Appendices for
CMAS Technical Report
2014–2015

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APPENDIX A: HIGH SCHOOL STANDARD SETTING REPORT

Colorado Measures of Academic Success (CMAS)
Fall 2014 Standard Setting Report

&

September 8, 2015

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OVERVIEW

Colorado Measures of Academic Success (CMAS) is a newly developed standards-based assessment designed to measure what students should know and be able to demonstrate at each grade level. At the elementary and middle school levels, it was first administered in spring 2014 and standards were subsequently set in July in order to aid the interpretability of scores. For high school, the first administration was in fall 2014 and standards were set in February 2015. The purpose of this document is to provide a detailed report of the standard setting process for the fall 2014 administration of the high school assessments. It should be noted that while science standards were approved by the Colorado State Board of Education for 2014 only, social studies standards were not.

CMAS is aligned with the Colorado Academic Standards (CAS) for Science and Social Studies (located at http://www.cde.state.co.us/coscience/statestandards and http://www.cde.state.co.us/cosocialstudies/statestandards, respectively). Each test contains selected-response items (SR), a variety of technology-enhanced items (TEI), and constructed-response items (CR). The subject and grade combinations for CMAS are shown in Table 1. The first operational administration for grades 4, 5, 7, and 8 was in April 2014 and for high school in November of 2014. The majority of students took the assessment online with the paper test serving as an accommodated form for a very small percentage of students.

Table 1: CMAS Subjects and Grades

	Grade				
	4	**5**	**7**	**8**	**HS**
Science		X		X	X
Social Studies	X		X		X

To support the interpretation of student results, student performance on the CMAS is described in terms of four performance levels: Limited Command, Moderate Command, Strong Command, and Distinguished Command. The standard setting meeting was held in order to obtain cut score recommendations to assist the state in delineating thresholds for each of these four levels.

The methodology implemented was the commonly-used Bookmark, or Item-Mapping, method (Lewis, Mitzel, Green & Patz, 1999). This method is an item response theory-based item mapping procedure and makes use of an Ordered Item Book (OIB)—a collection of items ordered by difficulty. Panelists use performance level descriptors (PLDs) to conceptualize "threshold" students (those students just barely in a particular performance level) in order to determine the appropriate location of each cut score.

PREPARATION FOR STANDARD SETTING

Preparation for the standard setting started months before the actual meeting. This section provides details about the selection of panelists, the development of PLDs, the various materials that were created for the meeting, and the training of those who facilitated the meeting and analyzed the data.

Panelist Selection and Composition

The standard setting meeting included 14 panelists for each grade grouped in tables of four or five. Panelists were selected for participation by the Colorado Department of Education (CDE) to represent the state in terms of gender and ethnicity as well as relevant demographic characteristics (e.g., school size, geographic location). The majority of panelists for a given grade were teachers but in addition, there was administrator, Special Education, English Learners (EL), and higher education representation at each grade level. Appendix A describes panel composition for each grade level.

Development of PLDs

PLDs are an important tool for the Bookmark method. Prior to the standard setting meeting, PLDs were developed by Pearson content experts and then reviewed and edited by a committee of Colorado educators. PLDs are provided in Appendix B.

Creation of Materials

A standard setting meeting requires a considerable amount of materials, some paper-based and some electronic. This section outlines the primary materials and points to where the documents are provided.

Slides and Script

There were two main components of the meeting: the general session and the breakout sessions. For the general session, a PowerPoint presentation was created to provide a general overview of the meeting for all panelists in a large-group setting.

For the breakout sessions (where each grade/subject is in a separate room), slides and accompanying detailed scripts were developed. Because it is important that the process be standardized for each grade/subject, slides and associated script allow for the breakout sessions to be run in parallel fashion.

OIB

Since CMAS is primarily an online assessment and contains item types that require an online format to fully experience them (i.e., technology-enhanced items and simulations), the OIB was presented to panelists online. Operational items that appeared on the fall 2014 assessment were included in the OIB along with a handful of field test items to fill any gaps. Each item was presented on a separate page in item difficulty order according to its scale location using a response probability (RP) of 0.67. In addition, a metadata spreadsheet was provided indicating each page number, item ID, item type, content alignment, key (for multiple-choice items), and maximum points. In addition, space was provided for panelists to record their “yes” or “no” for each round. The metadata spreadsheet for each grade can be found in Appendix C.

Rubrics and Sample Responses

A booklet of rubrics and sample responses was created for each grade. The booklet included the rubric for each constructed-response item along with a sample response of each score point.

P-value Reports

As part of the feedback provided to panelists after Round 1 recommendations, p-value reports were provided. For one-point items, the p-value provided indicates the percentage of students who got the item correct during the fall 2014 administration. For constructed-response items, the p-value indicates the percentage of students who earned at least a particular score point during the fall 2014 administration. P-value reports for each grade can be found in Appendix D.

External Data

As part of the feedback provided to panelists after Round 2 recommendations, some external data were shared with panelists to provide a point of reference. The performance of Colorado students on the ACT in relation to the college readiness benchmark were provided. For science, science data were provided; for social studies, reading data were provided since there is no social studies component of the ACT. Data can be seen in Appendix E.

Forms

Numerous forms were created for panelists to complete and include the following:

- Panelist Information Sheet: While some demographic information was already included in the database of Colorado educators, the panelist information sheet was used to collect some additional information.

- Readiness Survey: A brief questionnaire was provided to panelists before each round of the standard setting process, in which panelists are asked to verify that they understand the task at hand and are ready to move forward. The readiness survey is provided in Appendix F.

- Bookmark Recommendation Form: This form was used to collect a panelist's recommendations for each round. It is provided in Appendix G.

- Standard Setting Evaluation: An evaluation was administered after the standard setting had been completed to gather information on panelists' perceptions on the meeting. The evaluation and its results are provided in Appendix H.

Training of Facilitators and Data Analysts

Several meetings were held with the facilitators and data analysts to properly train and prepare them for the meeting. For the facilitator training, the breakout session slides and script were walked through in detail and discussed to ensure that all four facilitators were in sync in terms of how to lead the panelists through the standard setting process and the logistics of the meeting. For data analysts, it was important the spreadsheets be set up properly to ensure accurate and

rapid analysis of panelists' recommendations. Although not specifically trained for the meeting, it should be noted that content specialists attended the meeting and were available to answer any content-related questions.

STANDARD SETTING MEETING ACTIVITIES

The CMAS standard setting took place February 16–17. During the two-day meeting, panelists were responsible for placing the bookmark in the OIB to establish proposed standards, reviewing feedback data, and making final cut-score recommendations. The specific procedures involved in the implementation of the Bookmark method are described in the sections that follow.

General Session

The meeting began with a session in which all panelists from both subjects convened to listen to introductory comments and receive directions for the meeting. First, a representative from CDE provided the context for the meeting by presenting details on CMAS and describing the importance of standard setting in the assessment development process. Next, a member of Pearson Psychometric Services staff (Dr. Jennifer Beimers) provided a brief overview of the Bookmark standard setting process including the rationale behind the procedure and the types of decisions panelists will be asked to make. Once the general overview was completed, panelists were dismissed to their designated committee rooms.

The Standard Setting Process

The standard setting tasks took place over the course of two days as outlined in this section of the report. Each grade was facilitated independently but the same standardized process was used across all grades.

Review and Discuss PLDs

After introductions and general housekeeping tasks were completed, each panelist was provided with a document listing the PLDs (Appendix B). Panelists were asked to review the labels and specific PLDs in light of the content frameworks.

Development of Threshold Descriptors

Panelists were reminded that the main purpose behind reviewing and discussing PLDs was to operationalize the performance levels to *support the standard setting task*. The focus was on the threshold student: those who "just barely" make it into a particular performance level. The goal was to gain a common understanding so that when panelists were asked to think about a threshold student, they were all in agreement regarding what such a student can/cannot do.

To develop the threshold descriptors, panelists were asked to identify concepts and skills in a given PLD that should describe the threshold student. Questions that helped guide the discussion included:

- Do any concepts and skills listed in the PLD do this outright?

- How could you modify or constrain the PLD to better reflect the limited capabilities of the "just-barely" student?
- What should the "threshold" student be able to do relative to these particular skills?

Each table worked together to create specific descriptions that separate students who are just barely in a particular performance level (threshold students) from students who are at the top of the previous performance level. Once drafted at the table level, the entire room shared and discussed their threshold descriptors and agreed on a final set of threshold descriptors for their specific grade. Once final, the threshold descriptors were printed for each panelist to use throughout the remainder of the standard setting activity.

Review Test Questions

Panelists were given time to review the OIB in order to familiarize themselves with the nature of the assessment. This provided an opportunity for panelists to gain an appreciation of the assessment experience, understand the manner in which the content standards are operationalized in test items, and get an overall feel for the difficulty of the test. Panelists were instructed to work on their own to review each of the items in the OIB keeping in mind the concepts and skills required to answer each item correctly. Upon completion, scoring keys for multiple-choice items were provided so that panelists could score their work.

Standard Setting Training and Practice Round

Panelists received detailed training on how to place a bookmark in the ordered item book in order to determine the transition from one performance level to the next. For each performance level, panelists were instructed to work through the OIB to determine the last "yes" page where all preceding items would define the concepts and skills that a *just barely Strong Command* student, for example, is expected to know. It is equivalent to the place in the OIB that accurately divides the items into those that <u>all</u> students at a given level SHOULD, with 2/3 chance or greater, answer correctly from those that they are not expected to answer correctly. The following outlines the specific steps that were to be followed for the "Moderate Command" cut.

1. Think about the skills that characterize a threshold "Moderate Command" student.
2. Start on page 1 of OIB and ask yourself, "SHOULD a threshold 'Moderate Command' student have at least a 2/3 chance of answering this item correctly?"
3. If yes, move on to the next item.
4. Do this until you get to your first "no."
5. Continue on to a couple more items to make sure these are also "no."
6. Record page associated with last "yes" on your recommendation form.

The same steps were repeated for "Strong Command" and "Distinguished Command." Panelists were reminded that since the content standards are new, they may not yet be fully implemented so it was important that panelists consider threshold students who have been instructed in the new standards.

Following the training session, panelists engaged in a practice round of standard setting using a small set of sample items. The purpose of this exercise was to have panelists get a chance to

practice placing of their bookmarks and to make sure everyone is comfortable with the task. This practice and training session was followed by a brief group discussion where panelists discussed their ratings and the general process employed. Based on discussion, facilitators provided additional instruction/guidance as needed.

Readiness Survey

To evaluate whether the training activities successfully helped panelists understand the task, a readiness survey was completed by each panelist prior to each round of recommendations (Appendix F). The readiness survey asked panelists to report if they understood the task Pearson facilitators asked of them as well as any feedback data provided. Results of the readiness survey indicated that panelists unanimously understood their tasks for each round and the data presented.

Round 1

After completing the readiness survey, the panelists began Round 1 of the standard setting. Panelists worked independently to determine which items in the OIB separated the performance levels. In reviewing each item, panelists were reminded to ask themselves, "Given the skill required to answer this item correctly, SHOULD a threshold level student answer the item correctly two thirds of the time?" Panelists recorded the page of their recommendation for each level on their Bookmark Recommendation Form (Appendix G), submitted it to the facilitator, and were dismissed for the day.

Round 1 Feedback

To begin Day 2, panelists were provided with several pieces of feedback information. With each piece of data, the panelists were reminded that the data was intended to inform their decisions, but not to dictate them.

First, each table was provided with a summary of their table's recommendations including the minimum, maximum, mean, standard deviation, and median. Panelists were instructed to consider how close their recommendation is to that of others in the group and discuss why they placed the bookmark where they did. Table-level discussions were had around this information and then the facilitators projected the same statistics at the room level. In addition, a bar chart reflecting the panelist agreement was displayed. During both table-level and room-level discussions, the group tried to determine the factors underlying the variability in recommendations by discussing the items associated with and around the recommended cuts. While panelists were encouraged to reassess their cut recommendations based on these discussions, the main purpose of this activity was to allow panelists to think through and discuss the recommendation process; it was not to arrive at a consensus.

The second report provided to the panelists before Round 2 was the item difficulty (p-values) report (Appendix D). For selected-response items, this report showed the percentage of fall 2014 examinees who answered each item correctly; for constructed-response items, it showed the percentage of fall 2014 examinees who earned at least a particular score point. This report was intended to be used to validate panelists' perceptions of item difficulty. Panelists were cautioned not to modify their ratings based on the item difficulty data alone.

Round 2

After discussing Round 1 feedback and completing the readiness survey for Round 2, panelists worked independently to re-evaluate their recommendations and decide whether they wanted to revise them. Panelists then recorded their Round 2 recommendations on their Bookmark Recommendation Form and submitted them to the facilitator.

Round 2 Feedback

Three pieces of feedback data were provided based on Round 2 recommendations. As before, panelists were reminded that their recommendations should be grounded in content and what students should know and be able to do, not what they can do or are currently doing.

First, panelists received the same summary statistics as in Round 1, but this time they were based on the page recommendations from Round 2. Table-level and group-level discussions were again conducted around these data.

Second, impact data were provided. Based on Round 2 recommendations, graphs indicating the percentage of students who would score in each of the performance levels was displayed. Overall fall 2014 test taker impact was provided but it was also disaggregated by ethnicity (African American, Hispanic, White, and other), gender, socio-economic status (SES), students in special education, and students who are ELs. Panelists were asked to discuss whether the percentage of students falling in each performance level meets their expectations given what they know about the population of students tested and the test content. Impact data were intended to provide a reasonableness check but panelists were reminded that any modifications to cut score recommendations should be based in content and not driven by impact data.

Third, external benchmark data were provided. To serve as a point of reference, the percentage of Colorado students meeting the college readiness benchmark was provided (Appendix E). For social studies, ACT reading information was shared; for science, ACT science data were displayed. These data were discussed at the room level.

Round 3

After discussing Round 2 feedback and completing the readiness survey for Round 3, panelists worked independently to again re-evaluate their recommendations and decide whether they wanted to revise them. Panelists then recorded their Round 3 recommendations on their Bookmark Recommendation Form and submitted them to the facilitator.

Evaluation

After all panelists were finished and final results were determined, panelists were asked to complete a short evaluation. The evaluation asked about panelists' level of comfort with the standard setting procedure, their understanding of the performance levels, and their satisfaction with final cut scores. The evaluation and results can be found in Appendix H. Upon completing the evaluations, panelists were thanked for their time and participation and dismissed.

Round 3 Recommended Cut Scores

This section provides results from the standard setting meeting. Table 2 shows the median of panelists' recommendations by round. There was relatively little fluctuation across rounds.

Table 2. Panelist Recommendations by Round

		Moderate Command	Strong Command	Distinguished Command
Science	**Round 1**	14	39	74
	Round 2	13	37	71
	Round 3	9	37	67
Social Studies	**Round 1**	23	57	76
	Round 2	25	60	75
	Round 3	22	58	75

Based on Round 3 recommendations, Figures 1 and 2 show the percentages of students who would fall into each performance level based on the fall 2014 administration. For both subjects, the majority of students scored in the Limited Command and Moderate Command performance levels. A very small percentage of students scored in the Distinguished Command performance level.

