

2018 No. 070

# Evaluation of the Iowa Statewide Assessment of Student Progress ELA, Mathematics, and Science Assessments: Grades 3-11 Alignment Report

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**Date:** October 12, 2018

# Evaluating the Alignment of the Iowa Statewide Assessment of Student Progress ELA, Mathematics, and Science Assessments: Grades 3-11

## Executive Summary

The Iowa Testing Program contracted with HumRRO to conduct an external alignment study for the new Iowa Statewide Assessment of Student Progress (ISASP) to provide evidence of consistency among the test blueprints, items, and Iowa content standards. Results from this study will be used to comply with the U.S. Department of Education Peer Review Process. The operational administration of the ISASP will begin in 2019.

The alignment study included evaluations of assessments in English language arts (ELA) and mathematics in grades 3-11, and of assessments of science in grades 5, 8, and 10. The assessments were evaluated using an approach derived from the methodology established by the Council of Chief State School Officers (CCSSO).<sup>1</sup> The evaluation of science assessments was further informed by criteria outlined by Achieve<sup>2</sup>. Our approach convened teachers and content experts to confirm the standards alignment and cognitive complexity levels of items that were intended by the item writers (i.e., item metadata), and to rate several other indicators of item quality.

The alignment study was conducted in two phases. During Phase 1, 34 Iowa educators representing 23 districts and eight regions were convened for a two-day workshop in which they reviewed test items. Panelists were experienced Iowa educators with expertise in the content area and grade span for which they reviewed items. Panelists were organized into three panels each for ELA and math (3-5, 6-8, and 9-11; six panels total), and two panels for science (5/8 and 10).

Panelists provided independent ratings for each item, but ultimately reached a consensus rating for each item based on group discussion. Data from Phase 1 were used to edit or replace items prior to the finalization of the 2019 operational test forms. Phase 2 of the study convened a subsample of the Iowa educators who participated in Phase 1, along with one nationally recognized expert for each content area. During Phase 2, revised and replacement items were rated using the same process implemented in Phase 1.

Overall, this study provides substantial evidence to support the content validity of the 2019 ISASP test forms. Across the grade/subject tests, a large majority of items were rated as measuring content outlined in the Iowa Core Standards. With a small number of exceptions, the number of aligned items fell within the ranges of items specified in the test blueprints. Finally, either the majority of items are written at a level of cognitive complexity that is within or above the range specified for the aligned content standard (ELA and math), or test forms contain an appropriate distribution of item cognitive complexity (science).

The table below summarizes the results for each grade level ELA test. A narrative description is presented below the table.

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<sup>1</sup> Council of Chief State School Officers (2013). *Criteria for procuring and evaluating high-quality assessments*. Washington, DC: Author. <http://www.ccsso.org/Documents/2014/CCSSO%20Criteria%20for%20High%20Quality%20Assessments%2003242014.pdf>

<sup>2</sup> <https://www.nextgenscience.org/sites/default/files/Criteria03202018.pdf>

### Summary of Alignment Results: ELA

	Item-to-Standards Alignment <sup>a</sup>	Blueprint Alignment <sup>b</sup>	Depth of Knowledge Alignment <sup>c</sup>
Grade 3	96%	8 of 8 strands	94%
Grade 4	100%	8 of 8 strands	96%
Grade 5	90%	8 of 8 strands	94%
Grade 6	86%	7 of 8 strands	87%
Grade 7	100%	7 of 8 strands	91%
Grade 8	98%	8 of 8 strands	91%
Grade 9	97%	8 of 8 strands	95%
Grade 10	91%	7 of 8 strands	93%
Grade 11	88%	6 of 8 strands	93%

<sup>a</sup>Values represent the percentage of items rated as fully covered by one or more of the Iowa Core Standards. <sup>b</sup>Values represent the content strands in which the number of aligned items fell within the ranges specified in the test blueprints. <sup>c</sup>Values represent the percentage of items rated at a cognitive complexity level that is within or above the range specified in the aligned content standard. \*Percentages do not include items linked to Standards for Literacy in History-Social Studies, Science, and Technical Subjects, as those standards do not have designated cognitive complexity ranges.

