the assessments to students.
- In 2016, more jurisdictions were able to provide ACER with SBD directly (rather than schools having to provide it themselves). This provided better quality and coverage of SBD for this cycle.

A copy of the TRT can be found in Figure 5.

Scaling procedures

Both cognitive and questionnaire items were scaled using item response theory (IRT) scaling methodology. The cognitive items formed one NAP – CC proficiency scale, while a number of different scales were constructed from the questionnaire items. Both cognitive and questionnaire item responses were collected in an online environment in 2016. The same scaling procedures of NAP – CC 2013 were applied in the 2016 cycle. Details of scaling procedures can be found in Chapter 6 of the NAP – CC 2013 Technical Report.

Scaling cognitive items

Assessment of item fit was carried out. The model fit for cognitive test items was assessed using a range of item statistics. The item review resulted in removing the following items from the scale due to poor fit statistics: ER33 (Year 6), PROT33 (Year 6), AG01 (Year 10) and EL41 (Year 10). The quality of the items was further explored by assessing differential item functioning (DIF) by gender. No items were removed due to gender DIF.

Item calibration

Item parameters were calibrated using the full sample. The student weights were rescaled, to ensure that each state or territory was equally represented in the sample. Items were calibrated separately for Year 6 and Year 10.

Table 10 and Table 11 show the item difficulties for each year level on the historical scale with a response probability of 0.62 in logits.

	Item	Link item	Difficulty (RP=62)	Reporting scale	Per cent correct
1	AF33	Yes	0.43	357	66
2	AF34	Yes	2.01	562	35
3	AJ31	Yes	-0.19	276	76
4	AP21	No	-0.98	173	87
5	AP31	Yes	0.15	320	72
6	AP32	Yes	0.11	315	73
7	AP33	Yes	1.40	482	48
8	AP34	Yes	1.81	536	40
9	AP41	Yes	0.44	358	67
10	BA41	Yes	0.17	323	70
11	CG31	Yes	0.24	331	71
12	CN41	Yes	2.16	581	32
13	CR43	No	-0.85	190	86
14	CV32	Yes	0.24	332	71
15	DB21	Yes	1.37	479	49
16	DR0231	No	0.71	392	61
17	DR0232	Yes	1.84	540	38
18	EQ41	Yes	-1.15	151	89
19	ER31	Yes	-0.11	286	75
20	ER32	Yes	0.26	335	69
21	FA41	No	-0.62	220	82
22	FS41	Yes	-0.15	281	75
23	FT31	Yes	0.27	336	68
24	FT32	Yes	0.68	389	61
25	FT33	No	2.64	644	24
26	FW41	Yes	2.21	587	31
27	FW42	Yes	-0.67	214	82
28	GS31	Yes	1.01	432	56
29	GS32	Yes	-0.62	221	83

Table 10: Item difficulties and per cent correct for Year 6

	Item	Link item	Difficulty (RP=62)	Reporting scale	Per cent correct
30	GS33	Yes	0.47	362	67
31	HW31	Yes	-0.25	268	78
32	HW32	Yes	-0.31	261	79
33	HW33	Yes	-0.56	227	82
34	JB41	Yes	0.29	338	69
35	JB42	Yes	1.44	487	46
36	LC41	Yes	0.83	408	58
37	LC42	Yes	1.65	515	42
38	LC43	No	0.6	379	63
39	LG0231	Yes	0.93	421	57
40	NA44	No	-0.18	278	76
41	PM41	Yes	1.06	438	55
42	PROT31a	Yes	0.35	346	68
43	PROT32	Yes	0.07	310	73
44	PROT54	No	1.33	473	49
45	RF41	Yes	2.99	689	20
46	RI41	Yes	-0.79	198	83
47	RM01	No	1.62	511	42
48	SL41	Yes	0.59	378	62
49	SL43	Yes	1.48	493	46
50	SL44	Yes	-0.45	242	81
51	SU31	Yes	-0.73	206	84
52	SU32	Yes	1.17	452	52
53	SU33	Yes	-0.31	260	78
54	SU34	No	-0.73	206	84
55	TE31	Yes	0.26	334	68
56	TE32	No	1.20	456	50
57	TE33	Yes	0.79	403	59
58	TS41	Yes	0.78	402	59
59	TS42	Yes	0.76	399	59
60	TS43	Yes	-0.11	287	75
61	UN31	Yes	0.40	352	66
62	VM21	Yes	-0.58	226	82
63	VO41	Yes	-0.27	265	78
64	WL43	Yes	0.70	391	62