Figure 1. Round 3 Impact for Social Studies

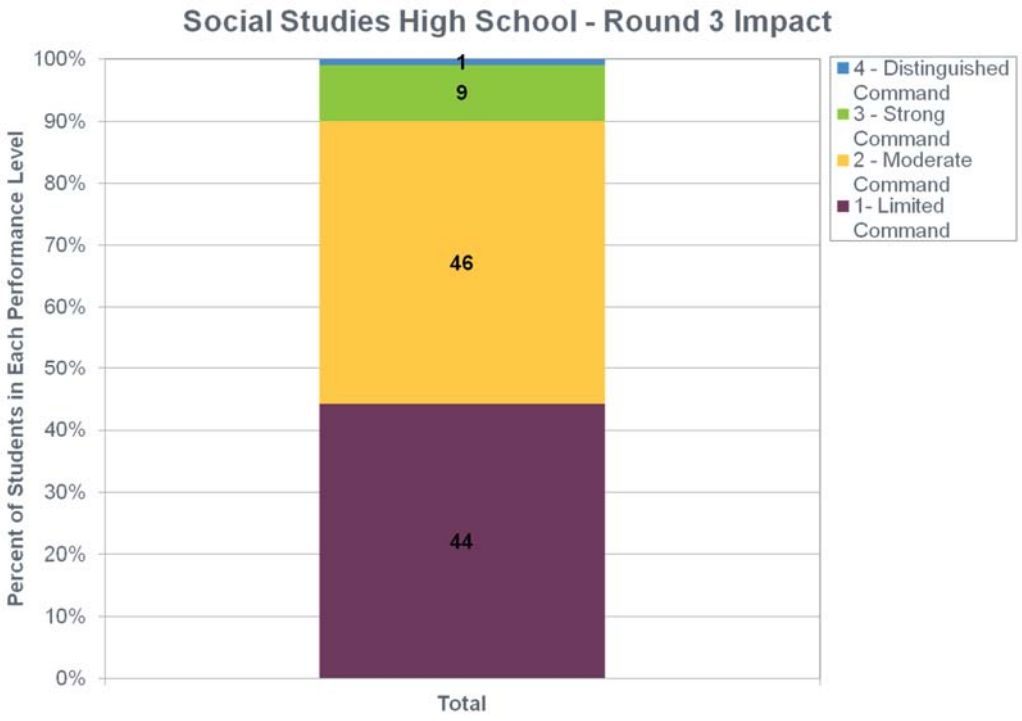
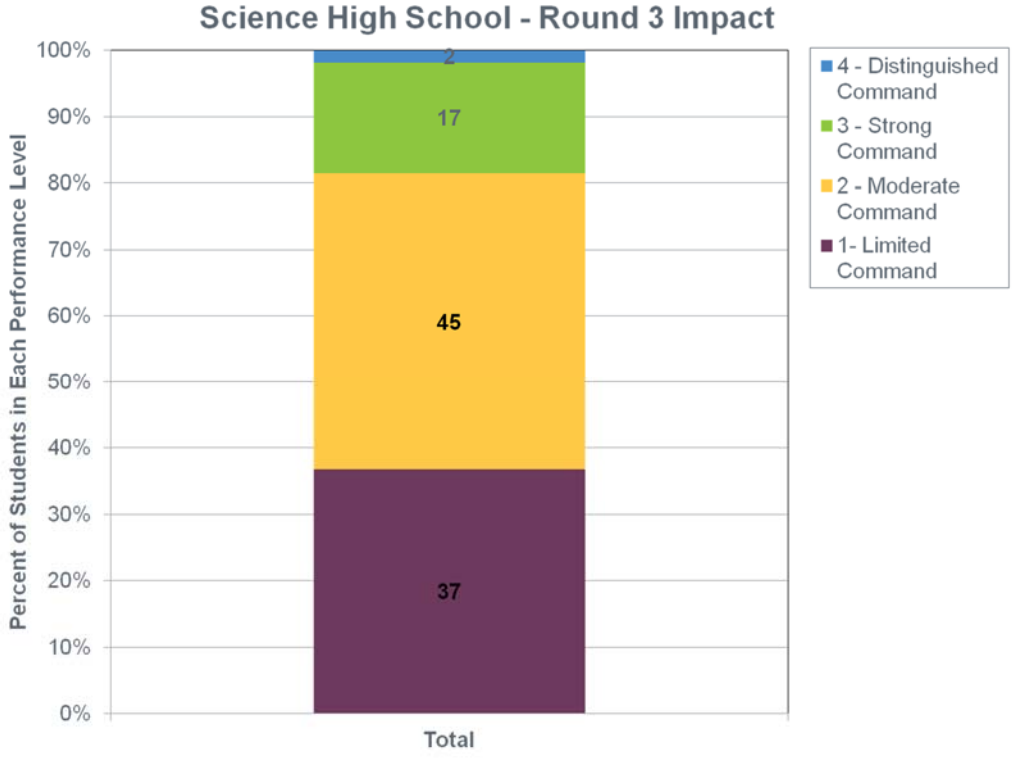


Figure 2. Round 3 Impact for Science



Based on the recommended science and social studies cut scores, the resulting scale score ranges for each performance level can be seen in Table 3.

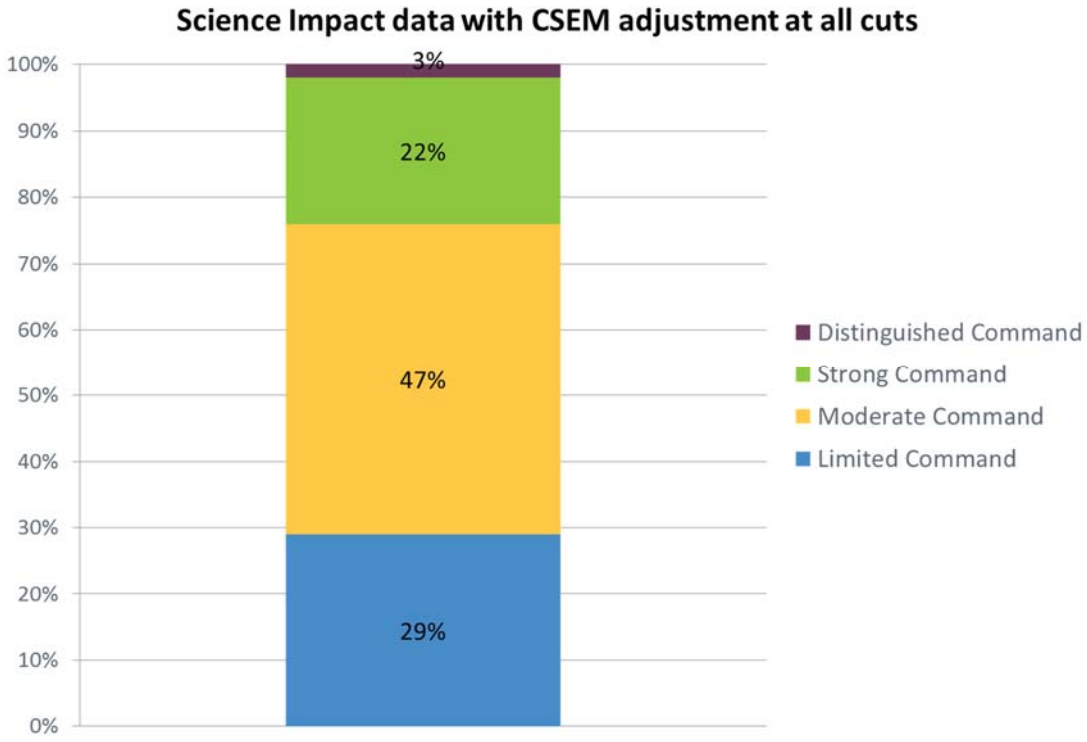
Table 3. Scale Score Ranges based on Recommended Cut Scores

	Limited Command	Moderate Command	Strong Command	Distinguished Command
Social Studies	300–593	594–723	724–810	811–900
Science	300–542	543–672	673–773	774–900

POST STANDARD SETTING ACTIVITIES

The cut score recommendations from the standard setting meeting were then presented to the State Board of Education along with a set of modified cut scores. The modified cut scores were derived by adjusting the panelists' recommended cut scores down by a conditional standard error of measurement. On the theta metric, the conditional standard error at each particular cut was subtracted from each respective theta cut score. These adjusted cuts were approved by the State Board of Education for the Science assessment only.

Figure 3. Impact for Adjusted Science Cut Scores



Based on the approved science cut scores, the resulting scale score ranges for each performance level can be seen in Table 4.

Table 4. Scale Score Ranges for Approved Cut Scores

	Limited Command	Moderate Command	Strong Command	Distinguished Command
Science	300–542	543–672	673–773	774–900

REFERENCES

Lewis, D. M., Mitzel, H. C., Green, D. R., & Patz, R. J. (1999). *The bookmark standard setting procedure*. Monterey, CA: McGraw-Hill.

APPENDIX A: PANEL COMPOSITION

Table 3. Panelist Breakdown by Expertise

	Content Expert	Administrator	Special Ed/ EL	Higher Ed	Total
Social Studies	7	4	1	2	**14**
Science	9	1	2	2	**14**
Total	**16**	**5**	**3**	**4**	**28**

Table 4. Panelists Breakdown by School Setting

	Denver Metro	Urban-Suburban	Outlying Town	Outlying City	Rural	Total
Social Studies	2	5	3	0	2	**12**
Science	5	2	4	0	1	**12**
Total	**7**	**7**	**7**	**0**	**3**	**24**

*Higher Ed participants are not included in this table.

Table 5. Panelists Breakdown by School Type

	Charter/Innovation School	Neither Charter nor Innovation	District Level	Higher Ed	Total
Social Studies	1	7	4	2	**14**
Science	1	9	2	2	**14**
Total	**2**	**16**	**6**	**4**	**28**

Table 6. Panelists Breakdown by Region

	Social Studies	Science	Total
Denver Metro	3	5	**8**
North Central	2	1	**3**
Northeast	1	1	**2**
Northwest	2	1	**3**
Pikes Peak	3	2	**5**
Southeast	1	0	**1**
Southwest	0	2	**2**
West Central	0	0	**0**
Total	**12**	**12**	**24**

*Higher Ed participants are not included in this table.

APPENDIX B: PERFORMANCE LEVEL DESCRIPTORS

Colorado Measures of Academic Success: High School Social Studies
Performance Level Descriptors (PLDs)

Students demonstrate mastery of social studies concepts and skills aligned to the Colorado Academic Standards at various performance levels. The performance level descriptors are organized in a manner that assumes students demonstrating higher levels of command have mastered the concepts and skills within the lower levels. For example, a student at Moderate Command has also mastered the concepts and skills at Limited Command.

At Distinguished Command, a student typically can

- **construct** and **defend** positions or **make predictions** about topics in U.S. and world history by gathering, analyzing, and evaluating information from primary and secondary sources, distinguishing among fact, opinion, and reasoned judgment;
- analyze significant events in world and United States history;
- **analyze** the interconnectedness of the world, including how the movement of people, goods, and ideas can enrich cultures or create tensions, and how the uneven distribution of resources can lead to conflict, competition, or cooperation;
- **analyze** economic goals and **predict** how scarcity of resources affects choices made by individuals, businesses, and governments;
- **formulate** and **defend** civic positions by researching issues and critiquing media and government sources; and
- **assess** the effectiveness of executive actions, the legislative process, and the justice system in preserving and promoting the ideals of the U.S. system of government.

At Strong Command, a student typically can

- **analyze** the significance of ideas as powerful forces throughout history, such as the impact of major religions, philosophies, political thought, and technological innovations;
- **analyze** primary and secondary social studies sources to synthesize information and draw conclusions;
- **explain** and **interpret** geographic variables—such as climate, terrain, population density, and natural resources—that influence the interactions among people, places, and environments;
- **assess** and **explain** the relationship between economic goals and policies and the allocation of scarce resources; and
- **explain** and **evaluate** how the founding documents—such as the Constitution and the Bill of Rights— embody the principles of democracy and values such as freedom, security, equality, and individual rights.

At Moderate Command, a student typically can

- **summarize** the causes, consequences, and outcomes of significant events and/or actions of significant individuals in U.S. and world history, including how conflict, compromise, and cooperation have shaped issues of unity and diversity;
- **interpret** and **draw conclusions** from maps, graphs, tables, and charts;
- **explain** how government activities, such as taxation and monetary policy, affect the economic choices of individuals and businesses; and
- **explain** how individuals and groups monitor and shape public policy at various levels of government.

At Limited Command, a student typically can

- **discuss** the significance of events and individuals in U.S. and world history;
- **gather** data and **locate** information on maps, graphs, tables, and charts;
- **identify** the economic choices that affect government, business, and personal financial planning decisions; and
- **identify** the structures and functions of various levels of government in the United States.

Note: The time frame for U.S. history is from approximately Reconstruction to the present, and world history is from approximately the Renaissance to the present.

Colorado Measures of Academic Success: High School Science
Performance Level Descriptors (PLDs)

Students demonstrate mastery of science concepts and skills aligned to the Colorado Academic Standards at various performance levels. The performance level descriptors are organized in a manner that assumes students demonstrating higher levels of command have mastered the concepts and skills within the lower levels. For example, a student at Moderate Command has also mastered the concepts and skills at Limited Command.

At Distinguished Command, a student typically can

- **justify** and **predict** the effects of force and mass on an object's motion, discuss conflicting results, and identify force pairs in interacting objects;
- using historical models, **justify** an evidence-based explanation for the current model of the atom and predict the amount of product formed in a nuclear or chemical reaction;
- **justify** an evidence-based explanation that demonstrates how ecosystems follow the laws of conservation of matter and energy;
- use evidence to **develop** a logical argument explaining how specialized tissues are formed, cloning occurs, and how environmental toxins cause genetic mutations;
- **explain** how genetic changes over time are the result of interactions within populations, heritability, genetic variation, and differential survival and reproduction;
- use data to **analyze** how forces and energies beyond Earth's have influenced the history of the universe and provide feedback on the validity of alternative explanations;
- **analyze** evidence to answer questions regarding changes to Earth, including those that result in shifts in climate and natural hazards; and
- **predict** impacts of resource exploration, development, and consumption and design a plan to reduce resource use.

At Strong Command, a student typically can

- **explain** how force and mass affect the acceleration of an object;
- **identify** reactants, **predict** products, and **balance** equations in chemical and nuclear reactions;
- **analyze** evidence to describe energy transformations and conservation;
- **evaluate** scenarios regarding human population growth and sustainability;
- **differentiate** between conditions for optimal enzyme and photosynthetic activity;
- **model** and **describe** how homeostasis is maintained in cells, organs, and organisms;
- **analyze** how organisms use passive and active transport;
- **explain** the processes of DNA replication, transcription, translation, and gene regulation;
- **model** relationships among organisms demonstrating common ancestry;
- **infer** the history of the universe, solar system, and Earth using evidence from past events;
- **explain** the historical development of the theory of plate tectonics; and
- use data to **evaluate** impacts of resource exploration, development, and consumption, and draw conclusions about sustainable use.

