

**California Department of Education Assessment Development & Administration Division**



# California Assessment of Student Performance and Progress Smarter Balanced Summative Assessment 2023–24 Technical Report

## Chapter 11 Appendix

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**By ETS**



**Contract No. CN220002**

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### Appendix 11.A: Item Response Theory Parameter Estimates

Table 11.A.1 Item Response Theory (IRT) *a-*values—English Language Arts/Literacy (ELA), Grade Three

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **Standard Deviation (SD)** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.61 | 0.17 | 0.33 | 0.92 |
| Composite Claim 2 | 17 | 0.75 | 0.19 | 0.42 | 1.14 |
| **All Items** | **39** | **0.67** | **0.19** | **0.33** | **1.14** |

Table 11.A.2 IRT *a-*values—ELA, Grade Four

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.70 | 0.23 | 0.35 | 1.14 |
| Composite Claim 2 | 17 | 0.65 | 0.12 | 0.44 | 0.92 |
| **All Items** | **39** | **0.68** | **0.19** | **0.35** | **1.14** |

Table 11.A.3 IRT *a*-values—ELA, Grade Five

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.62 | 0.14 | 0.34 | 0.92 |
| Composite Claim 2 | 17 | 0.71 | 0.12 | 0.52 | 0.92 |
| **All Items** | **39** | **0.66** | **0.14** | **0.34** | **0.92** |

Table 11.A.4 IRT *a*-values—ELA, Grade Six

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.55 | 0.14 | 0.28 | 0.87 |
| Composite Claim 2 | 17 | 0.56 | 0.16 | 0.20 | 0.87 |
| **All Items** | **39** | **0.56** | **0.15** | **0.20** | **0.87** |

Table 11.A.5 IRT *a*-values—ELA, Grade Seven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.56 | 0.11 | 0.40 | 0.88 |
| Composite Claim 2 | 17 | 0.56 | 0.10 | 0.34 | 0.71 |
| **All Items** | **39** | **0.56** | **0.11** | **0.34** | **0.88** |

Table 11.A.6 IRT *a*-values—ELA, Grade Eight

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 25 | 0.57 | 0.15 | 0.21 | 0.82 |
| Composite Claim 2 | 17 | 0.63 | 0.13 | 0.30 | 0.85 |
| **All Items** | **42** | **0.60** | **0.14** | **0.21** | **0.85** |

Table 11.A.7 IRT *a*-values—ELA, Grade Eleven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 23 | 0.57 | 0.18 | 0.30 | 1.05 |
| Composite Claim 2 | 17 | 0.60 | 0.11 | 0.46 | 0.83 |
| **All Items** | **40** | **0.58** | **0.15** | **0.30** | **1.05** |

Table 11.A.8 IRT *a*-values—Mathematics, Grade Three

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 17 | 0.65 | 0.24 | 0.22 | 1.27 |
| Composite Claim 2 | 19 | 0.74 | 0.23 | 0.50 | 1.30 |
| **All Items** | **36** | **0.70** | **0.24** | **0.22** | **1.30** |

Table 11.A.9 IRT *a*-values—Mathematics, Grade Four

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.69 | 0.26 | 0.28 | 1.14 |
| Composite Claim 2 | 18 | 0.85 | 0.32 | 0.46 | 1.40 |
| **All Items** | **38** | **0.77** | **0.29** | **0.28** | **1.40** |

Table 11.A.10 IRT *a*-values—Mathematics, Grade Five

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.64 | 0.25 | 0.23 | 1.46 |
| Composite Claim 2 | 19 | 0.65 | 0.27 | 0.32 | 1.45 |
| **All Items** | **39** | **0.64** | **0.25** | **0.23** | **1.46** |

Table 11.A.11 IRT *a*-values—Mathematics, Grade Six

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 19 | 0.68 | 0.19 | 0.40 | 1.01 |
| Composite Claim 2 | 20 | 0.62 | 0.17 | 0.35 | 1.09 |
| **All Items** | **39** | **0.65** | **0.18** | **0.35** | **1.09** |