Link item Difficulty (RP=62) Reporting scale Percent correct 1 AA31 Yes 1.46 539 51 2 AA32 Yes 0.52 417 69 3 AA33 Yes 0.40 401 72 4 AC0231 No 0.11 363 76 5 AC32 Yes 0.65 433 67 6 AF31 Yes 1.22 507 57 7 AF33 No -0.25 317 82 8 AF34 Yes 1.90 596 433 9 AP31 Yes -0.52 281 851 10 AP32 Yes 0.65 4439 66 11 AP33 Yes 1.04 484 60 13 BA41 Yes 1.05 486 60 14 BD41 Yes 1.62 559 48							
2 AA32 Yes 0.52 417 69 3 AA33 Yes 0.40 401 72 4 AC0231 No 0.11 363 76 5 AC32 Yes 0.65 433 67 6 AF31 Yes 1.22 507 57 7 AF33 No -0.25 317 82 8 AF34 Yes 1.90 596 43 9 AP31 Yes -0.19 324 81 10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 483 <		Item					
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5 AC32 Yes 0.65 433 67 6 AF31 Yes 1.22 507 57 7 AF33 No -0.25 317 82 8 AF34 Yes 1.90 596 43 9 AP31 Yes -0.19 324 81 10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER32 Yes 0.07 359 777 22 FA41	3	AA33	Yes	0.40	401	72	
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7 AF33 No -0.25 317 82 8 AF34 Yes 1.90 596 43 9 AP31 Yes -0.19 324 81 10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR	5	AC32	Yes	0.65	433	67	
8 AF34 Yes 1.90 596 43 9 AP31 Yes -0.19 324 81 10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes 0.07 359 77 22 FA41 No -0.54 279 85	6	AF31	Yes	1.22	507	57	
9 AP31 Yes -0.19 324 81 10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes 0.38 398 72	7	AF33	No	-0.25	317	82	
10 AP32 Yes -0.52 281 85 11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes 0.38 398 72 26 FR44 Yes 0.46 538 51 27 <td< td=""><td>8</td><td>AF34</td><td>Yes</td><td>1.90</td><td>596</td><td>43</td></td<>	8	AF34	Yes	1.90	596	43	
11 AP33 Yes 0.85 459 64 12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes 0.38 300 83 24 FR42 Yes 0.38 398 72 26 FR44 Yes 0.16 370 76 30	9	AP31	Yes	-0.19	324	81	
12 AP34 Yes 1.04 484 60 13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes 0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.16 370 76 30 FT32 Yes 0.16 370 76 30	10	AP32	Yes	-0.52	281	85	
13 BA41 Yes -0.31 309 82 14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes -0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.20 323 81 29 FT32 Yes 0.16 370 76 30 FT33 Yes 0.70 440 67 32 <td< td=""><td>11</td><td>AP33</td><td>Yes</td><td>0.85</td><td>459</td><td>64</td></td<>	11	AP33	Yes	0.85	459	64	
14 BD41 Yes 0.69 439 67 15 BS41 Yes 1.05 486 60 16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes -0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.38 398 72 26 FR44 Yes 1.46 538 51 27 FR45 Yes 0.16 370 76	12	AP34	Yes	1.04	484	60	
15BS41Yes1.054866016CN41Yes1.625594817DB21Yes0.854606418DR41No0.263837419ER31Yes-0.712578620ER32Yes-1.142019021ER33Yes0.073597722FA41No-0.542798523FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	13	BA41	Yes	-0.31	309	82	
16 CN41 Yes 1.62 559 48 17 DB21 Yes 0.85 460 64 18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes -0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.38 398 72 26 FR44 Yes 1.46 538 51 27 FR45 Yes 0.96 474 62 28 FT31 Yes 0.16 370 76 30 FT33 Yes 1.53 548 50	14	BD41	Yes	0.69	439	67	
17DB21Yes0.854606418DR41No0.263837419ER31Yes-0.712578620ER32Yes-1.142019021ER33Yes0.073597722FA41No-0.542798523FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes0.163707630FT33Yes1.535485031GS31Yes0.053437933GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	15	BS41	Yes	1.05	486	60	
18 DR41 No 0.26 383 74 19 ER31 Yes -0.71 257 86 20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes -0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.38 398 72 26 FR44 Yes 1.46 538 51 27 FR45 Yes 0.96 474 62 28 FT31 Yes -0.20 323 81 29 FT32 Yes 0.16 370 76 30 FT33 Yes 1.53 548 50 31 GS31 Yes -0.05 343 79	16	CN41	Yes	1.62	559	48	
19ER31Yes-0.712578620ER32Yes-1.142019021ER33Yes0.073597722FA41No-0.542798523FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes-0.053437933GS33Yes-0.053437934IF11No1.845884535IF12No2.5067431	17	DB21	Yes	0.85	460	64	
20 ER32 Yes -1.14 201 90 21 ER33 Yes 0.07 359 77 22 FA41 No -0.54 279 85 23 FR41 Yes -0.38 300 83 24 FR42 Yes 0.89 464 63 25 FR43 Yes 0.38 398 72 26 FR44 Yes 1.46 538 51 27 FR45 Yes 0.96 474 62 28 FT31 Yes -0.20 323 81 29 FT32 Yes 0.16 370 76 30 FT33 Yes 1.53 548 50 31 GS31 Yes 0.70 440 67 32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79	18	DR41	No	0.26	383	74	
21ER33Yes0.073597722FA41No-0.542798523FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	19	ER31	Yes	-0.71	257	86	
22FA41No-0.542798523FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	20	ER32	Yes	-1.14	201	90	
23FR41Yes-0.383008324FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	21	ER33	Yes	0.07	359	77	
24FR42Yes0.894646325FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	22	FA41	No	-0.54	279	85	
25FR43Yes0.383987226FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	23	FR41	Yes	-0.38	300	83	
26FR44Yes1.465385127FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	24	FR42	Yes	0.89	464	63	
27FR45Yes0.964746228FT31Yes-0.203238129FT32Yes0.163707630FT33Yes1.535485031GS31Yes0.704406732GS32Yes-1.201939133GS33Yes-0.053437934IF11No1.845884535IF12No1.455375236IF13No2.5067431	25	FR43	Yes	0.38	398	72	
28 FT31 Yes -0.20 323 81 29 FT32 Yes 0.16 370 76 30 FT33 Yes 1.53 548 50 31 GS31 Yes 0.70 440 67 32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	26	FR44	Yes	1.46	538	51	
29 FT32 Yes 0.16 370 76 30 FT33 Yes 1.53 548 50 31 GS31 Yes 0.70 440 67 32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	27	FR45	Yes	0.96	474	62	
30 FT33 Yes 1.53 548 50 31 GS31 Yes 0.70 440 67 32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	28	FT31	Yes	-0.20	323	81	
31 GS31 Yes 0.70 440 67 32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	29	FT32	Yes	0.16	370	76	
32 GS32 Yes -1.20 193 91 33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	30	FT33	Yes	1.53	548	50	
33 GS33 Yes -0.05 343 79 34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	31	GS31	Yes	0.70	440	67	
34 IF11 No 1.84 588 45 35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	32	GS32	Yes	-1.20	193	91	
35 IF12 No 1.45 537 52 36 IF13 No 2.50 674 31	33	GS33	Yes	-0.05	343	79	
36 IF13 No 2.50 674 31	34	IF11	No	1.84	588	45	
	35	IF12	No	1.45	537	52	
37 IF14 No 1.98 607 41	36	IF13	No	2.50	674	31	
	37	IF14	No	1.98	607	41	