At Moderate Command, a student typically can

- use evidence to **demonstrate** how mass and distance affect the force of gravity between objects;
- **develop** models of atoms, molecules, elements, compounds, pure substances, and mixtures and identify the types of bonds that occur in molecules and compounds;
- use data to **measure** and **compare** energy transformations and efficiency;
- **model** how carbon, nitrogen, phosphorus, and water cycle in an ecosystem;

- **recognize** the importance of keystone and non-native species in an ecosystem;
- **identify** the relationship between photosynthesis, cellular respiration, and energy;
- **differentiate** between and give examples of passive and active transport;
- **explain** the relationship between genes and proteins and provide examples of how mutations can affect organisms;
- **describe** how changes in genetic traits lead to population adaptations;
- **explain** how external forces and energies influence Earth;
- **recognize** the interactions within Earth's geosphere, atmosphere, hydrosphere, and biosphere, including those that result in shifts in climate and natural hazards; and
- **compare** and **contrast** the costs and benefits of using resources provided by Earth and the Sun.

At Limited Command, a student typically can

- use Newton's laws to **describe** the relationship among forces, masses, and the motion of objects;
- **identify** the properties of matter and understand that mass and energy are conserved;
- **investigate** energy transformations and the conservation of energy;
- **describe** how energy flows through trophic levels;
- **identify** primary and secondary succession in an ecosystem;
- **identify** biomolecules, their building blocks, and their functions;
- **interpret** data to identify transport mechanisms;
- **recognize** that DNA controls traits;
- **identify** how genetic traits can be passed down through generations;
- use media and technology to **investigate** the universe, solar system, and Earth;
- use data to **describe** the theory of plate tectonics; and
- **identify** how factors interact to determine climate.

APPENDIX C: OIB METADATA SPREADSHEETS

Social Studies OIB Spreadsheet

Page	Item Identifier	Item Type	Max Points	Key	Standard	PGC	GLE	Round 1	Round 2	Round 3
1	SSHS0215	XI	1		Geography	2	3			
2	SSHS0244	XI	1		Economics	2	7			
3	COSSHSC2042_1	CR	3		Civics	2	3			
4	SSHS0091	XI	1		Economics	2	4			
5	SSHS0165	XI	1		History	2	3			
6	SSHS0179	XI	1		Economics	2	7			
7	SSHS0247	XI	1		Economics	2	4			
8	SSHS0069	MC	1	A	History	2	2			
9	SSHS0052	MC	1	B	Geography	1	2			
10	SSHS0088	MC	1	C	History	1	1			
11	COSSHSC2120_1	CR	3		Geography	1	2			
12	COSSHSC2094_1	CR	3		Geography	1	1			
13	COSSHSS2089	MC	1	C	Geography	1	1			
14	COSSHSC2050_1	CR	3		Civics	1	1			
15	COSSHSC2083_1	CR	3		Economics	2	6			
16	COSSHSS2022	MC	1	C	History	2	3			
17	SSHS0105	MC	1	A	Civics	2	2			
18	COSSHSS2047	MC	1	C	Economics	2	7			
19	COSSHSS2043	MC	1	D	Economics	2	4			
20	COSSHSS2092	MC	1	B	Geography	1	2			
21	COSSHSC2096_1	CR	3		Geography	2	3			
22	COSSHSS2051	MC	1	A	Civics	2	3			
23	SSHS0160	XI	1		Economics	1	1			
24	COSSHST2070	XI	1		Geography	1	1			
25	COSSHSE2129_1	CR	7		History	1	1			
26	SSHS0238	MC	1	D	Geography	1	2			
27	SSHS0236	XI	1		Geography	1	2			
28	COSSHSC2120_2	CR	3		Geography	1	2			
29	COSSHSS2125	MC	1	D	Civics	2	3			
30	COSSHSC2095_1	CR	3		History	2	2			
31	COSSHSC2082_1	CR	3		Civics	2	2			
32	COSSHSS2084	MC	1	B	Civics	2	2			
33	SSHS0239	MC	1	C	Geography	1	2			
34	COSSHSS2127	MC	1	D	History	1	1			
35	SSHS0237	MC	1	D	Geography	1	2			
36	SSHS0251	XI	1		History	2	3			

37	COSSHSC2042_2	CR	3		Civics	2	3			
38	COSSHSS2061	MC	1	D	Civics	2	2			
39	COSSHST2126	XI	1		History	2	2			
40	SSHS0099	MC	1	A	History	2	3			
41	COSSHSC2080_1	CR	3		Economics	1	1			
42	COSSHSC2094_2	CR	3		Geography	1	1			
43	COSSHSS2052	MC	1	A	Civics	2	3			
44	COSSHSS2065	MC	1	A	Civics	2	2			
45	COSSHSS2128	MC	1	C	History	2	3			
46	COSSHSS2039	MC	1	C	Economics	1	2			
47	COSSHSC2064_1	CR	3		History	2	3			
48	COSSHSE2129_2	CR	7		History	1	1			
49	SSHS0227	XI	1		History	2	3			
50	COSSHSS2033	MC	1	D	Geography	2	3			
51	SSHS0249	XI	1		Economics	1	1			
52	SSHS0109	MC	1	B	History	2	3			
53	COSSHSS2069	MC	1	D	Geography	1	1			
54	COSSHSC2096_2	CR	3		Geography	2	3			
55	COSSHSS2031	MC	1	A	Civics	1	1			
56	COSSHSS2041	MC	1	D	Civics	2	2			
57	COSSHSS2002	MC	1	B	History	2	2			
58	SSHS0240	MC	1	C	Geography	1	2			
59	COSSHSC2095_2	CR	3		History	2	2			
60	COSSHSE2129_3	CR	7		History	1	1			
61	SSHS0223	XI	1		Civics	2	2			
62	SSHS0248	XI	1		History	2	2			
63	COSSHSS2025	MC	1	D	Civics	1	1			
64	COSSHSE2129_4	CR	7		History	1	1			
65	COSSHSC2064_2	CR	3		History	2	3			
66	COSSHSC2082_2	CR	3		Civics	2	2			
67	COSSHSC2050_2	CR	3		Civics	1	1			
68	COSSHSC2120_3	CR	3		Geography	1	2			
69	COSSHSC2083_2	CR	3		Economics	2	6			
70	COSSHSS2036	MC	1	C	Economics	1	1			
71	COSSHSS2027	MC	1	D	Civics	1	1			
72	SSHS0172	XI	1		Economics	2	6			
73	COSSHSC2080_2	CR	3		Economics	1	1			
74	COSSHSS2058	MC	1	B	Geography	2	3			
75	COSSHSE2129_5	CR	7		History	1	1			

76	COSSHSC2094_3	CR	3		Geography	1	1			
77	COSSHSE2129_6	CR	7		History	1	1			
78	COSSHSC2042_3	CR	3		Civics	2	3			
79	COSSHSC2064_3	CR	3		History	2	3			
80	COSSHSC2095_3	CR	3		History	2	2			
81	COSSHSC2096_3	CR	3		Geography	2	3			
82	COSSHSS2124	MC	1	B	History	2	2			
83	COSSHSC2083_3	CR	3		Economics	2	6			
84	COSSHSC2050_3	CR	3		Civics	1	1			
85	COSSHSS2090	MC	1	C	Geography	2	3			
86	COSSHSC2082_3	CR	3		Civics	2	2			
87	COSSHSE2129_7	CR	7		History	1	1			
88	COSSHSC2080_3	CR	3		Economics	1	1			
89	COSSHSS2013	MC	1	C	Economics	2	7			
90	SSHS0250	XI	1		Economics	2	4			
91	COSSHST2011	XI	1		Economics	1	2			

Science OIB Spreadsheet

Page	Item Identifier	Item Type	Max Points	Key	Standard	PGC	GLE	Round 1	Round 2	Round 3
1	SCHS0006	XI	1		Life Science	2	2			
2	SCHS0026	XI	1		Life Science	4	9			
3	SCHS0059	MC	1	B	Earth Systems	3	5			
4	SCHS0061	MC	1	B	Earth Systems	2	6			
5	COSC120206	MC	1	C	Earth Systems	2	4			
6	COSCHST2000	XI	1		Physical Science	1	1			
7	SCHS0173	MC	1	A	Earth Systems	2	6			
8	SCHS0112-SCSHS002	MC	1	B	Life Science	1	6			
9	COSCHSS2036	MC	1	D	Life Science	2	1			
10	COSC120211	MC	1	A	Physical Science	1	1			
11	COSCHSS2116	MC	1	B	Earth Systems	2	6			
12	SCHS0146	MC	1	A	Life Science	4	9			
13	COSCHSS2022	MC	1	A	Physical Science	2	3			
14	SCHS0048	MC	1	D	Earth Systems	2	4			
15	SCHS0150	XI	1		Earth Systems	1	1			
16	SCHS0020	MC	1	C	Life Science	4	9			
17	COSCHSC2105_1	CR	2		Earth Systems	2	7			
18	COSC120236	MC	1	C	Earth Systems	2	4			
19	COSC120229	MC	1	D	Life Science	3	7			
20	COSCHSS2097	MC	1	D	Earth Systems	1	2			
21	COSCHSC2067_1	CR	2		Life Science	1	4			
22	COSC120223	MC	1	D	Life Science	2	2			
23	COSCHSC2084_1	CR	2		Life Science	2	1			
24	COSCHSC2075_1	CR	3		Life Science	1	6			
25	COSCHSS2106	MC	1	D	Earth Systems	2	3			
26	COSCHSS2050	MC	1	C	Life Science	2	2			
27	COSCHSC2031_1	CR	3		Physical Science	3	5			
28	COSCHSS2109	MC	1	D	Earth Systems	2	4			
29	COSC130372	XI	1		Physical Science	2	3			
30	COSC120233	MC	1	D	Earth Systems	1	1			
31	COSCHSC2006_1	CR	2		Physical Science	1	1			
32	COSCHSS2026	MC	1	B	Physical Science	3	6			
33	COSCHSS2104	MC	1	B	Earth Systems	2	3			
34	COSCHSC2112_1	CR	3		Earth Systems	3	5			

35	COSCHSS2113	MC	1	B	Earth Systems	3	5			
36	COSCHSC2079_1	CR	2		Life Science	3	7			
37	COSCHSC2098_1	CR	2		Earth Systems	2	3			
38	COSC120195	MC	1	C	Physical Science	3	5			
39	COSCHSC2018_1	CR	2		Physical Science	2	2			
40	COSCHSS2005	MC	1	D	Physical Science	1	1			
41	COSC120224	MC	1	D	Life Science	1	3			
42	COSCHSC2007_1	CR	2		Earth Systems	1	2			
43	COSCHSC2020_1	CR	2		Physical Science	2	4			
44	COSCHSC2117_1	CR	2		Earth Systems	2	6			
45	COSC120219	MC	1	D	Physical Science	3	6			
46	SCHS0027	MC	1	D	Life Science	2	1			
47	SCHS0164	XI	1		Physical Science	3	5			
48	COSCHST2023	XI	1		Physical Science	2	3			
49	COSCHST2014	XI	1		Physical Science	2	2			
50	COSCHSC2031_2	CR	3		Physical Science	3	5			
51	COSCHSS2085	MC	1	A	Earth Systems	1	1			
52	COSC120212	MC	1	B	Physical Science	1	1			
53	COSCHST2030	XI	1		Physical Science	2	4			
54	COSCHSC2084_2	CR	2		Life Science	2	1			
55	COSCHSC2075_2	CR	3		Life Science	1	6			
56	COSCHSC2012_1	CR	2		Earth Systems	1	1			
57	COSC120237	MC	1	A	Earth Systems	2	4			
58	COSCHSC2089_1	CR	2		Life Science	4	9			
59	COSCHSC2112_2	CR	3		Earth Systems	3	5			
60	COSCHSS2081	MC	1	A	Life Science	3	8			
61	COSCHSC2079_2	CR	2		Life Science	3	7			
62	COSCHST2033	XI	1		Physical Science	3	6			
63	COSCHSC2067_2	CR	2		Life Science	1	4			
64	COSCHST2029	XI	1		Physical Science	2	4			
65	COSCHSC2094_1	CR	2		Physical Science	2	3			
66	COSC120198	MC	1	B	Life Science	3	7			
67	COSCHSC2012_2	CR	2		Earth Systems	1	1			
68	COSCHSC2007_2	CR	2		Earth Systems	1	2			
69	COSC120220	MC	1	C	Earth Systems	3	5			
70	COSC120202	XI	1		Life Science	4	9			
71	COSCHSS2080	MC	1	A	Life Science	3	8			
72	COSCHSC2006_2	CR	2		Physical Science	1	1			
73	COSC120185	XI	1		Physical Science	2	4			

74	COSCHSC2070_1	CR	2		Life Science	1	5			
75	COSCHSC2112_3	CR	3		Earth Systems	3	5			
76	COSCHST2072	XI	1		Life Science	1	5			
77	COSCHSS2083	MC	1	C	Life Science	3	8			
78	COSCHSC2089_2	CR	2		Life Science	4	9			
79	COSCHSC2031_3	CR	3		Physical Science	3	5			
80	COSCHSC2018_2	CR	2		Physical Science	2	2			
81	COSCHSC2117_2	CR	2		Earth Systems	2	6			
82	COSCHSC2075_3	CR	3		Life Science	1	6			
83	COSCHSS2045	MC	1	D	Earth Systems	1	2			
84	COSCHSC2070_2	CR	2		Life Science	1	5			
85	COSCHSC2094_2	CR	2		Physical Science	2	3			
86	COSCHST2057	XI	1		Life Science	1	3			
87	COSCHSC2098_2	CR	2		Earth Systems	2	3			
88	COSCHSC2105_2	CR	2		Earth Systems	2	7			
89	COSCHST2073	XI	1		Life Science	1	5			
90	COSCHSC2020_2	CR	2		Physical Science	2	4			
91	COSCHST2046	XI	1		Life Science	2	1			

APPENDIX D: P-VALUE REPORTS

Social Studies

Page	Item Identifier	P-value
1	SSHS0215	0.94
2	SSHS0244	0.91
3	COSSHSC2042_1	0.86
4	SSHS0091	0.71
5	SSHS0165	0.80
6	SSHS0179	0.77
7	SSHS0247	0.78
8	SSHS0069	0.80
9	SSHS0052	0.74
10	SSHS0088	0.78
11	COSSHSC2120_1	0.74
12	COSSHSC2094_1	0.73
13	COSSHSS2089	0.75
14	COSSHSC2050_1	0.72
15	COSSHSC2083_1	0.72
16	COSSHSS2022	0.74
17	SSHS0105	0.71
18	COSSHSS2047	0.71
19	COSSHSS2043	0.68
20	COSSHSS2092	0.69
21	COSSHSC2096_1	0.67
22	COSSHSS2051	0.66
23	SSHS0160	0.66
24	COSSHST2070	0.62
25	COSSHSE2129_1	0.62
26	SSHS0238	0.60
27	SSHS0236	0.59
28	COSSHSC2120_2	0.56
29	COSSHSS2125	0.56
30	COSSHSC2095_1	0.54
31	COSSHSC2082_1	0.55
32	COSSHSS2084	0.61
33	SSHS0239	0.59
34	COSSHSS2127	0.53
35	SSHS0237	0.58
36	SSHS0251	0.59
37	COSSHSC2042_2	0.54
38	COSSHSS2061	0.52
39	COSSHST2126	0.56
40	SSHS0099	0.57
41	COSSHSC2080_1	0.53
42	COSSHSC2094_2	0.45
43	COSSHSS2052	0.58
44	COSSHSS2065	0.50
45	COSSHSS2128	0.55
46	COSSHSS2039	0.60
47	COSSHSC2064_1	0.44
48	COSSHSE2129_2	0.44
49	SSHS0227	0.50
50	COSSHSS2033	0.42
51	SSHS0249	0.52