Table 11.A.12 IRT *a*-values—Mathematics, Grade Seven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.54 | 0.21 | 0.20 | 1.02 |
| Composite Claim 2 | 20 | 0.73 | 0.28 | 0.35 | 1.35 |
| **All Items** | **40** | **0.63** | **0.26** | **0.20** | **1.35** |

Table 11.A.13 IRT *a*-values—Mathematics, Grade Eight

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.45 | 0.19 | 0.09 | 0.87 |
| Composite Claim 2 | 19 | 0.62 | 0.27 | 0.23 | 1.16 |
| **All Items** | **39** | **0.54** | **0.25** | **0.09** | **1.16** |

Table 11.A.14 IRT *a*-values—Mathematics, Grade Eleven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.48 | 0.20 | 0.14 | 0.79 |
| Composite Claim 2 | 20 | 0.50 | 0.23 | 0.10 | 0.99 |
| **All Items** | **42** | **0.49** | **0.22** | **0.10** | **0.99** |

Table 11.A.15 IRT *b*-values—ELA, Grade Three

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | −1.19 | 0.73 | −2.39 | 0.01 |
| Composite Claim 2 | 17 | −1.06 | 0.85 | −2.16 | 1.63 |
| **All Items** | **39** | **−1.13** | **0.78** | **−2.39** | **1.63** |

Table 11.A.16 IRT *b*-values—ELA, Grade Four

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | −0.60 | 0.95 | −2.19 | 2.18 |
| Composite Claim 2 | 17 | −0.70 | 0.68 | −1.82 | 0.73 |
| **All Items** | **39** | **−0.64** | **0.84** | **−2.19** | **2.18** |

Table 11.A.17 IRT *b*-values—ELA, Grade Five

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | −0.13 | 0.63 | −1.18 | 0.88 |
| Composite Claim 2 | 17 | −0.23 | 0.76 | −1.26 | 1.31 |
| **All Items** | **39** | **−0.17** | **0.69** | **−1.26** | **1.31** |

Table 11.A.18 IRT *b*-values—ELA, Grade Six

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.22 | 1.28 | −1.14 | 4.24 |
| Composite Claim 2 | 17 | 0.55 | 1.11 | −0.93 | 2.17 |
| **All Items** | **39** | **0.36** | **1.21** | **−1.14** | **4.24** |

Table 11.A.19 IRT *b*-values—ELA, Grade Seven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 0.89 | 1.01 | −1.01 | 2.80 |
| Composite Claim 2 | 17 | 0.84 | 0.91 | −1.06 | 1.87 |
| **All Items** | **39** | **0.87** | **0.96** | **−1.06** | **2.80** |

Table 11.A.20 IRT *b*-values—ELA, Grade Eight

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 25 | 0.89 | 1.02 | −1.29 | 2.60 |
| Composite Claim 2 | 17 | 1.29 | 1.18 | −0.46 | 2.80 |
| **All Items** | **42** | **1.05** | **1.09** | **−1.29** | **2.80** |

Table 11.A.21 IRT *b*-values—ELA, Grade Eleven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 23 | 1.02 | 1.09 | −0.70 | 3.97 |
| Composite Claim 2 | 17 | 0.99 | 0.67 | −0.41 | 2.03 |
| **All Items** | **40** | **1.01** | **0.93** | **−0.70** | **3.97** |

Table 11.A.22 IRT *b*-values—Mathematics, Grade Three

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 17 | −1.16 | 1.13 | −2.84 | 1.02 |
| Composite Claim 2 | 19 | −0.73 | 0.65 | −1.90 | 0.52 |
| **All Items** | **36** | **−0.94** | **0.92** | **−2.84** | **1.02** |