Table 11: Item difficulties and per cent correct for Year 10

	Item	Link item	Difficulty (RP=62)	Reporting scale	Per cent correct
38	IF15	No	1.89	595	42
39	IJ21	Yes	0.40	401	72
40	IQ11	Yes	1.75	577	46
41	IQ12	Yes	1.40	530	53
42	IQ13	No	1.81	584	46
43	JB41	Yes	-0.26	316	82
44	JB42	Yes	0.83	457	64
45	LC41	Yes	0.05	355	77
46	LC42	Yes	1.15	498	58
47	LC43	No	0.26	383	74
48	MA41	Yes	0.75	446	65
49	MA42	Yes	0.09	361	76
50	MG31	Yes	-0.02	347	78
51	MP31	Yes	0.50	414	70
52	MP32	Yes	0.27	384	74
53	MP34	Yes	0.17	371	76
54	MP35	No	0.53	418	70
55	PM41	Yes	0.09	360	77
56	PROT31a	Yes	-0.50	284	84
57	PROT32	Yes	-0.49	286	84
58	PROT33	Yes	0.80	452	65
59	REF1_1	Yes	1.07	488	59
60	RP31	Yes	1.00	479	60
61	SH41	Yes	2.02	611	40
62	SP31	Yes	1.31	519	55
63	SP32	Yes	-1.05	213	90
64	TD41	Yes	-0.37	301	83
65	TD42	Yes	-0.26	315	82
66	TS41	Yes	-0.26	316	81
67	TS42	Yes	-0.40	297	83
68	TS43	Yes	-0.52	281	84
69	VO41	Yes	-0.77	249	87
70	VO42	No	-0.02	346	80

Plausible values

Plausible values methodology was used to generate values for students' civics and citizenship knowledge. A conditioning model was created for each jurisdiction and year level. Details of the coding of regressors are listed in Table 12.

Table 12: Student background variables used for conditioning

Variable	Name	Values	Coding	Regressor	Year 10 only
Adjusted School Mean Achievement	SCH_MN	Logits		Direct	
Sector	Sector	Public	0	Direct	
		Catholic	10	Direct	
		Independent	1	Direct	
Geographic Location	Geoloc	Metro 1.1	0	Direct	
		Metro 1.2	1000000	Direct	
		Provincial 2.1.1	100000	Direct	
		Provincial 2.1.2	10000	Direct	
		Provincial 2.2.1	1000	Direct	
		Provincial 2.2.2	100	Direct	
		Remote 3.1	10	Direct	
		Remote 3.2	1	Direct	
SEIFA Levels	SEIFA	SEIFA_1	100000000	Direct	
		SEIFA_2	10000000	Direct	
		SEIFA_3	1000000	Direct	
		SEIFA_4	1000000	Direct	
		SEIFA_5	100000	Direct	
		SEIFA_6	10000	Direct	
		SEIFA_7	1000	Direct	
		SEIFA_8	100	Direct	
		SEIFA_9	10	Direct	
		SEIFA_10	0	Direct	
		Missing	1	Direct	
Gender	GENDER	Male	0	Direct	
		Female	10	Direct	
		Missing	1	Direct	
Age	AGE	Value	Сору,0	PCA	
		Missing	Mean,1	PCA	

Variable	Name	Values	Coding	Regressor	Year 10 only
LOTE Spoken at Home	LBOTE	Yes	10	PCA	
		No	0	PCA	
		Missing	1	PCA	
Student Born in Australia	СОВ	Australia	0	PCA	
		Overseas	10	PCA	
		Missing	1	PCA	
Parental Occupation Group	POCC	Senior Managers and Professionals	0	PCA	
		Other Managers and Associate Professionals	10000	PCA	
		Tradespeople & skilled office, sales and service staff	1000	PCA	
		Unskilled labourers, office, sales and service staff	100	PCA	
		Not in paid work in last 12 months	10	PCA	
		Not stated or unknown	1	PCA	
Highest Level of Parental Education	PARED	'Not stated or unknown'	1000000	PCA	
		'Year 9 or equivalent or below'	100000	PCA	
		'Year 10 or equivalent'	10000	PCA	
		'Year 11 or equivalent'	1000	PCA	
		'Year 12 or equivalent'	100	PCA	
		'Certificate 1 to 4 (inc. trade cert)'	10	PCA	
		'Advanced Diploma / Diploma'	1	PCA	
		'Bachelor degree or above'	0	PCA	

Variable	Name	Values	Coding	Regressor	Year 10 only
Indigenous Status Indicator	INDIG	Indigenous	10	PCA	
		Non-Indigenous	0	PCA	
		Missing	1	PCA	
Civic part. at school – vote	ST01Q01			PCA	
Civic part. at school – elected	ST01Q02			PCA	
Civic part. at school – decisions	ST01Q03			PCA	
Civic part. at school – webpage/magazine	ST01Q04	Yes No	Three dummy	PCA	
Civic part. at school – buddy	ST01Q05	This is not available at my	variables per question with the national mode as reference category	PCA	
Civic part. at school – community	ST01Q06	school Missing		PCA	
Civic part. at school – co-curricular	ST01Q07			PCA	
Civic part. at school – candidate	ST01Q08			PCA	
Civic part. at school – excursion	ST01Q09			PCA	
Civic part. in community - collecting money	ST02Q01			PCA	Year 10
Civic part. in community – help community	ST02Q02	Yes, I have done this within the last		PCA	Year 10
Civic part. in community – environmental	ST02Q03	year Yes, I have done this but more	Three dummy variables per	PCA	Year 10
Civic part. in community – human rights	ST02Q04	this but more than a year ago No, I have never done this Missing	question with the national mode as reference category	PCA	Year 10
Civic part. in community – youth organisation	ST02Q05			PCA	Year 10
Civic part. in community – animal rights	ST02Q06			PCA	Year 10