Page	Item Identifier	P-value
52	SSHS0109	0.42
53	COSSHSS2069	0.45
54	COSSHSC2096_2	0.31
55	COSSHSS2031	0.38
56	COSSHSS2041	0.38
57	COSSHSS2002	0.46
58	SSHS0240	0.47
59	COSSHSC2095_2	0.23
60	COSSHSE2129_3	0.21
61	SSHS0223	0.40
62	SSHS0248	0.43
63	COSSHSS2025	0.42
64	COSSHSE2129_4	0.15
65	COSSHSC2064_2	0.15
66	COSSHSC2082_2	0.18
67	COSSHSC2050_2	0.21
68	COSSHSC2120_3	0.23
69	COSSHSC2083_2	0.18
70	COSSHSS2036	0.39
71	COSSHSS2027	0.27
72	SSHS0172	0.42
73	COSSHSC2080_2	0.16
74	COSSHSS2058	0.47
75	COSSHSE2129_5	0.05
76	COSSHSC2094_3	0.11
77	COSSHSE2129_6	0.04
78	COSSHSC2042_3	0.15
79	COSSHSC2064_3	0.03
80	COSSHSC2095_3	0.04
81	COSSHSC2096_3	0.06
82	COSSHSS2124	0.35
83	COSSHSC2083_3	0.03
84	COSSHSC2050_3	0.04
85	COSSHSS2090	0.32
86	COSSHSC2082_3	0.02
87	COSSHSE2129_7	0.01
88	COSSHSC2080_3	0.03
89	COSSHSS2013	0.54
90	SSHS0250	0.52
91	COSSHST2011	0.04

Science

Page	Item Identifier	P-value
1	SCHS0006	0.86
2	SCHS0026	0.92
3	SCHS0059	0.79
4	SCHS0061	0.81
5	COSC120206	0.77
6	COSCHST2000	0.76
7	SCHS0173	0.73
8	SCHS0112-SCSHS002	0.70
9	COSCHSS2036	0.70
10	COSC120211	0.72
11	COSCHSS2116	0.70
12	SCHS0146	0.69
13	COSCHSS2022	0.67
14	SCHS0048	0.65
15	SCHS0150	0.62
16	SCHS0020	0.58
17	COSCHSC2105_1	0.59
18	COSC120236	0.62
19	COSC120229	0.54
20	COSCHSS2097	0.54
21	COSCHSC2067_1	0.54
22	COSC120223	0.53
23	COSCHSC2084_1	0.51
24	COSCHSC2075_1	0.51
25	COSCHSS2106	0.51
26	COSCHSS2050	0.56
27	COSCHSC2031_1	0.50
28	COSCHSS2109	0.49
29	COSC130372	0.53
30	COSC120233	0.45
31	COSCHSC2006_1	0.41
32	COSCHSS2026	0.51
33	COSCHSS2104	0.51
34	COSCHSC2112_1	0.43
35	COSCHSS2113	0.53
36	COSCHSC2079_1	0.37
37	COSCHSC2098_1	0.38
38	COSC120195	0.48
39	COSCHSC2018_1	0.41
40	COSCHSS2005	0.34
41	COSC120224	0.45
42	COSCHSC2007_1	0.37
43	COSCHSC2020_1	0.41
44	COSCHSC2117_1	0.38
45	COSC120219	0.40
46	SCHS0027	0.50
47	SCHS0164	0.36
48	COSCHST2023	0.28
49	COSCHST2014	0.37
50	COSCHSC2031_2	0.25

Page	Item Identifier	P-value
51	COSCHSS2085	0.37
52	COSC120212	0.42
53	COSCHST2030	0.27
54	COSCHSC2084_2	0.20
55	COSCHSC2075_2	0.18
56	COSCHSC2012_1	0.15
57	COSC120237	0.32
58	COSCHSC2089_1	0.21
59	COSCHSC2112_2	0.16
60	COSCHSS2081	0.30
61	COSCHSC2079_2	0.14
62	COSCHST2033	0.32
63	COSCHSC2067_2	0.18
64	COSCHST2029	0.26
65	COSCHSC2094_1	0.18
66	COSC120198	0.44
67	COSCHSC2012_2	0.08
68	COSCHSC2007_2	0.13
69	COSC120220	0.35
70	COSC120202	0.21
71	COSCHSS2080	0.26
72	COSCHSC2006_2	0.07
73	COSC120185	0.08
74	COSCHSC2070_1	0.06
75	COSCHSC2112_3	0.07
76	COSCHST2072	0.17
77	COSCHSS2083	0.46
78	COSCHSC2089_2	0.06
79	COSCHSC2031_3	0.07
80	COSCHSC2018_2	0.09
81	COSCHSC2117_2	0.08
82	COSCHSC2075_3	0.04
83	COSCHSS2045	0.22
84	COSCHSC2070_2	0.01
85	COSCHSC2094_2	0.03
86	COSCHST2057	0.08
87	COSCHSC2098_2	0.02
88	COSCHSC2105_2	0.03
89	COSCHST2073	0.07
90	COSCHSC2020_2	0.02
91	COSCHST2046	0.13

APPENDIX E: EXTERNAL DATA

HS Social Studies External Data

PEARSON

ACT-Reading

	Percent Meeting Benchmark	
	ACT College Readiness (22)	Colorado (17)
Colorado	38%	69%
US	44%	

PEARSON

HS Science External Data

PEARSON

ACT-Science

	ACT College Readiness Benchmark (23)
Colorado	36%
US	37%

PEARSON

APPENDIX F: READINESS SURVEY

Colorado Measures of Academic Success (CMAS)
Standard-Setting Round Readiness Survey

Panelist ID: _____

Instructions: Please circle your response to the following questions.

Round 1		
I understand that my task for Round 1 is to use my content expertise, my experience with Colorado students, the threshold student descriptors, and the ordered item book to make cut score recommendations. To make my recommendation, I will indicate the last "yes" page on the recommendation sheet.	**No**	**Yes**
I am ready to begin Round 1.	**No**	**Yes**

Round 2		
I understand that my task for Round 2 is to use my content expertise, my experience with Colorado students, the threshold student descriptors, and the ordered item book to make cut score recommendations. To make my recommendation, I will indicate the last "yes" page on the recommendation sheet.	**No**	**Yes**
I understand the panelist feedback data that were presented from Round 1.	**No**	**Yes**
I understand the item difficulty data (i.e., p-values) that were provided.	**No**	**Yes**
I am ready to begin Round 2.	**No**	**Yes**

Round 3		
I understand that my task for Round 3 is to use my content expertise, my experience with Colorado students, the threshold student descriptors, and the ordered item book to make cut score recommendations. To make my recommendation, I will indicate the last "yes" page on the recommendation sheet.	**No**	**Yes**
I understand the impact data that were presented from Round 2.	**No**	**Yes**
I am ready to begin Round 3.	**No**	**Yes**

APPENDIX G: BOOKMARK RECOMMENDATION FORMS

Bookmark Recommendation Form

Directions: For each level, write down the **page number** corresponding to the **last YES** item. No cells should be left blank within a given round.

Panelist ID: _____

Table Number: _____

	Page Number of LAST YES Item		
	Moderate Command	**Strong Command**	**Distinguished Command**
Round 1			
Round 2			
Round 3			

APPENDIX H: STANDARD SETTING EVALUATION

Colorado Measures of Academic Success (CMAS)
Standard Setting Evaluation Form

The purpose of this evaluation form is to collect information about your experience in recommending performance cut scores for CMAS. Your opinions provide an important part of our evaluation of this meeting. Please do not write your name on this evaluation form as we want your comments to be anonymous. Thank you for your willingness to participate in this survey.

In which standard setting meeting did you participate?

☐ Science
☐ Social Studies

Indicate your response by checking the appropriate box.

		Do not support	Support with some reservation	Moderately support	Strongly support	(Other)
1. To what degree do you support the recommended cut score for "Moderate Command?"		☐	☐	☐	☐	
	Science	0%	14%	43%	36%	7%
	Social Studies	0%	7%	50%	43%	
If you cannot support, please explain why not:						
2. To what degree do you support the recommended cut score for "Strong Command?"		☐	☐	☐	☐	
	Science	14%	14%	21%	50%	
	Social Studies	0%	14%	14%	71%	
If you cannot support, please explain why not:						
3. To what degree do you support the recommended cut score for "Distinguished Command?"		☐	☐	☐	☐	
	Science	0%	0%	50%	50%	
	Social Studies	0%	7%	21%	71%	
If you cannot support, please explain why not:						

	Way too low	A bit low	Appropriate	A bit high	Way too high	(Other)
4. The recommended cut score for "Moderate Command" is:	☐	☐	☐	☐	☐	
Science	0%	29%	43%	29%	0%	
Social Studies	0%	7%	50%	43%	0%	
5. The recommended cut score for "Strong Command" is:	☐	☐	☐	☐	☐	
Science	0%	7%	57%	7%	29%	
Social Studies	0%	14%	71%	7%	7%	
6. The recommended cut score for "Distinguished Command" is:	☐	☐	☐	☐	☐	
Science	0%	7%	64%	29%	0%	
Social Studies	0%	21%	71%	7%	0%	

	Strongly Disagree	Disagree	Agree	Strongly Agree	(Other)
7. The Bookmark Method was explained clearly by the group facilitator.	☐	☐	☐	☐	
Science	0%	0%	7%	93%	
Social Studies	0%	0%	36%	64%	
8. I had a solid understanding of what the test was intended to measure.	☐	☐	☐	☐	
Science	0%	0%	43%	57%	
Social Studies	0%	0%	14%	86%	
9. I could clearly distinguish between performance levels.	☐	☐	☐	☐	
Science	0%	0%	79%	21%	
Social Studies	0%	0%	64%	36%	
10. After the first round of recommendations, I felt comfortable with the standard setting procedure.	☐	☐	☐	☐	
Science	0%	0%	50%	50%	
Social Studies	0%	0%	43%	57%	
11. I found the feedback on the comparison of all panelists' recommendations to be useful in standard setting.	☐	☐	☐	☐	
Science	0%	0%	21%	79%	
Social Studies	0%	7%	50%	43%	
12. I found the p-value information to be useful in standard setting.	☐	☐	☐	☐	
Science	0%	0%	57%	43%	
Social Studies	0%	7%	50%	43%	
13. I found the feedback on the percentage of the students tested that would be classified at each performance level to be useful in standard setting.	☐	☐	☐	☐	
Science	0%	21%	50%	29%	
Social Studies	0%	21%	43%	36%	
14. Table and group discussions were open and honest.	☐	☐	☐	☐	
Science	0%	0%	0%	100%	
Social Studies	0%	0%	36%	64%	
15. I believe that my opinions were considered and valued by my group.	☐	☐	☐	☐	
Science	0%	0%	0%	100%	
Social Studies	0%	0%	43%	57%	
16. The facilitator led the group through the standard setting process without imposing ideas about where cut scores should be.	☐	☐	☐	☐	
Science	0%	0%	7%	93%	
Social Studies	0%	0%	29%	71%	
17. I am confident that the final cut score recommendations reflect the performance level descriptors associated with CMAS.	☐	☐	☐	☐	
Science	0%	14%	43%	36%	7%
Social Studies	0%	7%	36%	57%	
18. I am confident that the final cut score recommendations reflect high expectations consistent with the Colorado Academic Standards.	☐	☐	☐	☐	
Science	0%	14%	43%	43%	
Social Studies	0%	7%	36%	57%	

APPENDIX B: SAMPLE CMAS SCORE REPORTS

Science Performance Level Descriptions

Students demonstrate mastery of science concepts and 21st century skills aligned to the Colorado Academic Standards at various performance levels. The performance level descriptors are organized in a manner that assumes students demonstrating higher levels of command have mastered the concepts and skills within the lower levels. For example, a student at moderate command also masters the concepts and skills of limited command.

At Distinguished Command, a student typically can

- evaluate and provide feedback on scientific evidence and reasoning about the separation of mixtures and how separation affects the total weight/mass;
- develop hypotheses about why similarities and differences exist between the body systems and parts of humans, plants, and animals;
- evaluate scientific claims about natural resources, in terms of reasonability and validity; and
- assess and provide feedback, through reasoning based on evidence, on scientific explanations about weather and factors that change Earth's surface.

At Strong Command, a student typically can

- explain why certain procedures that are used to separate simple mixtures work and discuss any unexpected results;
- evaluate evidence and models of the structure and functions of human, plant, and animal organs and organ systems;
- investigate and generate evidence that human systems are interdependent;
- analyze and interpret data to explore concerns associated with natural resources; and
- formulate testable questions and scientific explanations around weather and factors that change Earth's surface.

At Moderate Command, a student typically can

- discuss how the mass/weight of a mixture is a sum of its parts and design a procedure to separate simple mixtures based on physical properties;
- create models of human, plant, and animal organ systems, and compare and contrast similarities and differences between the organisms;
- explore and describe the origins and usage of natural resources in Colorado; and
- interpret data about Earth, including weather and changes to Earth's surface.

At Limited Command, a student typically can

- select appropriate tools and follow procedures to separate simple mixtures;
- identify how humans, plants, and animals address basic survival needs;
- identify the functions of human body systems;
- distinguish between renewable and nonrenewable resources; and
- use appropriate tools and resources to gather data regarding weather conditions and Earth processes.

For more information about the standards included in this assessment, please visit the Colorado Department of Education's website at
www.cde.state.co.us/standardsandinstruction

Student Performance Report

Colorado Measures of Academic Success

Student: **FIRSTNAME25 B. LASTNAME25**
SASID: **0505880002** Birthdate: **02/02/2006**
School: **SAMPLE1 SCHOOL (0011)**
District: **SAMPLE1 DISTRICT (7203)**

Spring 2015

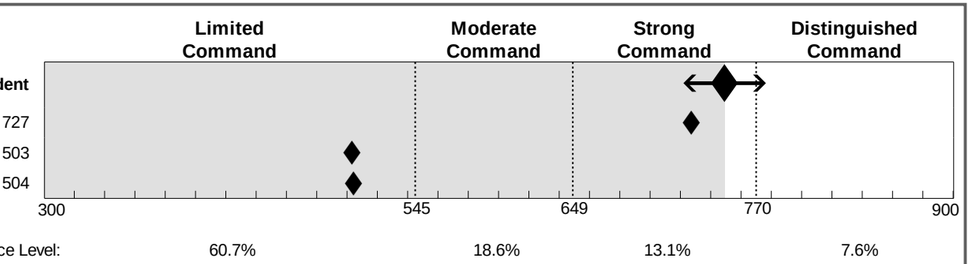
Science — Grade 5

This score report provides information about your student's performance on the Colorado Measures of Academic Success (CMAS) Science Assessment.

- Your student's performance is represented by a scale score. Scores are placed on a scale so that student performance can be compared across years.
- School, district, and state averages are provided so that you can compare your student's performance to the performance of others. The percentage of students in each performance level across the state is reported below the graph.
- Scores are represented by diamonds. The arrows around the student's diamond show the range of scores that your student would likely receive if the assessment was taken multiple times.
- Dotted lines show where the range of scores is divided into performance levels. Descriptions of the performance levels can be found at the end of this report.