Table 11.A.23 IRT *b*-values—Mathematics, Grade Four

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | −0.46 | 0.64 | −1.68 | 0.86 |
| Composite Claim 2 | 18 | −0.14 | 0.67 | −1.29 | 0.98 |
| **All Items** | **38** | **−0.31** | **0.66** | **−1.68** | **0.98** |

Table 11.A.24 IRT *b*-values—Mathematics, Grade Five

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | −0.19 | 0.55 | −1.34 | 0.59 |
| Composite Claim 2 | 19 | −0.07 | 0.85 | −2.21 | 1.79 |
| **All Items** | **39** | **−0.13** | **0.71** | **−2.21** | **1.79** |

Table 11.A.25 IRT *b*-values—Mathematics, Grade Six

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 19 | 0.70 | 0.81 | −0.82 | 2.30 |
| Composite Claim 2 | 20 | 0.37 | 1.00 | −1.29 | 2.03 |
| **All Items** | **39** | **0.53** | **0.92** | **−1.29** | **2.30** |

Table 11.A.26 IRT *b*-values—Mathematics, Grade Seven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.67 | 1.05 | −1.79 | 2.45 |
| Composite Claim 2 | 20 | 0.73 | 0.90 | −0.81 | 2.17 |
| **All Items** | **40** | **0.70** | **0.97** | **−1.79** | **2.45** |

Table 11.A.27 IRT *b*-values—Mathematics, Grade Eight

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 20 | 0.73 | 0.86 | −0.88 | 2.86 |
| Composite Claim 2 | 19 | 1.25 | 1.06 | −0.47 | 3.14 |
| **All Items** | **39** | **0.98** | **0.98** | **−0.88** | **3.14** |

Table 11.A.28 IRT *b*-values—Mathematics, Grade Eleven

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Composite Claim** | **Number of Items** | **Mean** | **SD** | **Minimum** | **Maximum** |
| Composite Claim 1 | 22 | 1.73 | 1.49 | −1.12 | 4.56 |
| Composite Claim 2 | 20 | 1.89 | 1.04 | −0.40 | 4.37 |
| **All Items** | **42** | **1.81** | **1.28** | **−1.12** | **4.56** |

Table 11.A.29 PT Item Statistics—ELA, Grade Three

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VR552746 | 1 | 0.60 | 1.63 | N/A |
| VR552748 | 3 | 0.59 | −0.26 | 2.14,−0.45,−1.69 |
| VR552749 | 2 | 0.59 | −1.09 | 0.35,−0.35 |

Table 11.A.30 PT Item Statistics—ELA, Grade Four

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VR552796 | 1 | 0.55 | 0.73 | N/A |
| VR552798 | 3 | 0.55 | −0.25 | 2.18,0.39,−2.56 |
| VR552799 | 2 | 0.63 | −1.47 | 0.24,−0.24 |

Table 11.A.31 PT Item Statistics—ELA, Grade Five

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VR552861 | 1 | 0.52 | 0.07 | N/A |
| VR552863 | 4 | 0.65 | 0.52 | 2.76,0.95,−0.79,−2.92 |
| VR552864 | 2 | 0.64 | −1.11 | 0.97,−0.97 |

Table 11.A.32 PT Item Statistics—ELA, Grade Six

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH945531 | 1 | 0.60 | 1.59 | N/A |
| VH945533 | 4 | 0.37 | 0.95 | −0.71,1.96,0.76,−2.01 |
| VH945534 | 2 | 0.72 | −0.82 | 0.42,−0.42 |

Table 11.A.33 PT Item Statistics—ELA, Grade Seven

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH295526 | 2 | 0.71 | 1.72 | −0.34,0.34 |
| VH295529 | 4 | 0.66 | 1.27 | 1.47,0.62,−0.37,−1.72 |
| VH295530 | 2 | 0.63 | −0.52 | 0.12,−0.12 |

Table 11.A.34 PT Item Statistics—ELA, Grade Eight

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VR680053 | 2 | 0.85 | 1.38 | 0.65,−0.65 |
| VR552903 | 4 | 0.66 | 1.35 | 2.23,1.35,−0.99,−2.59 |
| VR552904 | 2 | 0.75 | −0.08 | 0.29,−0.29 |