Variable	Name	Values	Coding	Regressor	Year 10 only
Civic communication – Internet	ST03Q01			PCA	
Civic communication – television	ST03Q02	Never or hardly ever		PCA	
Civic communication – radio	ST03Q03	At least once a month	Four dummy	PCA	
Civic communication – newspaper	ST03Q04	At least once a week	variables per question with the national mode as	PCA	
Civic communication – social media	ST03Q05	More than three times a week	reference category	PCA	
Civic communication – family	ST03Q06	Missing		PCA	
Civic communication – friends	ST03Q07			PCA	
PROMIS – sign petition	ST04Q01			PCA	
PROMIS – write to newspaper	ST04Q02			PCA	
PROMIS – write opinion on internet	ST04Q03	I would certainly do this		PCA	
PROMIS – wear an opinion	ST04Q04	l would probably do this	Four dummy variables per	PCA	
PROMIS – contact an MP	ST04Q05	I would probably not do this	question with the national mode as	PCA	
PROMIS – rally or march	ST04Q06	I would certainly not do this	reference category	PCA	
PROMIS – collect signature	ST04Q07	Missing		PCA	
PROMIS – choose not to buy	ST04Q08			PCA	
CIVACT – research candidates	ST05Q01	I would certainly do this		PCA	Year 10
CIVACT – help on campaign	ST05Q02	l would probably do this	Four dummy variables per	PCA	Year 10
CIVACT – join party	ST05Q03	I would probably	question with the	PCA	Year 10
CIVACT – join union	ST05Q04	not do this	national mode as reference category	PCA	Year 10
CIVACT – be a candidate	ST05Q05	l would certainly not do this Missing	loiorenee eategory	PCA	Year 10

Variable	Name	Values	Coding	Regressor	Year 10 only
CIVINT – local community	ST06Q01	Very interested		PCA	
CIVINT – politics	ST06Q02	Quite interested	Four dummy	PCA	
CIVINT – social issues	ST06Q03	Not very interested	variables per question with the	PCA	
CIVINT – environmental	ST06Q04	Not interested	national mode as	PCA	
CIVINT – other countries	ST06Q05	at all Missing	reference category	PCA	
CIVINT – global issues	ST06Q06			PCA	Year 10
CIVCONF – discuss a conflict	ST07Q01				
CIVCONF – argue an opinion	ST07Q02			PCA	
CIVCONF – be a candidate	ST07Q03	Very well Fairly well	Four dummy variables per		
CIVCONF – organise a group	ST07Q04	Not very well Not at all	question with the national mode as reference category	PCA	
CIVCONF - write a letter	ST07Q05	Missing		PCA	
CIVCONF – give a speech	ST07Q06	3		PCA	
CIVCONF – social media	ST07Q07			PCA	
VALCIV - act together	ST08Q01			PCA	
VALCIV – elected reps	ST08Q02			PCA	
VALCIV – student participation	ST08Q03	Strongly agree Agree Disagree Strongly disagree	Four dummy variables per	PCA	
VALCIV – organising groups	ST08Q04		question with the national mode as reference category	PCA	
VALCIV – vote school election	ST08Q05	Missing	reference calegoly	PCA	
VALCIV – citizens	ST08Q06			PCA	Year 10

Variable	Name	Values	Coding	Regressor	Year 10 only
IMPCCON – support a party	ST09Q01			PCA	
IMPCCON – learn history	ST09Q02			PCA	
IMPCCON – learn politics	ST09Q03			PCA	
IMPCCON – learn about other countries	ST09Q04	Very important		PCA	
IMPCCON – discuss politics	ST09Q05	Quite important	Four dummy	PCA	
IMPCSOC – peaceful protests	ST09Q06	Not very important	variables per question with the national mode as	PCA	
IMPCSOC – local community	ST09Q07	Not important at all	reference category	PCA	
IMPCSOC – human rights	ST09Q08	Missing		PCA	
IMPCSOC - environmental	ST09Q09			PCA	
IMPCSOC – protect natural resources	ST09Q10			PCA	
IMPCSOC – vote in elections	ST09Q11			PCA	
CIVTRUST – Australian parliament	ST10Q01			PCA	
CIVTRUST – state parliament	ST10Q02			PCA	
CIVTRUST – local government	ST10Q03	Completely Quite a lot	Four dummy	PCA	
CIVTRUST - law courts	ST10Q04	A little	variables per question with the	PCA	
CIVTRUST – police	ST10Q05	Not at all	national mode as reference category	PCA	
CIVTRUST – political parties	ST10Q06	Missing	reference category	PCA	
CIVTRUST – media	ST10Q07			PCA	
CIVTRUST – social media	ST10Q08			PCA	

Variable	Name	Values	Coding	Regressor	Year 10 only
ATINCULT – support traditions	ST11Q01			PCA	
ATINCULT – improve quality of life	ST11Q02	Strongly agree Agree	Four dummy	PCA	
ATINCULT – traditional ownership	ST11Q03	Disagree	variables per question with the national mode as	PCA	
ATINCULT – learn from traditions	ST11Q04	Strongly disagree Missing	reference category	PCA	
ATINCULT – learn about reconciliation	ST11Q05			PCA	
ATAUSDIF – keep traditions	ST12Q01			PCA	Year 10
ATAUSDIF – less peaceful	ST12Q02	Strongly agree		PCA	Year 10
ATAUSDIF – benefit greatly	ST12Q03	Strongly agree Agree	Four dummy variables per question with the national mode as reference category	PCA	Year 10
ATAUSDIF – all should learn	ST12Q04	Disagree Strongly disagree		PCA	Year 10
ATAUSDIF – unity difficult	ST12Q05	Missing		PCA	Year 10
ATAUSDIF – better place if only similar background	ST12Q06			PCA	Year 10
PROBLEM – pollution	ST13Q01			PCA	
PROBLEM – unemployment	ST13Q02			PCA	
PROBLEM – terrorism	ST13Q03			PCA	
PROBLEM – poverty	ST13Q04	Strongly agree		PCA	
PROBLEM – climate change	ST13Q05	Agree Disagree	Four dummy variables per question with the	PCA	
PROBLEM – water shortages	ST13Q06	Strongly disagree Missing	national mode as reference category	PCA	
PROBLEM – lack of access education	ST13Q07			PCA	
PROBLEM – crime	ST13Q08			PCA	
PROBLEM – lack of access health	ST13Q09			PCA	

Horizontal equating

A link item review of old items presented in previous cycles and the current cycle was carried out separately for each year level. To justify their use as link items, relative difficulties were compared between 2010 and 2013. Fifty-three out of 59 old items were used as link items for Year 6. Fifty-seven out of 62 old items were used as link items for Year 10. Figure 1 and Figure 2 show the scatter plots of the item difficulties for the selected link items.