Science

Your Student's Score
749
Strong Command



Percent of CO students by Performance Level: 60.7% | 18.6% | 13.1% | 7.6%

The Colorado Academic Standards include expectations for student performance. Your student demonstrates a strong command of 5th grade level concepts and skills in science.

Subscale Performance

- The shaded areas in the table below represent approximately 70% of student scores across the state.
- Scores outside of the shaded area indicate a potential weakness or strength compared to the state.

Reporting Category Description	Subscale Score		Potential Relative Weakness (300) / Typical / Potential Relative Strength (900)
Physical Science			471 – 722
Students know and understand common properties, forms, and changes in matter and energy.	**774**	**Student**	
	831	School	
	537	District	
Life Science			485 – 717
Students know and understand the characteristics and structure of living things, the processes of life, and how living things interact with each other and their environment.	**736**	**Student**	
	652	School	
	488	District	
Earth Systems Science			483 – 718
Students know and understand the processes and interactions of Earth's systems and the structure and dynamics of Earth and other objects in space.	**739**	**Student**	
	695	School	
	503	District	
Scientific Investigation and the Nature of Science			482 – 717
Students understand the processes of scientific investigation and design, conducting and evaluating, as well as communicating about, such investigations. Students understand that the nature of science involves a particular way of building knowledge and making meaning of the natural world.	**744**	**Student**	
	756	School	
	558	District	

Purpose
This report describes your student's mastery of the Colorado Academic Standards in Science.

For more information on the CMAS assessment program, visit:
www.cde.state.co.us/assessment

Colorado Measures of Academic Success

Science

Grade 5

Performance by Prepared Graduate Competencies (PGCs) and Grade Level Expectations (GLEs)

- Within each standard, PGCs are identified. PGCs represent the concepts and skills that students need to master in order to be college and career ready.
- GLEs are grade-specific expectations that indicate a student is making progress toward the PGCs.
- The figure below shows the percentage of items that your student answered correctly for each GLE represented in the grade. If there is more than one GLE for a PGC, the percentage of items your student answered correctly by PGC is also provided.

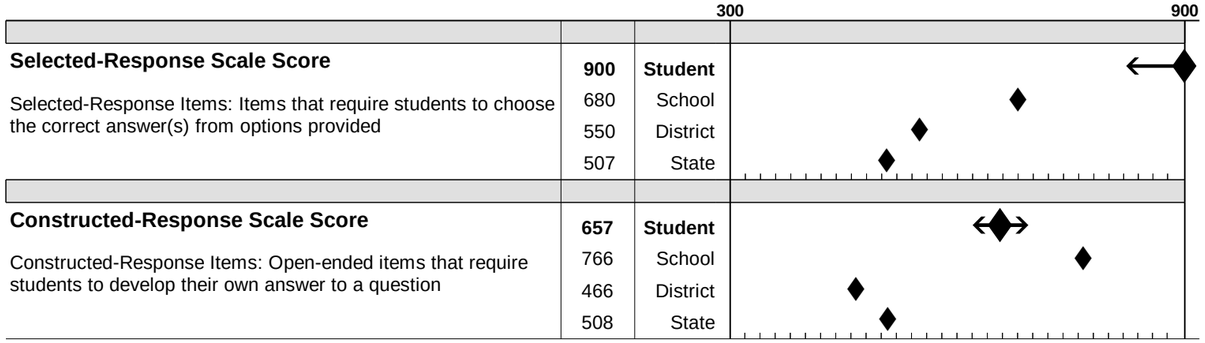
Student's performance
District average
State average

Standard, PGC, and GLE		Points Possible	Percent Correct* 0% 25% 50% 75% 100%
Physical Science			
PGC 1	Apply an understanding of atomic and molecular structure to explain the properties of matter, and predict outcomes of chemical and nuclear reactions		
GLE 1:	Mixtures of matter can be separated regardless of how they were created; all weight and mass of the mixture are the same as the sum of weight and mass of its parts	20	70%
Life Science			
PGC 1:	Analyze how various organisms grow, develop, and differentiate during their lifetimes based on an interplay between genetics and their environment		
GLE 1:	All organisms have structures and systems with separate functions	13	77%
PGC 2:	Analyze the relationship between structure and function in living systems at a variety of organizational levels, and recognize living systems' dependence on natural selection		
GLE 2:	Human body systems have basic structures, functions, and needs	17	76%
Earth Systems Science			
PGC 1:	Describe how humans are dependent on the diversity of resources provided by Earth and Sun		
GLE 1:	Earth and sun provide a diversity of renewable and nonrenewable resources	10	80%
PGC 2:	Evaluate evidence that Earth's geosphere, atmosphere, hydrosphere, and biosphere interact as a complex system	20	75%
GLE 2:	Earth's surface changes constantly through a variety of processes and forces	11	73%
GLE 3:	Weather conditions change because of the uneven heating of Earth's surface by the Sun's energy. Weather changes are measured by differences in temperature, air pressure, wind, and water in the atmosphere and type of precipitation	9	78%

*****Percent correct scores cannot be compared across years because individual items change from year to year. They also cannot be compared across PGCs because the number of items and the difficulty of items may not be the same.

Performance by Item Type

CMAS assessments are made up of selected-response and constructed-response items. The figure below shows the student's scale score for each item type in relation to school, district, and state averages.



Content Standards Roster

Colorado Measures of Academic Success

Spring 2015

School: **SAMPLE1 SCHOOL (0011)**

District: **SAMPLE1 DISTRICT (7203)**

Science

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 8

Purpose: This report presents each student's performance on the overall test, content standards, prepared graduate competencies and grade level expectations for your school or district.

Performance Levels (PL)	Scale Score Ranges
Distinguished Command	785-900
Strong Command	652-784
Moderate Command	556-651
Limited Command	300-555

● = Potential Relative Strength (PRS)
◒ = Typical
○ = Potential Relative Weakness (PRW)

Content Standards Performance School Summary

	Physical Science			Life Science			Earth Systems Science			Scientific Investigations / Nature of Science		
	●	◒	○	●	◒	○	●	◒	○	●	◒	○
# of Students in school	0	12	0	0	12	0	2	10	0	0	9	3
% of Students in school	0%	100%	0%	0%	100%	0%	17%	83%	0%	0%	75%	25%

STUDENT NAME	Overall Performance Level	Overall Scale Score	SEM Range	Content Standard Scale Score (SS) and Performance Indicator (PI)							
				SS	PI	SS	PI	SS	PI	SS	PI
State Average:		519		513		511		520		503	
District Average:		516		519		517		513		490	
School Average:		617		546		615		652		516	
1 LASTNAME06, FIRSTNAME06 F.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
2 LASTNAME07, FIRSTNAME07 J.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
3 LASTNAME08, FIRSTNAME08 H.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
4 LASTNAME09, FIRSTNAME09 Q.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
5 LASTNAME10, FIRSTNAME10 P.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
6 LASTNAME11, FIRSTNAME11 C.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
7 LASTNAME12, FIRSTNAME12 M.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
8 LASTNAME13, FIRSTNAME13 L.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
9 LASTNAME14, FIRSTNAME14 R.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
10 LASTNAME15, FIRSTNAME15 G.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
11 LASTNAME16, FIRSTNAME16 E.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
12 LASTNAME17, FIRSTNAME17 K.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
13 LASTNAME18, FIRSTNAME18 O.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
14 LASTNAME19, FIRSTNAME19 N.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
15 LASTNAME20, FIRSTNAME20 B.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
16 LASTNAME21, FIRSTNAME21 A.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●

Note: Students with no scores are not included in summary calculations.

Content Standards Roster

Colorado Measures of Academic Success — Spring 2015

School: **SAMPLE1 SCHOOL (0011)**
District: **SAMPLE1 DISTRICT (7203)**

Science — Grade 8

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report presents each student's performance on the prepared graduate competencies and grade level expectations for your school or district. Percent correct for each GLE is presented. If there is more than one GLE within a PGC then percent correct by PGC is also provided.

		Prepared Graduate Competencies (PGC) and Grade Level Expectations (GLE) Performance												
		Physical Science					Life Science		Earth Systems Science					
		Points Possible												
		7	15	8	7	7	13	11	13	7	6	14	7	7
		PGC1 GLE1	PGC2	GLE2	GLE4	PGC3 GLE3	PGC1 GLE1	PGC2 GLE2	PGC1	GLE1	GLE2	PGC2	GLE3	GLE4
	State Average Form A:	35%	39%	38%	39%	35%	30%	36%	35%	36%	33%	40%	41%	38%
	District Average Form A:	42%	40%	40%	40%	36%	33%	36%	34%	36%	31%	39%	45%	34%
	School Average Form A:	69%	42%	52%	33%	36%	46%	42%	50%	57%	42%	67%	51%	84%
STUDENT NAME	State Average Form B:	49%	47%	52%	43%	48%	51%	37%	51%	47%	57%	46%	51%	41%
1 LASTNAME06, FIRSTNAME06 F.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
2 LASTNAME07, FIRSTNAME07 J.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
3 LASTNAME08, FIRSTNAME08 H.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
4 LASTNAME09, FIRSTNAME09 Q.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
5 LASTNAME10, FIRSTNAME10 P.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
6 LASTNAME11, FIRSTNAME11 C.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
7 LASTNAME12, FIRSTNAME12 M.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
8 LASTNAME13, FIRSTNAME13 L.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
9 LASTNAME14, FIRSTNAME14 R.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
10 LASTNAME15, FIRSTNAME15 G.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
11 LASTNAME16, FIRSTNAME16 E.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
12 LASTNAME17, FIRSTNAME17 K.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
13 LASTNAME18, FIRSTNAME18 O.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
14 LASTNAME19, FIRSTNAME19 N.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
15 LASTNAME20, FIRSTNAME20 B.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
16 LASTNAME21, FIRSTNAME21 A.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%

Note: Students with no scores are not included in summary calculations.

Content Standards Roster

Colorado Measures of Academic Success — Spring 2015

School: **SAMPLE1 SCHOOL (0011)**
District: **SAMPLE1 DISTRICT (7203)**

Science — Grade 8

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report presents each student's performance on the overall test, content standards, prepared graduate competencies and grade level expectations for your school or district.

Performance Levels (PL)	Scale Score Ranges
Distinguished Command	785-900
Strong Command	652-784
Moderate Command	556-651
Limited Command	300-555

● = Potential Relative Strength (PRS)
◒ = Typical
○ = Potential Relative Weakness (PRW)

Content Standards Performance School Summary

	Physical Science			Life Science			Earth Systems Science			Scientific Investigations / Nature of Science		
	●	◒	○	●	◒	○	●	◒	○	●	◒	○
# of Students in school	0	12	0	0	12	0	2	10	0	0	9	3
% of Students in school	0%	100%	0%	0%	100%	0%	17%	83%	0%	0%	75%	25%

STUDENT NAME	Overall Performance Level	Overall Scale Score	SEM Range	Content Standard Scale Score (SS) and Performance Indicator (PI)							
				SS	PI	SS	PI	SS	PI	SS	PI
State Average:		519		513		511		520		503	
District Average:		516		519		517		513		490	
School Average:		617		546		615		652		516	
17 LASTNAME22, FIRSTNAME22 I.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
18 LASTNAME23, FIRSTNAME23 D.	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
19 LASTNAME30, FIRSTNAME30 Z.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
20 LASTNAME31, FIRSTNAME31	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
21 LASTNAME32, FIRSTNAME32	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●
22 LASTNAME33, FIRSTNAME33	Distinguished Command	790	760-820	801	●	821	●	749	●	788	●
23 LASTNAME34, FIRSTNAME34 Y.	Distinguished Command	807	775-839	805	●	798	●	824	●	754	●

Note: Students with no scores are not included in summary calculations.

Content Standards Roster

Colorado Measures of Academic Success

Spring 2015

School: **SAMPLE1 SCHOOL (0011)**

District: **SAMPLE1 DISTRICT (7203)**

Science

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 8

Purpose: This report presents each student's performance on the prepared graduate competencies and grade level expectations for your school or district. Percent correct for each GLE is presented. If there is more than one GLE within a PGC then percent correct by PGC is also provided.

STUDENT NAME		Prepared Graduate Competencies (PGC) and Grade Level Expectations (GLE) Performance												
		Physical Science					Life Science		Earth Systems Science					
		Points Possible												
		7	15	8	7	7	13	11	13	7	6	14	7	7
		PGC1 GLE1	PGC2	GLE2	GLE4	PGC3 GLE3	PGC1 GLE1	PGC2 GLE2	PGC1	GLE1	GLE2	PGC2	GLE3	GLE4
	State Average Form A:	35%	39%	38%	39%	35%	30%	36%	35%	36%	33%	40%	41%	38%
	District Average Form A:	42%	40%	40%	40%	36%	33%	36%	34%	36%	31%	39%	45%	34%
	School Average Form A:	69%	42%	52%	33%	36%	46%	42%	50%	57%	42%	67%	51%	84%
	State Average Form B:	49%	47%	52%	43%	48%	51%	37%	51%	47%	57%	46%	51%	41%
17 LASTNAME22, FIRSTNAME22 I.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
18 LASTNAME23, FIRSTNAME23 D.	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
19 LASTNAME30, FIRSTNAME30 Z.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
20 LASTNAME31, FIRSTNAME31	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
21 LASTNAME32, FIRSTNAME32	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%
22 LASTNAME33, FIRSTNAME33	Form A	86%	86%	86%	86%	86%	85%	91%	77%	86%	67%	86%	86%	86%
23 LASTNAME34, FIRSTNAME34 Y.	Form A	57%	93%	86%	100%	100%	77%	91%	85%	86%	83%	93%	100%	86%

Note: Students with no scores are not included in summary calculations.

District Performance Level Summary

Colorado Measures of Academic Success

Spring 2015

District: **SAMPLE1 DISTRICT (7203)**

Science

Grade 5

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report describes group achievement in terms of performance levels.