Across the grade level ELA assessments between 86% and 100% of items were rated as being fully aligned to the Iowa Core Standards, indicating that the large majority of items are measuring the content outlined in the standards documents. When the final item-to-standard alignment ratings were compared to the test blueprints, the majority of content domains at each grade level were measured by a number of items within the range specified by the test blueprint. Deviations from the blueprint were usually small. Two notable exceptions were grades 10 and 11, in which the number of items measuring the Key Ideas and Details domain were well below the low end of the range specified in the test blueprint. This was due to ratings of ‘not aligned’ for items that were intended to be aligned to standards for Literacy in History-Social Studies, Science, and Technical Subjects. Finally, across the grade level ELA assessments between 87% and 96% of items were rated at a cognitive complexity level within or above the range specified for the aligned standard.

The table below summarizes the results for each grade level math test. A narrative description is presented below the table.

### Summary of Alignment Results: Math

	Item-to-Standards Alignment <sup>a</sup>	Blueprint Alignment <sup>b</sup>	Depth of Knowledge Alignment <sup>c</sup>
Grade 3	94%	4 of 5 domains	100%
Grade 4	97%	5 of 5 domains	100%
Grade 5	100%	5 of 5 domains	100%
Grade 6	100%	5 of 5 domains	100%
Grade 7	96%	5 of 5 domains	100%
Grade 8	100%	5 of 5 domains	100%
Grade 9	94%	5 of 5 domains	100%
Grade 10	100%	5 of 5 domains	97%
Grade 11	97%	5 of 5 domains	100%

<sup>a</sup>Values represent the percentage of items rated as fully covered by one or more of the Iowa Core Standards. <sup>b</sup>Values represent the number of content domains in which the number of aligned items fell within the ranges specified in the test blueprints. <sup>c</sup>Values represent the percentage of items rated at a cognitive complexity level that is within or above the range specified in the aligned content standard.

Across the grade level math assessments between 94% and 100% of items were rated as being fully aligned to the Iowa Core Standards, indicating that the large majority of items are measuring the content outlined in the standards documents. When the final item-to-standard links agreed upon by the reviewers were compared to the test blueprints, the content expectations outlined in the blueprints were fully met for every test but grade 3. In grade 3, the Geometry domain had three aligned items, whereas the blueprint calls for a minimum of four. Finally, across the grade level math assessments between 97% and 100% of items were rated at a cognitive complexity level within or above the range specified for the aligned standard.

The table below summarizes the results for each science test. A narrative description is presented below the table.

### **Summary of Alignment Results: Science**

	<b>Item-to-Standards Alignment<sup>a*</sup></b>	<b>Blueprint Alignment<sup>b</sup></b>	<b>Depth of Knowledge Alignment<sup>c+</sup></b>
Grade 5	94%	3 of 3 domains	3% (1); 78% (2), 19% (3)
Grade 8	94%	3 of 3 domains	6% (1); 78% (2); 16% (3)
Grade 10	88%	3 of 3 domains	3% (1); 78% (2), 19% (3)

<sup>a</sup>Values represent the percentage of items rated as fully covered by one or more of the Iowa Core Standards. <sup>b</sup>Values represent the number of content domains in which the number of aligned items fell within the ranges specified in the test blueprints. <sup>c</sup>Values represent the percentage of items rated at DOK Levels 1, 2, and 3, respectively. \*An 'aligned' science item measures a performance expectation (PE) and at least one science dimension (Disciplinary Core Ideas, Crosscutting Concepts, Science and Engineering Practices). +Because the science standards do not specify a cognitive complexity level for each standard, depth of knowledge alignment was evaluated based on the distribution of DOK levels.

Across the grade level science assessments between 88% and 100% of items were rated as aligned to the assigned standard. For all three assessments the number of items rated as aligned fell within the range of items specified in the test blueprints for each content domain. For all three science assessments, there were fewer than 10% DOK Level 1 items, a majority of DOK Level 2 items, and greater than 15% DOK Level 3 item, reflecting an appropriate distribution of cognitive complexity that minimizes DOK1 tasks.