Item-rest correlation as an index of item discrimination was also reviewed. The 2013 and 2016 values of these discrimination indices are presented in Figure 3 and Figure 4. The average item-rest correlation of the link items for Year 6 was 0.34 in 2013 and 0.37 in 2016. For Year 10, the average item-rest correlation was 0.36 in 2013 and 0.38 in 2016.

After the selection of link items, common item equating was used to shift the 2013 scale onto the historical scale for each year level separately. After applying these shifts, the same transformation as in 2013 (see Wernert, Gebhardt & Schulz, 2009) was applied to the students' scale scores.

For the Year 6 students:

$$\theta_{\mu}^{*} = \{(\theta_{\mu} - 0.193 - 0.063 - 0.473 - 0.547 - 0.189 - \overline{\theta}_{04})/\sigma_{04}\} \times 100 + 400$$

and for the Year 10 students:

$$\theta_{\mu}^{*} = \{(\theta_{\mu} - 0.168 - 0.208 - 0.777 - 0.057 + 0.119 - \overline{\theta}_{04})/\sigma_{04}\} \times 100 + 400$$

where θ_n^* is the transformed knowledge estimate for student *n*, θ_n is the original knowledge estimate for student n in logits, $\overline{\theta}_{04}$ 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).

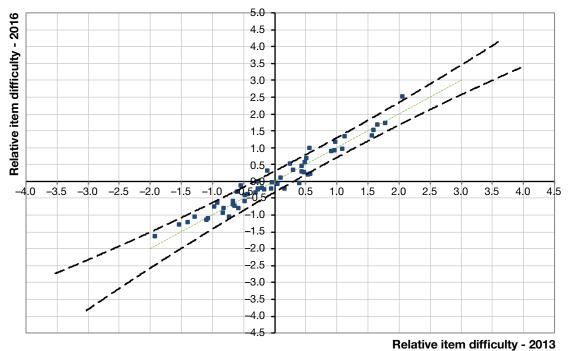
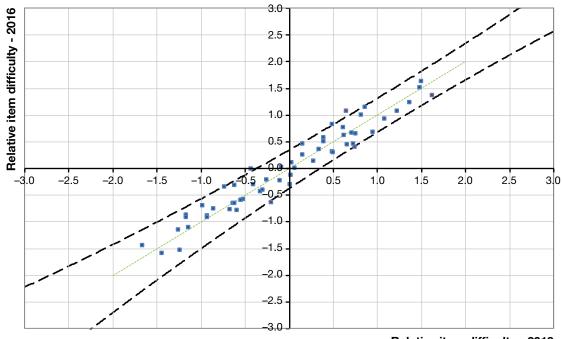


Figure 1: Relative item difficulties in logits of horizontal link items for Year 6 between 2013 and 2016



Relative item difficulty - 2013

Figure 2: Relative item difficulties in logits of horizontal link items for Year 10 between 2013 and 2016

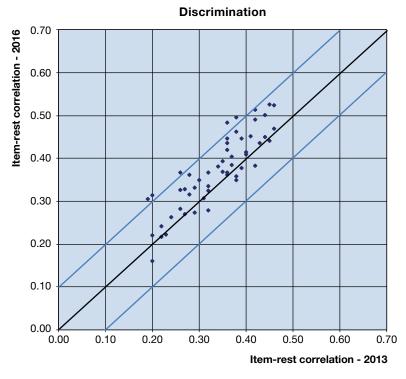


Figure 3: Discrimination of Year 6 link items in 2013 and 2016

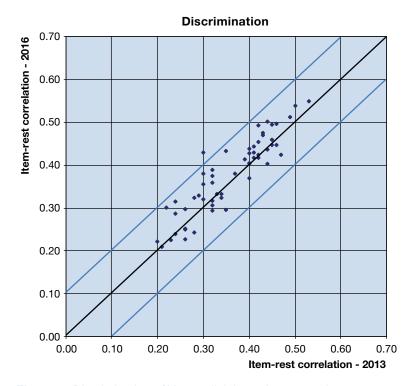


Figure 4: Discrimination of Year 10 link items in 2013 and 2016

Uncertainty in the link

The shift that equates the 2016 data with the 2013 data depends upon the change in difficulty of each of the individual link items. As a consequence, an uncertainty in the shift is introduced due to the sampling of the link items. The uncertainty that results from the selection of a subset of link items is referred to as linking error (also called equating error). The respective equating errors between 2016 and each previous assessment cycle are presented in Table 13. Tables 14 and 15 include the equating errors for percentages at or above the proficient standard.

Table 13: Equating errors for 2016

	With	2016
	Year 6	Year 10
2013	4.42	4.38
2010	6.56	6.44
2007	9.72	9.07
2004	9.46	8.06

Table 14: Equating errors for Year 6 percentages between 2016 and each of the previous cycles

		Equating Err	ror 2016 with	
Group	2013	2010	2007	2004
All students	1.12	1.73	2.73	2.64
NSW	1.00	1.57	2.55	2.46
VIC	0.96	1.57	2.58	2.49
QLD	1.41	2.08	3.11	3.02
SA	1.24	1.92	2.94	2.86
WA	1.30	1.90	2.86	2.78
TAS	1.24	1.86	2.76	2.68
NT	1.45	2.04	2.93	2.86
ACT	1.49	2.14	3.03	2.95
Female	1.16	1.74	2.67	2.60
Male	1.12	1.76	2.80	2.71
Non-Indigenous	1.12	1.74	2.74	2.65
Indigenous	1.59	2.09	2.80	2.74
English	1.15	1.74		
LBOTE	1.05	1.76		

		Equating Err	or 2016 with	
Group	2013	2010	2007	2004
Born overseas	0.99	1.72		
Born in Australia	1.16	1.76		
Metro	1.15	1.77	2.75	
Provincial	1.07	1.67	2.74	
Remote	0.95	1.31	2.08	
Senior Managers and Professionals	1.06	1.60		
Other Managers and Associate Professionals	1.13	1.87		
Tradespeople & skilled office, sales and service staff	1.60	2.37		
Unskilled labourers, office, sales and service staff	1.12	1.67		
Not in paid work in last 12 months	0.66	0.99		
Not stated or unknown	0.66	1.17		
Year 10 or equivalent or below	0.87	1.14		
Year 11 or equivalent	0.62	0.93		
Year 12 or equivalent	1.12	1.84		
Certificate 1 to 4 (inc. trade cert)	1.26	1.90		
Advanced Diploma / Diploma	1.64	2.34		
Bachelor degree or above	1.05	1.69		
Not stated or unknown	0.69	1.29		