	Number of Valid Scores	Average Scale Score	Performance Levels								Strong and Distinguished		No Scores Reported	Total Number of Students
			Limited Command		Moderate Command		Strong Command		Distinguished Command					
			#	%	#	%	#	%	#	%	#	%	#	#
State	**1,458**	**504**	**885**	**60.7%**	**271**	**18.6%**	**191**	**13.1%**	**111**	**7.6%**	**302**	**20.7%**	**364**	**1,822**
District	486	503	261	53.7%	131	27.0%	72	14.8%	22	4.5%	94	19.3%	144	630
Gender														
Female	240	501	128	53.3%	64	26.7%	39	16.3%	9	3.8%	48	20.0%	63	303
Male	246	506	133	54.1%	67	27.2%	33	13.4%	13	5.3%	46	18.7%	81	327
Ethnicity/Race														
Hispanic or Latino	196	489	112	57.1%	47	24.0%	32	16.3%	5	2.6%	37	18.9%	70	266
American Indian or Alaska Native	13	587	4	30.8%	7	53.8%	1	7.7%	1	7.7%	2	15.4%	2	15
Asian	16	547	7	43.8%	6	37.5%	3	18.8%	0	0.0%	3	18.8%	3	19
Black or African-American	12	575	3	25.0%	7	58.3%	1	8.3%	1	8.3%	2	16.7%	2	14
White	18	582	5	27.8%	8	44.4%	3	16.7%	2	11.1%	5	27.8%	2	20
Native Hawaiian or Other Pacific Islander	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Two or more races	209	494	121	57.9%	45	21.5%	32	15.3%	11	5.3%	43	20.6%	62	271
Not Indicated	22	534	9	40.9%	11	50.0%	0	0.0%	2	9.1%	2	9.1%	3	25
Language Background														
English	218	504	115	52.8%	58	26.6%	34	15.6%	11	5.0%	45	20.6%	71	289
Spanish	137	502	71	51.8%	36	26.3%	24	17.5%	6	4.4%	30	21.9%	37	174
Other	131	503	75	57.3%	37	28.2%	14	10.7%	5	3.8%	19	14.5%	36	167
Not Indicated	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Language Proficiency														
Not Applicable	64	544	27	42.2%	21	32.8%	12	18.8%	4	6.3%	16	25.0%	31	95
NEP	90	491	51	56.7%	26	28.9%	11	12.2%	2	2.2%	13	14.4%	20	110
LEP	79	465	51	64.6%	18	22.8%	10	12.7%	0	0.0%	10	12.7%	28	107
NEP and LEP	169	479	102	60.4%	44	26.0%	21	12.4%	2	1.2%	23	13.6%	48	217
FEP	88	532	38	43.2%	26	29.5%	17	19.3%	7	8.0%	24	27.3%	28	116
PHLOTE	71	501	37	52.1%	20	28.2%	12	16.9%	2	2.8%	14	19.7%	19	90
FELL	75	498	41	54.7%	18	24.0%	10	13.3%	6	8.0%	16	21.3%	18	93
Not in ELL Program	317	516	159	50.2%	87	27.4%	51	16.1%	20	6.3%	71	22.4%	96	413
Not Indicated	19	481	16	84.2%	2	10.5%	0	0.0%	1	5.3%	1	5.3%	0	19

District Performance Level Summary

Colorado Measures of Academic Success

Spring 2015

District: **SAMPLE1 DISTRICT (7203)**

Science

Grade 5

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report describes group achievement in terms of performance levels.

	Number of Valid Scores	Average Scale Score	Performance Levels								Strong and Distinguished		No Scores Reported	Total Number of Students
			Limited Command		Moderate Command		Strong Command		Distinguished Command					
			#	%	#	%	#	%	#	%	#	%	#	#
ELL Program - Bilingual														
No	63	476	37	58.7%	13	20.6%	11	17.5%	2	3.2%	13	20.6%	15	78
Yes	69	503	36	52.2%	17	24.6%	12	17.4%	4	5.8%	16	23.2%	23	92
Re-designated Monitored Y1	89	539	40	44.9%	24	27.0%	20	22.5%	5	5.6%	25	28.1%	25	114
Re-designated Monitored Y2	67	523	31	46.3%	21	31.3%	11	16.4%	4	6.0%	15	22.4%	25	92
Exited Y3	77	477	49	63.6%	19	24.7%	7	9.1%	2	2.6%	9	11.7%	33	110
Parent Choice	80	488	45	56.3%	22	27.5%	10	12.5%	3	3.8%	13	16.3%	23	103
Not Indicated	41	515	23	56.1%	15	36.6%	1	2.4%	2	4.9%	3	7.3%	0	41
ELL Program - ESL														
No	76	505	42	55.3%	20	26.3%	11	14.5%	3	3.9%	14	18.4%	16	92
Yes	91	503	47	51.6%	27	29.7%	15	16.5%	2	2.2%	17	18.7%	27	118
Re-designated Monitored Y1	78	493	41	52.6%	22	28.2%	10	12.8%	5	6.4%	15	19.2%	24	102
Re-designated Monitored Y2	62	490	36	58.1%	16	25.8%	8	12.9%	2	3.2%	10	16.1%	29	91
Exited Y3	74	495	41	55.4%	16	21.6%	13	17.6%	4	5.4%	17	23.0%	21	95
Parent Choice	67	533	32	47.8%	17	25.4%	12	17.9%	6	9.0%	18	26.9%	27	94
Not Indicated	38	507	22	57.9%	13	34.2%	3	7.9%	0	0.0%	3	7.9%	0	38
Primary Disabilities														
None	79	497	43	54.4%	26	32.9%	9	11.4%	1	1.3%	10	12.7%	15	94
Intellectual Disability	34	554	14	41.2%	9	26.5%	6	17.6%	5	14.7%	11	32.4%	10	44
Serious Emotional Disability	28	496	15	53.6%	8	28.6%	5	17.9%	0	0.0%	5	17.9%	6	34
Specific Learning Disability	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Hearing Impairment, including Deafness	64	525	32	50.0%	15	23.4%	11	17.2%	6	9.4%	17	26.6%	19	83
Visual Impairment, including Blindness	32	478	20	62.5%	8	25.0%	3	9.4%	1	3.1%	4	12.5%	10	42
Physical Disability	30	491	17	56.7%	8	26.7%	3	10.0%	2	6.7%	5	16.7%	9	39
Speech or Language Impairment	31	483	16	51.6%	10	32.3%	4	12.9%	1	3.2%	5	16.1%	14	45
Deaf-Blindness	36	494	20	55.6%	5	13.9%	10	27.8%	1	2.8%	11	30.6%	8	44
Multiple Disabilities	33	484	18	54.5%	11	33.3%	3	9.1%	1	3.0%	4	12.1%	9	42
Autism Spectrum Disorders	30	489	20	66.7%	4	13.3%	6	20.0%	0	0.0%	6	20.0%	9	39
Traumatic Brain Injury (TBI)	35	518	19	54.3%	9	25.7%	4	11.4%	3	8.6%	7	20.0%	18	53
Orthopedic Impairment	27	521	13	48.1%	10	37.0%	3	11.1%	1	3.7%	4	14.8%	8	35

District Performance Level Summary

Colorado Measures of Academic Success

Spring 2015

District: **SAMPLE1 DISTRICT (7203)**

Science

Grade 5

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report describes group achievement in terms of performance levels.

	Number of Valid Scores	Average Scale Score	Performance Levels								Strong and Distinguished		No Scores Reported	Total Number of Students
			Limited Command		Moderate Command		Strong Command		Distinguished Command					
			#	%	#	%	#	%	#	%	#	%	#	#
Other Health Impairment	27	495	14	51.9%	8	29.6%	5	18.5%	0	0.0%	5	18.5%	9	36
Economic Disadvantage														
Free Lunch Eligible	95	516	56	58.9%	26	27.4%	12	12.6%	1	1.1%	13	13.7%	0	95
Reduced Lunch Eligible	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Free/Reduced Lunch Eligible	95	516	56	58.9%	26	27.4%	12	12.6%	1	1.1%	13	13.7%	0	95
Not Eligible for Free/Reduced Lunch	391	500	205	52.4%	105	26.9%	60	15.3%	21	5.4%	81	20.7%	144	535
Gifted/Talented Designation														
No	92	511	45	48.9%	31	33.7%	14	15.2%	2	2.2%	16	17.4%	30	122
Language Arts	83	507	43	51.8%	23	27.7%	13	15.7%	4	4.8%	17	20.5%	30	113
Mathematics	95	495	60	63.2%	17	17.9%	11	11.6%	7	7.4%	18	18.9%	34	129
Both Languages Arts and Mathematics	104	494	57	54.8%	27	26.0%	15	14.4%	5	4.8%	20	19.2%	28	132
Other	93	505	46	49.5%	26	28.0%	17	18.3%	4	4.3%	21	22.6%	22	115
Not Indicated	19	532	10	52.6%	7	36.8%	2	10.5%	0	0.0%	2	10.5%	0	19
Accommodations														
None	261	499	131	50.2%	64	24.5%	50	19.2%	16	6.1%	66	25.3%	144	405
Paper Form (regular)	210	512	120	57.1%	67	31.9%	19	9.0%	4	1.9%	23	11.0%	0	210
Large Print	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Contracted Braille	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Uncontracted Braille	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
English Oral Script	93	505	57	61.3%	23	24.7%	11	11.8%	2	2.2%	13	14.0%	0	93
Spanish Oral Script	37	511	23	62.2%	12	32.4%	2	5.4%	0	0.0%	2	5.4%	0	37
Script for Translation	35	512	18	51.4%	14	40.0%	3	8.6%	0	0.0%	3	8.6%	0	35
Text to Speech	15	465	10	66.7%	0	0.0%	3	20.0%	2	13.3%	5	33.3%	0	15
Contrast Settings	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Spanish Audio	0	0	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0
Extended Time	104	514	59	56.7%	29	27.9%	14	13.5%	2	1.9%	16	15.4%	0	104
Human Scribe	101	510	60	59.4%	32	31.7%	6	5.9%	3	3.0%	9	8.9%	0	101
Low Vision Devices	103	505	63	61.2%	29	28.2%	8	7.8%	3	2.9%	11	10.7%	0	103
Multiple Breaks	102	510	58	56.9%	34	33.3%	10	9.8%	0	0.0%	10	9.8%	0	102
Student Spoken Responses - Native Language	105	520	57	54.3%	38	36.2%	8	7.6%	2	1.9%	10	9.5%	0	105

District Performance Level Summary

Colorado Measures of Academic Success

Spring 2015

District: **SAMPLE1 DISTRICT (7203)**

Science

CONFIDENTIAL - DO NOT DISTRIBUTE

Grade 5

Purpose: This report describes group achievement in terms of performance levels.

	Number of Valid Scores	Average Scale Score	Performance Levels								Strong and Distinguished		No Scores Reported	Total Number of Students
			Limited Command		Moderate Command		Strong Command		Distinguished Command					
			#	%	#	%	#	%	#	%	#	%	#	#
Student Written Responses - Other	114	507	67	58.8%	35	30.7%	9	7.9%	3	2.6%	12	10.5%	0	114
Student Written Responses - Spanish	104	520	57	54.8%	35	33.7%	10	9.6%	2	1.9%	12	11.5%	0	104
Homeless														
Yes and in Physical Custody	154	514	80	51.9%	40	26.0%	27	17.5%	7	4.5%	34	22.1%	58	212
Yes and Not in Physical Custody	138	489	78	56.5%	34	24.6%	19	13.8%	7	5.1%	26	18.8%	47	185
IEP														
No	268	498	151	56.3%	69	25.7%	37	13.8%	11	4.1%	48	17.9%	76	344
Yes	218	509	110	50.5%	62	28.4%	35	16.1%	11	5.0%	46	21.1%	68	286
504 Plan														
No	270	511	143	53.0%	79	29.3%	37	13.7%	11	4.1%	48	17.8%	68	338
Yes	216	494	118	54.6%	52	24.1%	35	16.2%	11	5.1%	46	21.3%	76	292
Title 1														
No	215	507	112	52.1%	56	26.0%	38	17.7%	9	4.2%	47	21.9%	76	291
Yes	209	494	115	55.0%	54	25.8%	29	13.9%	11	5.3%	40	19.1%	68	277
Not Indicated	62	520	34	54.8%	21	33.9%	5	8.1%	2	3.2%	7	11.3%	0	62
Migrant														
No	283	511	147	51.9%	83	29.3%	43	15.2%	10	3.5%	53	18.7%	75	358
Yes	203	493	114	56.2%	48	23.6%	29	14.3%	12	5.9%	41	20.2%	69	272
Immigrant														
No	268	508	136	50.7%	87	32.5%	33	12.3%	12	4.5%	45	16.8%	60	328
Yes	218	497	125	57.3%	44	20.2%	39	17.9%	10	4.6%	49	22.5%	84	302
Colorado Continuously														
No	193	496	109	56.5%	44	22.8%	29	15.0%	11	5.7%	40	20.7%	70	263
Yes	293	508	152	51.9%	87	29.7%	43	14.7%	11	3.8%	54	18.4%	74	367
Continuous in District														
No	249	500	130	52.2%	69	27.7%	38	15.3%	12	4.8%	50	20.1%	75	324
Yes	237	506	131	55.3%	62	26.2%	34	14.3%	10	4.2%	44	18.6%	69	306
Continuous in School														
No	207	495	116	56.0%	47	22.7%	33	15.9%	11	5.3%	44	21.3%	79	286
Yes	279	509	145	52.0%	84	30.1%	39	14.0%	11	3.9%	50	17.9%	65	344

District Performance Level Summary

Colorado Measures of Academic Success

Spring 2015

District: **SAMPLE1 DISTRICT (7203)**

Science

Grade 5

CONFIDENTIAL - DO NOT DISTRIBUTE

Purpose: This report describes group achievement in terms of performance levels.

	Number of Valid Scores	Average Scale Score	Performance Levels								Strong and Distinguished		No Scores Reported	Total Number of Students
			Limited Command		Moderate Command		Strong Command		Distinguished Command					
			#	%	#	%	#	%	#	%	#	%	#	#
October New to School														
No	288	510	158	54.9%	74	25.7%	41	14.2%	15	5.2%	56	19.4%	68	356
Yes	198	494	103	52.0%	57	28.8%	31	15.7%	7	3.5%	38	19.2%	76	274
Total Number of Students with No Scores Reported by Category														
Took Other Assessment*	0													
Interrupted and Not Completed	0													
Withdrew Before Completion*	0													
Test Refusal (Student)	0													
Non-approved Accommodation	0													
Misadministration	0													
District Education Services	0													
Part Time Public and Part Time Home School Student*	0													
State Use – Attempt not Met	144													
State Use 1 / Parent Refusal	0													
State Use 2	0													

* Not included in "Total Number Tested" and "No Scores Reported".