Table 11.A.35 PT Item Statistics—ELA, Grade Eleven

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH945536 | 2 | 0.49 | 1.55 | 0.46,−0.46 |
| VH945538 | 4 | 0.46 | 1.26 | 2.01,1.9,−0.72,−3.19 |
| VH945539 | 2 | 0.49 | −0.41 | −0.69,0.69 |

Table 11.A.36 PT Item Statistics—Mathematics, Grade Three

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH945767 | 1 | 1.17 | −1.46 | N/A |
| VH945768 | 1 | 0.98 | −1.64 | N/A |
| VH945769 | 2 | 0.58 | −0.74 | −1.19,1.19 |
| VH945770 | 1 | 0.87 | −0.98 | N/A |
| VH945771 | 3 | 0.54 | 0.05 | 0.48,0.33,−0.81 |

Table 11.A.37 PT Item Statistics—Mathematics, Grade Four

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH300180 | 1 | 1.37 | −1.04 | N/A |
| VH300181 | 1 | 1.24 | −1.07 | N/A |
| VH300185 | 2 | 0.99 | −0.23 | 0.04,−0.04 |
| VH300188 | 2 | 0.74 | 0.94 | 0.17,−0.17 |

Table 11.A.38 PT Item Statistics—Mathematics, Grade Five

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH945850 | 1 | 0.79 | −2.21 | N/A |
| VH945851 | 1 | 0.85 | −1.33 | N/A |
| VH945852 | 2 | 0.73 | −0.12 | −0.43,0.43 |
| VH945853 | 2 | 0.65 | −0.97 | −0.93,0.93 |
| VH945854 | 2 | 0.58 | 0.60 | −1.05,1.05 |

Table 11.A.39 PT Item Statistics—Mathematics, Grade Six

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH953701 | 1 | 0.59 | −0.70 | N/A |
| VH953702 | 1 | 0.57 | −0.82 | N/A |
| VH953703 | 1 | 0.52 | −0.02 | N/A |
| VH953704 | 2 | 0.59 | 1.67 | −2.37,2.37 |
| VH953705 | 2 | 0.63 | −0.00 | −0.28,0.28 |
| VH953706 | 2 | 0.79 | 1.48 | −0.62,0.62 |

Table 11.A.40 PT Item Statistics—Mathematics, Grade Seven

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH299865 | 1 | 0.68 | 1.40 | N/A |
| VH299866 | 1 | 0.71 | −0.72 | N/A |
| VH299868 | 1 | 1.35 | 1.34 | N/A |
| VH299869 | 2 | 0.85 | 1.24 | 0.46,−0.46 |
| VH299871 | 1 | 1.30 | 2.05 | N/A |
| VH299872 | 2 | 0.82 | 2.17 | −0.45,0.45 |

Table 11.A.41 PT Item Statistics—Mathematics, Grade Eight

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH324249 | 1 | 0.98 | 1.74 | N/A |
| VH299802 | 1 | 1.16 | 2.12 | N/A |
| VH299806 | 2 | 0.79 | 2.11 | −0.17,0.17 |
| VH299807 | 1 | 0.99 | 1.62 | N/A |
| VH299811 | 2 | 0.86 | 2.78 | 0.02,−0.02 |

Table 11.A. PT Item Statistics—Mathematics, Grade Eleven

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Item ID** | **Score Points** | **A** | **B** | **D** |
| VH945893 | 1 | 0.48 | 1.41 | N/A |
| VH945894 | 1 | 0.82 | 1.73 | N/A |
| VH945895 | 1 | 0.87 | 2.34 | N/A |
| VH945896 | 1 | 0.99 | 2.33 | N/A |
| VH945897 | 2 | 0.45 | 2.11 | −1.41,1.41 |
| VH945898 | 2 | 0.40 | 1.80 | −1.50,1.50 |