Table 15: Equating errors for Year 10 percentages between 2016 and each of the previous cycles

		Equating Err	or 2016 with	
Group	2013	2010	2007	2004
All	1.33	2.01	2.87	2.54
NSW	1.06	1.77	2.73	2.35
VIC	1.73	2.51	3.39	3.06
QLD	1.52	2.05	2.74	2.47
SA	1.36	2.20	3.26	2.85
WA	1.23	1.79	2.54	2.25
TAS	1.20	1.75	2.48	2.19
NT	1.57	2.51	3.52	3.15
ACT	1.25	1.90	2.77	2.43

		Equating Err	or 2016 with	
Group	2013	2010	2007	2004
F	1.06	1.71	2.55	2.22
М	1.59	2.29	3.18	2.84
Non-INDIG	1.35	2.02	2.88	2.55
INDIG	1.07	1.64	2.27	2.04
English	1.40	2.08		
LBOTE	1.14	1.77		
Born overseas	1.03	1.59		
Born in Australia	1.40	2.09		
Metro	1.31	1.99	2.86	
Provincial	1.48	2.11	2.97	
Remote	1.22	2.09	2.89	
Senior Managers and Professionals	1.67	2.59		
Other Managers and Associate Professionals	1.41	2.10		
Tradespeople & skilled office, sales and service staff	1.24	1.84		
Unskilled labourers, office, sales and service staff	1.44	2.05		
Not in paid work in last 12 months	0.64	0.91		
Missing	1.22	1.81		
Year 10 or equivalent or below	0.73	1.18		
Year 11 or equivalent	2.23	3.01		
Year 12 or equivalent	1.12	1.68		
Certificate 1 to 4 (inc. trade cert)	1.21	1.87		
Advanced Diploma / Diploma	1.80	2.49		
Bachelor degree or above	1.41	2.17		
Not stated or unknown	1.48	2.24		

Scaling questionnaire items

Most of the questionnaire scaling procedures remain the same as for the 2013 cycle. A few changes were made to the questionnaire in 2016, including modification of two existing items and the addition of 15 new items.

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

- The scale relating to the valuing of civic action (VALCIV) includes one additional item in comparison to the 2013 cycle (new item).
- The scales relating to the importance of conventional citizenship and the importance of social movement related citizenship each included an additional item in comparison to the 2013 cycle (new items).
- The scale relating to trust in civic institutions and processes (CIVTRUS) includes one additional item in comparison to the 2013 cycle (new item).
- All nine items on perceptions of the severity of problems affecting Australia were used in the associated scale (PROBLEM) (new question).

Table 16 to Table 18 list the descriptions, transformation parameters and equating errors (respectively) for each of the questionnaire scales.

tionnaire scales	
i of quest	
Description	
Table 16:	

VeatVe	Question	ion						Cronbac	Cronbach's Alpha	Correlations with Performance	ons with nance
ool community imunication issues in the issues in the issues in the issues in the issues in the issues cesses cesses genous culture genous culture genous culture genous culture			Scale	Scale Label	Items	N items	Scores	Year 6	Year 10	Year 6	Year 10
ool community imunication issues in the issues in the isvic action ition tion tion tion tion tion citizenship tion citizenship tent related cesses cesses genous culture genous culture genous culture	Studen	ıts' en	igagement i	-							
community community immunication issues in the issues in the issues in the issues in the citicanship citizenship citizenship cesses cesses genous culture rsity g Australia	-	-	No scale	Civic-related participation at school	a-i	0	0-1	I	I	I	I
imunication issues in the sivic action tion tion citizenship ent related cesses genous culture srsity g Australia	ı	N	No scale	Civic-related participation in the community	a-f	9	0-2	ı	I	I	ı
issues in the isvic action tion tion citizenship cent related cesses cesses genous culture arsity g Australia	2	ო	No scale	Participation in civic-related communication	a-g	7	0-3	ı	I	I	ı
tion action tion tion tion citizenship cerses cesses genous culture srsity g Australia	co	4	PROMIS	ons to promote	a-h	ω	0-3	0.81	0.86	0.08	0.30
tion citizenship ent related cesses genous culture rsity g Australia	ı	2	CIVACT	Student intentions to engage in civic action	a-e	5	0-3	ı	0.78	ı	0.14
tion citizenship ent related cesses cesses genous culture arsity g Australia	4	9	CIVINT	Civic interest	a-f	9	0-3	0.8	0.84	0.15	0.32
citizenship ent related cesses genous culture srsity g Australia	5	7	CIVCONF	Confidence to engage in civic action	a-g	7	0-3	0.85	0.89	0.24	0.36
citizenship lent related cesses genous culture rsity g Australia	9	8	VALCIV	Valuing civic action	a-e(f) ²	5(6)	0-3	0.72	0.84	0.26	0.28
 MPCCON The importance of conventional citizenship IMPCSOC The importance of social movement related citizenship IMPCSOC The importance of social movement related CIVTRUST Trust in civic institutions and processes ATINCULT Attitudes towards Australian Indigenous culture ATAUSDIF Attitudes towards Australian diversity PROBLEM Perceptions of problems affecting Australia 	Studen	ıts' ati	titudes tows	rrds civic and citizenship issues							
 Pimperson The importance of social movement related citizenship CIVTRUST Trust in civic institutions and processes ATINCULT Attitudes towards Australian Indigenous culture ATAUSDIF Attitudes towards Australian Indigenous culture PROBLEM Perceptions of problems affecting Australia 	7		IMPCCON	The importance of conventional citizenship	a-e, k	9	0-3	0.76	0.82	0.13	0.26
 CIVTRUST Trust in civic institutions and processes ATINCULT Attitudes towards Australian Indigenous culture ATAUSDIF Attitudes towards Australian diversity PROBLEM Perceptions of problems affecting Australia 	2		IMPCSOC	The importance of social movement related citizenship	Ĺ	5	0-3	0.82	0.87	0.17	0.25
11ATINCULTAttitudes towards Australian Indigenous culture12ATAUSDIFAttitudes towards Australian diversity13PROBLEMPerceptions of problems affecting Australia	80	10	CIVTRUST	Trust in civic institutions and processes	a-f	9	0-3	0.86	0.89	0.12	0.13
12 ATAUSDIF Attitudes towards Australian diversity13 PROBLEM Perceptions of problems affecting Australia	თ	Ħ	ATINCULT	Attitudes towards Australian Indigenous culture	a-e	5	0-3	0.86	0.91	0.30	0.30
13 PROBLEM Perceptions of problems affecting Australia	ı	12	ATAUSDIF	Attitudes towards Australian diversity	a-f	9	0-3	ı	0.78	ı	0.40
	10	13	PROBLEM	Perceptions of problems affecting Australia	a- <u>-</u>	6	0-3	0.88	0.86	-0.13	-0.12