School Item Analysis Report

Colorado Measures of Academic Success

Spring 2014

School: [redacted]
District: [redacted]

Social Studies

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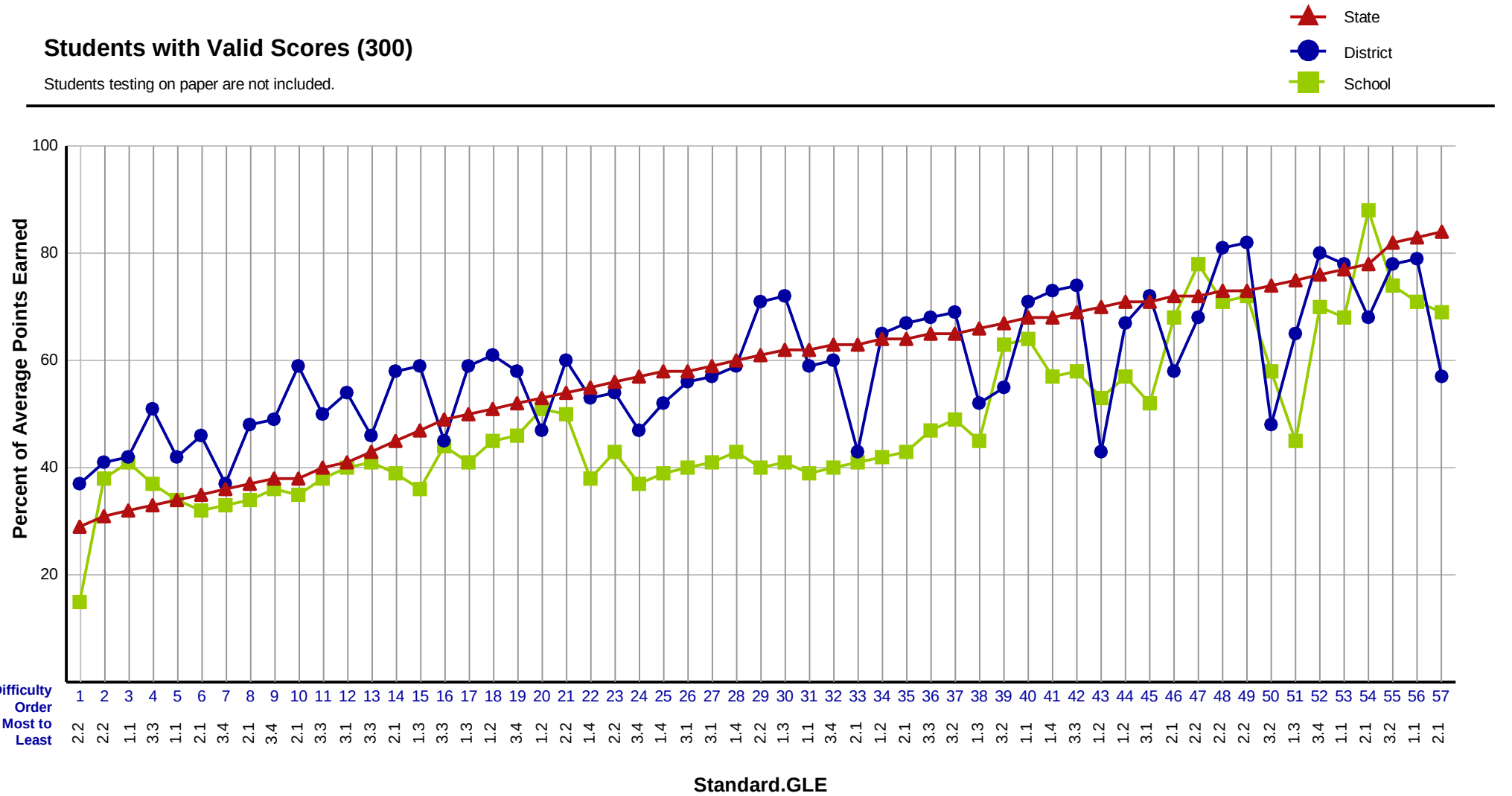
Grade 99

Students with Valid Scores (300)

Students testing on paper are not included.



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Item Analysis Report Detail

Colorado Measures of Academic Success — Spring 2014

This report shows the operational items for the given grade and subject sorted by difficulty.

Science

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Grade 8

Difficulty Order Most to Least	Standard.GLE	Section-Item Number	Standard	Prepared Graduate Competencies (PGCs)	Grade Level Expectations (GLEs)	Item Type Selected Response (SR) Constructed Respons (CR)
1	2.2	1-5	Life Science	PGC 2	GLE 2	SR
2	2.2	1-13	Life Science	PGC 2	GLE 2	CR-3
3	1.1	3-10	Physical Science	PGC 1	GLE 1	SR
4	3.3	3-22	Earth Systems Science	PGC 2	GLE 3	CR-2
5	1.1	3-20	Physical Science	PGC 1	GLE 1	SR
6	2.1	3-14	Life Science	PGC 1	GLE 1	SR
7	3.4	3-6	Earth Systems Science	PGC 2	GLE 4	SR
8	2.1	3-4	Life Science	PGC 1	GLE 1	SR
9	3.3	1-21	Earth Systems Science	PGC 2	GLE 3	SR
10	3.1	2-18	Earth Systems Science	PGC 1	GLE 1	CR-2
11	3.3	1-14	Earth Systems Science	PGC 2	GLE 3	SR
12	2.1	1-6	Life Science	PGC 1	GLE 1	CR-2
13	1.3	1-16	Physical Science	PGC 3	GLE 3	SR
14	3.3	1-24	Earth Systems Science	PGC 2	GLE 3	SR
15	3.1	2-4	Earth Systems Science	PGC 1	GLE 1	SR
16	2.2	2-12	Life Science	PGC 2	GLE 2	SR
17	1.3	2-21	Physical Science	PGC 3	GLE 3	SR
18	1.2	2-24	Physical Science	PGC 2	GLE 2	SR
19	3.4	3-9	Earth Systems Science	PGC 2	GLE 4	CR-2
20	1.2	3-15	Physical Science	PGC 2	GLE 2	SR
21	2.2	3-17	Life Science	PGC 2	GLE 2	CR-2
22	1.4	3-21	Physical Science	PGC 2	GLE 4	SR
23	2.2	3-12	Life Science	PGC 2	GLE 2	SR
24	3.4	3-7	Earth Systems Science	PGC 2	GLE 4	SR
25	1.4	2-22	Physical Science	PGC 2	GLE 4	CR-2
26	3.1	2-19	Earth Systems Science	PGC 1	GLE 1	CR-2
27	3.1	2-16	Earth Systems Science	PGC 1	GLE 1	SR
28	1.4	2-10	Physical Science	PGC 2	GLE 4	SR
29	2.2	1-23	Life Science	PGC 2	GLE 2	SR
30	1.3	1-18	Physical Science	PGC 3	GLE 3	CR-2
31	1.1	1-15	Physical Science	PGC 1	GLE 1	SR
32	3.4	1-11	Earth Systems Science	PGC 2	GLE 4	SR
33	2.1	1-8	Life Science	PGC 1	GLE 1	SR
34	1.2	1-4	Physical Science	PGC 2	GLE 2	SR
35	2.1	1-7	Life Science	PGC 1	GLE 1	SR
36	3.3	1-10	Earth Systems Science	PGC 2	GLE 3	SR
37	3.2	1-12	Earth Systems Science	PGC 1	GLE 2	SR
38	1.3	1-17	Physical Science	PGC 3	GLE 3	CR-2
39	3.2	1-20	Earth Systems Science	PGC 1	GLE 2	SR
40	1.1	1-22	Physical Science	PGC 1	GLE 1	CR-2
41	1.4	2-3	Physical Science	PGC 2	GLE 4	CR-2
42	3.3	2-11	Earth Systems Science	PGC 2	GLE 3	SR
43	1.2	2-13	Physical Science	PGC 2	GLE 2	CR-3
44	1.2	2-15	Physical Science	PGC 2	GLE 2	SR
45	3.1	2-17	Earth Systems Science	PGC 1	GLE 1	SR
46	2.1	2-23	Life Science	PGC 1	GLE 1	SR
47	2.2	3-19	Life Science	PGC 2	GLE 2	CR-2
48	2.2	3-18	Life Science	PGC 2	GLE 2	SR
49	2.2	3-16	Life Science	PGC 2	GLE 2	SR
50	3.2	3-13	Earth Systems Science	PGC 1	GLE 2	CR-3
51	1.3	3-5	Physical Science	PGC 3	GLE 3	SR
52	3.4	3-8	Earth Systems Science	PGC 2	GLE 4	CR-2
53	1.1	2-20	Physical Science	PGC 1	GLE 1	SR
54	2.1	2-14	Life Science	PGC 1	GLE 1	SR
55	3.2	2-5	Earth Systems Science	PGC 1	GLE 2	SR
56	1.1	1-19	Physical Science	PGC 1	GLE 1	SR
57	2.1	1-9	Life Science	PGC 1	GLE 1	CR-2

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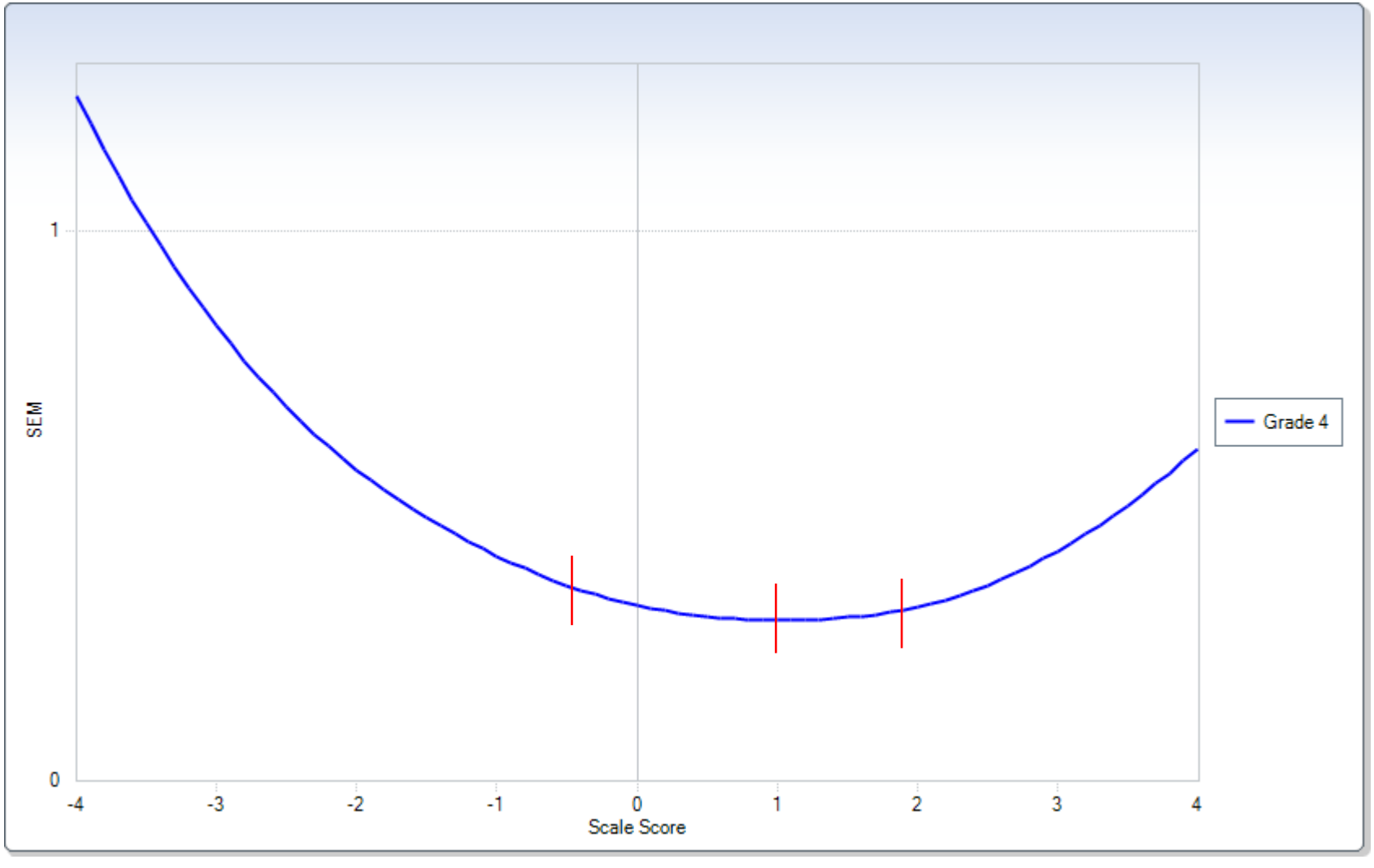
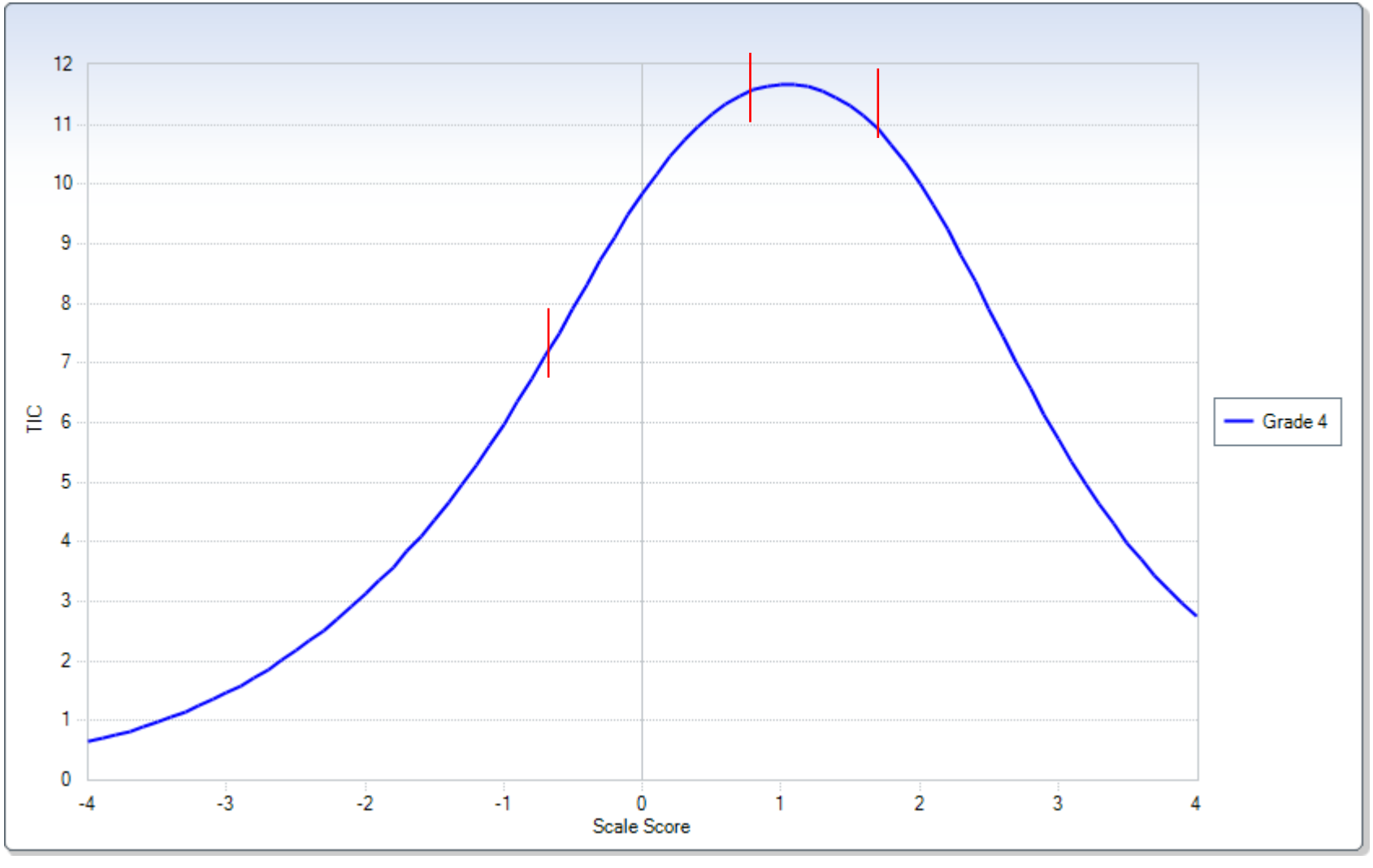
APPENDIX C: IRT CURVES