28

Questions only available for Y10 in italics. ¹ Two items (g and h) were excluded from the scale ² Five questions for Year 6, six for Year 10

	2016 Horizo	ntal Shift (d)	2010 Vertic	cal Shift (c)	2010 Mean (b)	2010 SD (a)
SCALE	Year 6	Year 10	Year 6	Year 10	Year 10	Year 10
ATAUSDIF		-0.103			0.620	1.443
ATINCULT					2.415	2.495
CIVACT					-0.979	1.563
CIVCONF	0.088	0.032	-0.140	0.022	0.101	1.742
CIVINT					0.280	1.694
CIVTRUST	0.001	0.003	0.000	-0.134	-0.070	1.915
IMPCCON	-0.075	-0.122			0.554	1.631
IMPCSOC	-0.133	-0.196			1.027	2.148
PROMIS			0.046	-0.027	-0.148	1.464
VALCIV	-0.017	-0.001		0.031	1.408	1.630

Table 17:	Transformation	parameters for	questionnaire scales

The transformation was applied as follows:

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

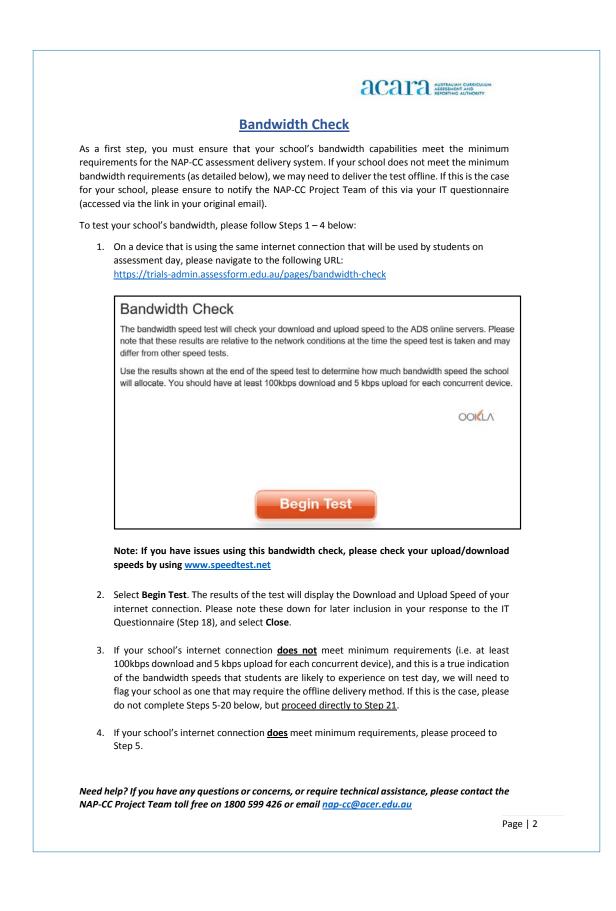
Where WLE^T is the transformed student score for student T, WLE is the original attitude estimate for student T in logits, d is the horizontal equating shift for Year 6 or Year 10 student scores in 2016 where applicable, c is the vertical equating shift for Year 6 or Year 10 student scores in 2010 where applicable, b is the 2010 mean estimate in logits of the Year 10 students and a is the 2010 standard deviation in logits of the Year 10 students.

Table 18: Equating errors for questionnaire scales

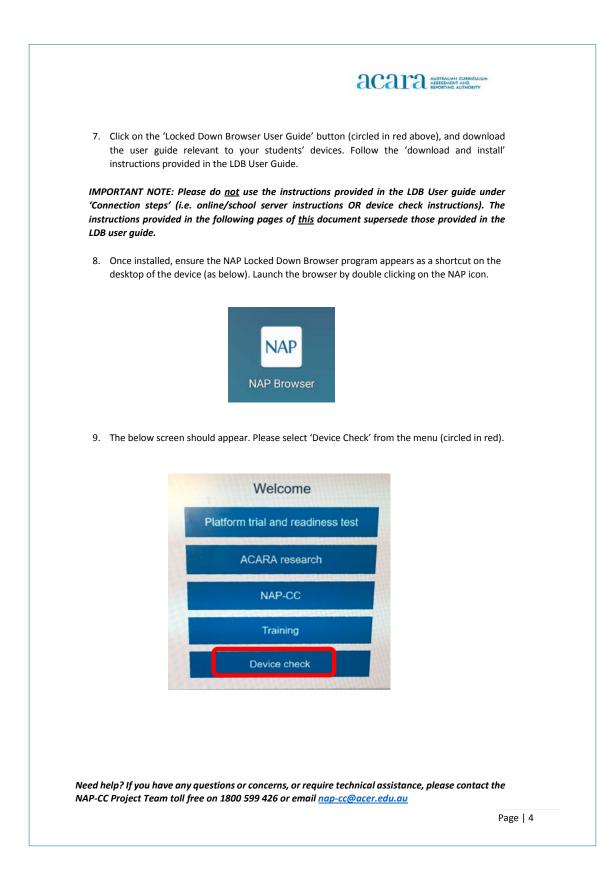
	Equatir	ng Error	Equatir	ng Error
	(2016 wi	ith 2013)	(2016 w i	ith 2010)
Scale	Year 6	Year 10	Year 6	Year 10
ATAUSDIF		0.533		0.638
ATINCULT	0.079	0.170	0.267	0.285
CIVACT		0.140		0.576
CIVCONF	0.100	0.444	0.237	0.473
CIVINT	0.200	0.314	0.310	0.388
CIVTRUST	0.182	0.355	0.324	0.764
IMPCCON	0.338	0.238	0.368	0.309
IMPCSOC	0.398	0.518	0.422	0.604
PROMIS	0.444	0.489	0.475	0.629
VALCIV	0.114	0.242	0.266	0.264

Figure 5: Technical Readiness Test (TRT) Instructions

acara Australian Cuericulum Assessing Authority	
NAP – Civics and Citizenship 2016	
Technical Readiness Test (TRT) Instructions for IT Coordinators (a.k.a. School Technical Support Officers)	
Summary of Instructions	
Ensure the school's internet connection meets the minimum bandwidth requirements by followir Steps 1-4 (overleaf) . Note: This can be done on any device as long as it uses the same internet connection that will be used on assessment day.	-
On the first student device, log in to the NAP-CC Landing Page (Steps 5 to 7) and download the Locked Down Browser User Guide that is relevant to the students devices that will be used.	
Download the relevant Locked Down Browser and install it on the machine.	
Once the Locked Down Browser is installed, run the Device Check (Steps 8 to 18) to confirm that the NAP-CC assessment will run correctly.	
Repeat this process <u>on every student device</u> that will be used on test day.	
Ensure a device for the Test Administrator (TA) meets the minimum device requirements (Step 20 Note: The TA device does NOT require the Locked Down Browser to be installed.	0).
Complete the quick questionnaire by clicking on your school-specific link in your original email.	
Please note that the National Online Assessment Platform was explicitly designed for NAPLA This means that some features are not relevant to NAP-CC. Any features not relevant to NA CC have been flagged in this document.	
Need help? If you have any questions or concerns, or require technical assistance, please contact in NAP-CC Project Team toll free on 1800 599 426 or email <u>nap-cc@acer.edu.au</u>	
	Page



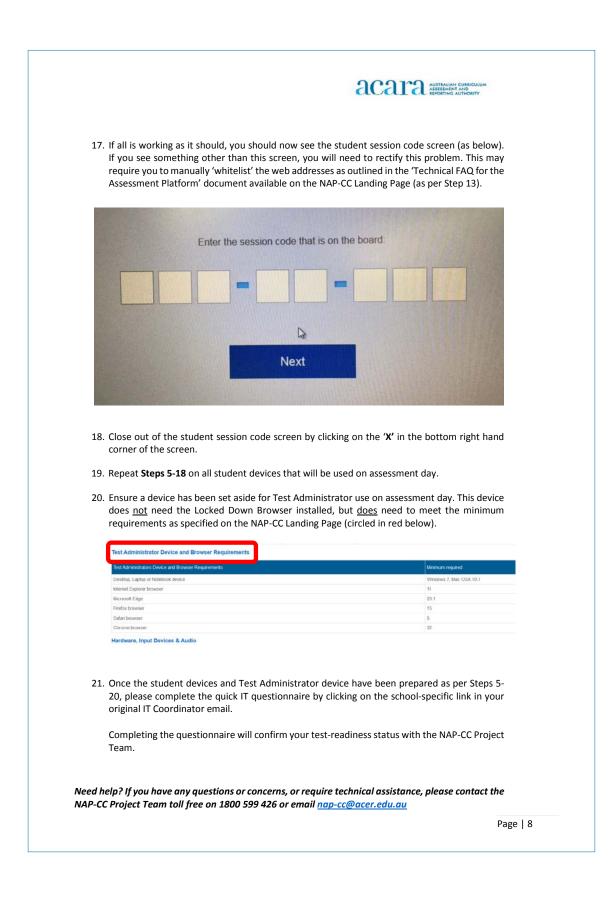
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your set-u	
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С. Т	he screen size of your device
D. A	tool for testing sound on your device (sound not required for NAP-CC)
	our browser and its version number
	he JavaScript status of your browser
G. A	tool for testing images on your device
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	eck (Element D): The NAP-CC test does NOT contain an audio component, so this
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so that th	e vicon will be displayed <u>regardress</u> of whether you can hear a sound (as below).
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Glossary of Terms			
Term	Definition		
Bring your own device (BYOD)	BYOD policy allows students to use their own computer at school.		
Device Check Tool	Checks the device to find out if it meets the technical requirements for NAP-CC online assessment.		
Locked-Down Browser	A locked-down browser is a secure browser. When students use a locked-down browser, they are unable to print, copy, go to another URL, or access other applications. Students are 'locked into' the test until they submit it.		
	The NAPLAN locked-down browser is being used for all NAP assessments including NAP-CC and should be installed on each device prior to test day.		
	The locked-down browser is installed on Windows computers as a stand-alone software and on Apple Mac computers and tablets (non-windows) as an application.		
NAP-CC Landing Page	This is the page accessed by navigating to www.assessform.edu.au/napcc.html		
	You must log into this page using the credentials supplied in your original IT email. The NAP-CC Landing Page contains all minimum technical requirements for the NAP-CC tests, as well as links to download the Locked Down Browser.		
Test Administrator	Test administrators are teachers, school staff members, school suppor staff who are involved in delivering (administering) the NAP-CC tests to students.		
Technical Readiness Test (TRT)	TRT is a process that takes place in schools to confirm that they are technically ready to run the NAP-CC online assessment. Once a school has performed this testing inclusive of device check and speed test, it will be clear whether that school can run the assessment online or whether it needs to request to run it offline.		
Test window	The test window encompasses the official days of test administration. Each school nominates its test day within this window. For NAP-CC, the test window is Monday 17 October – Friday 4 November 2016 .		

Need help? If you have any questions or concerns, or require technical assistance, please contact the NAP-CC Project Team toll free on 1800 599 426 or email <u>nap-cc@acer.edu.au</u>

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