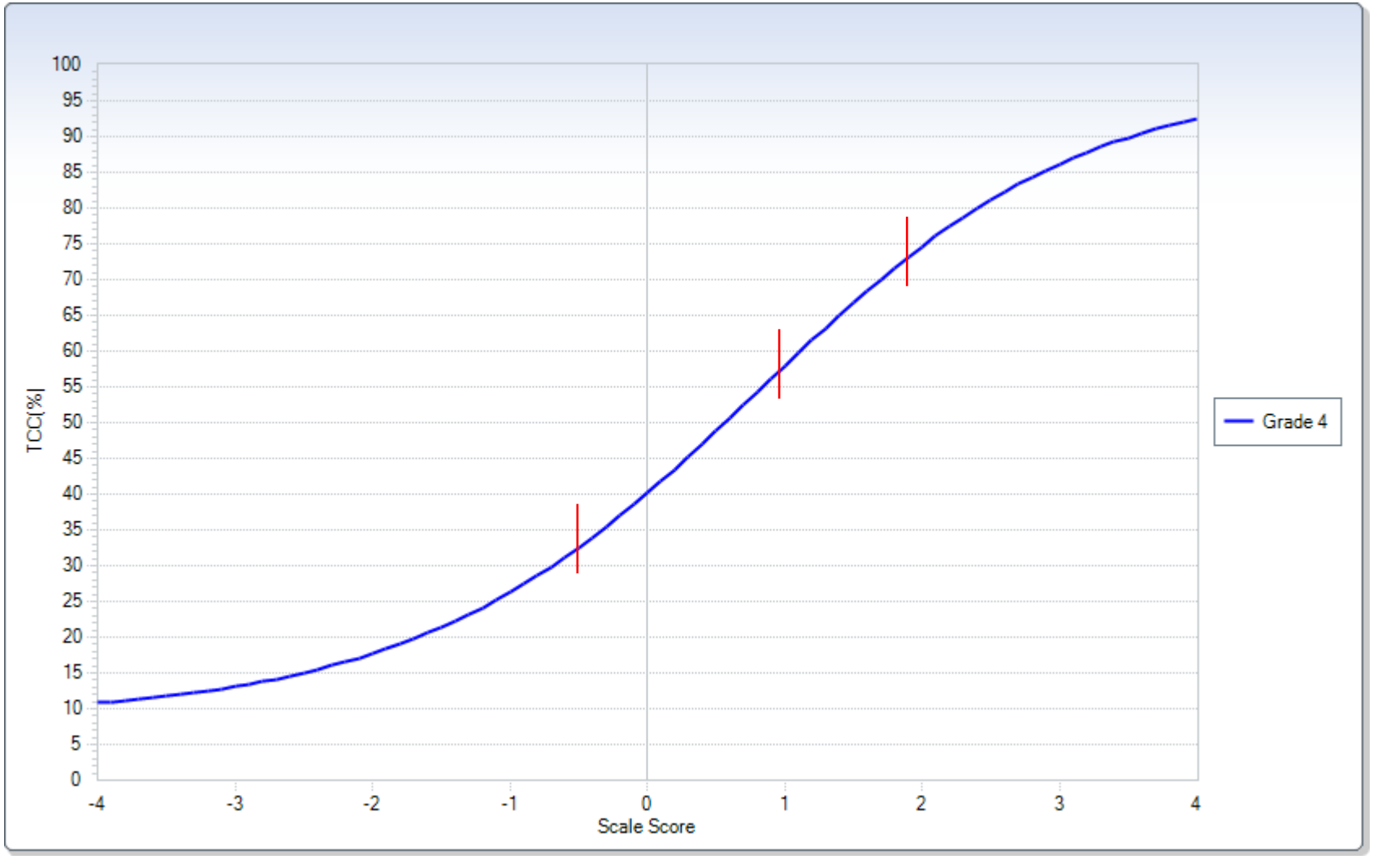
Test Summary Curves
Conditional Standard Error of Measurement Curves



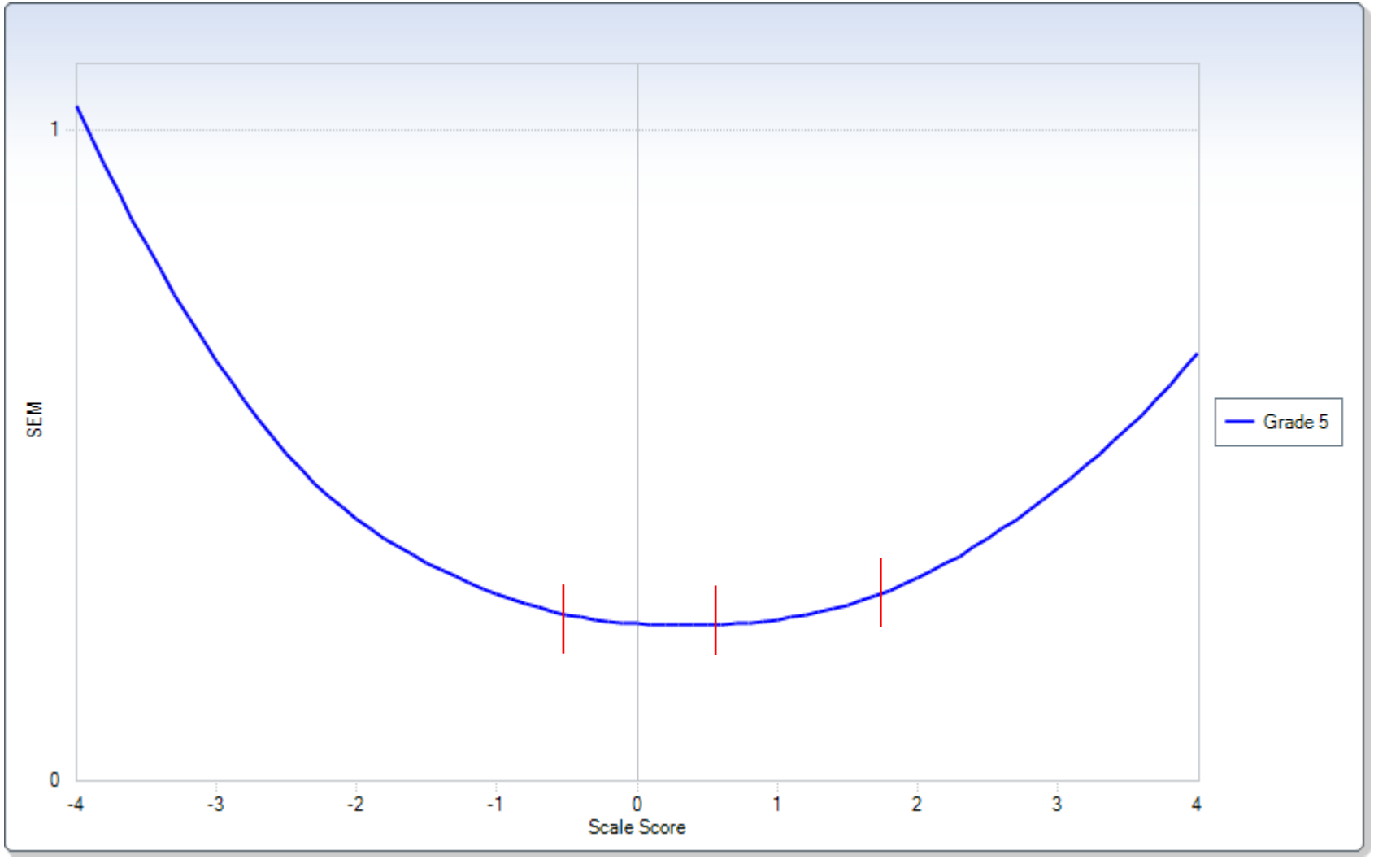
Test Summary Curves
Test Information Curves



Test Summary Curves
Test Characteristic Curves (Percent)



Test Summary Curves
Conditional Standard Error of Measurement Curves



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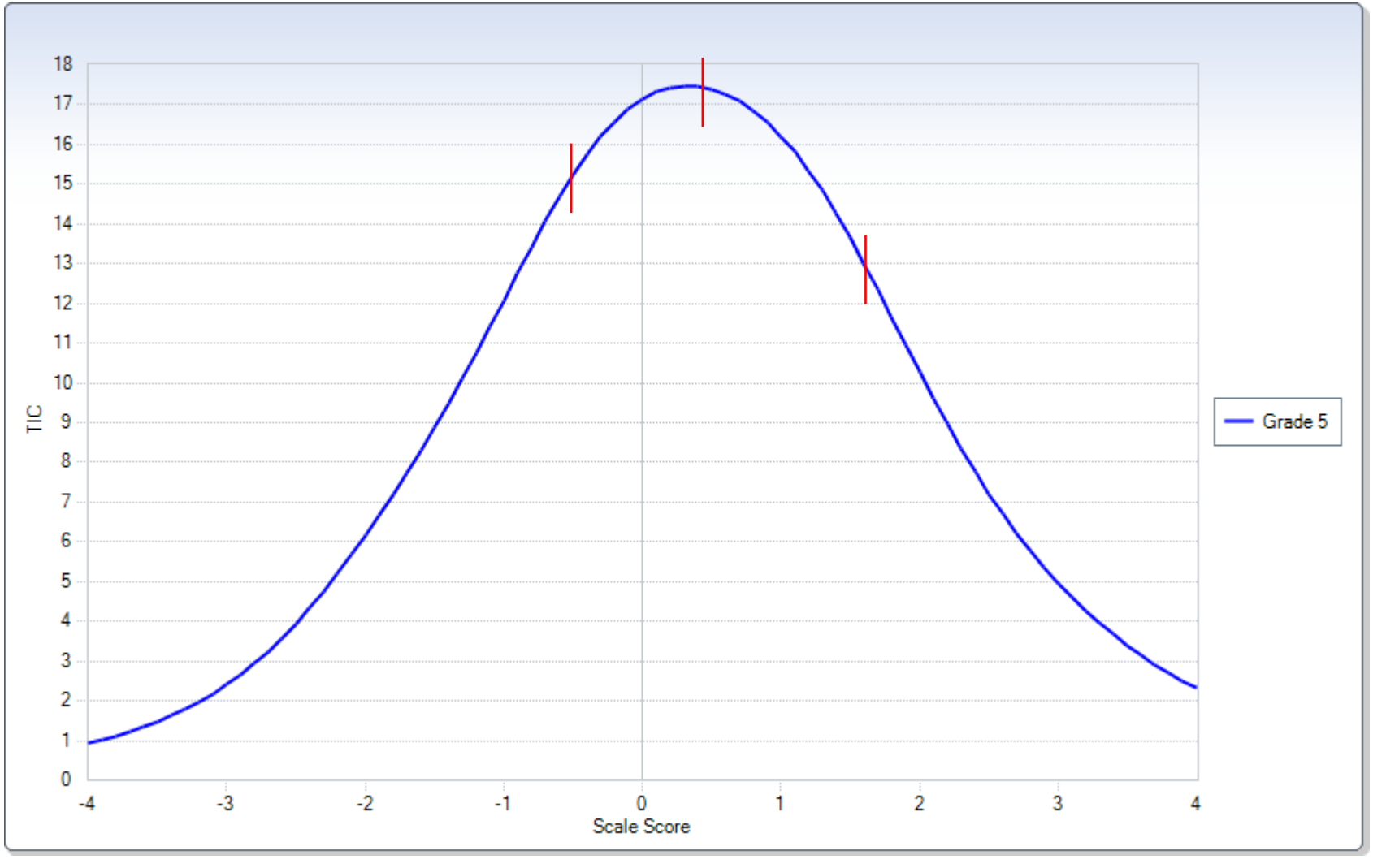
Test Information Curves



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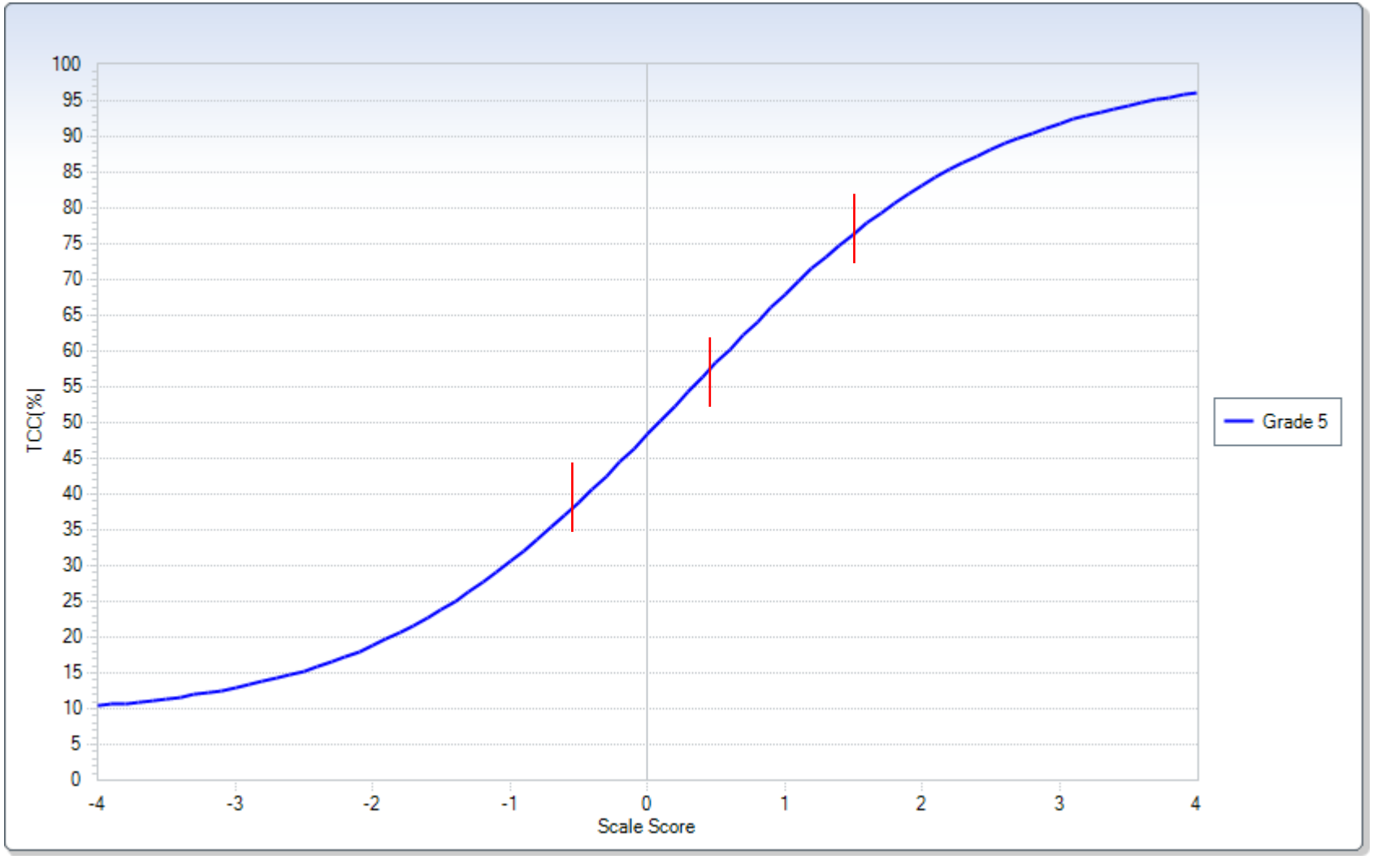
Test Characteristic Curves (Percent)



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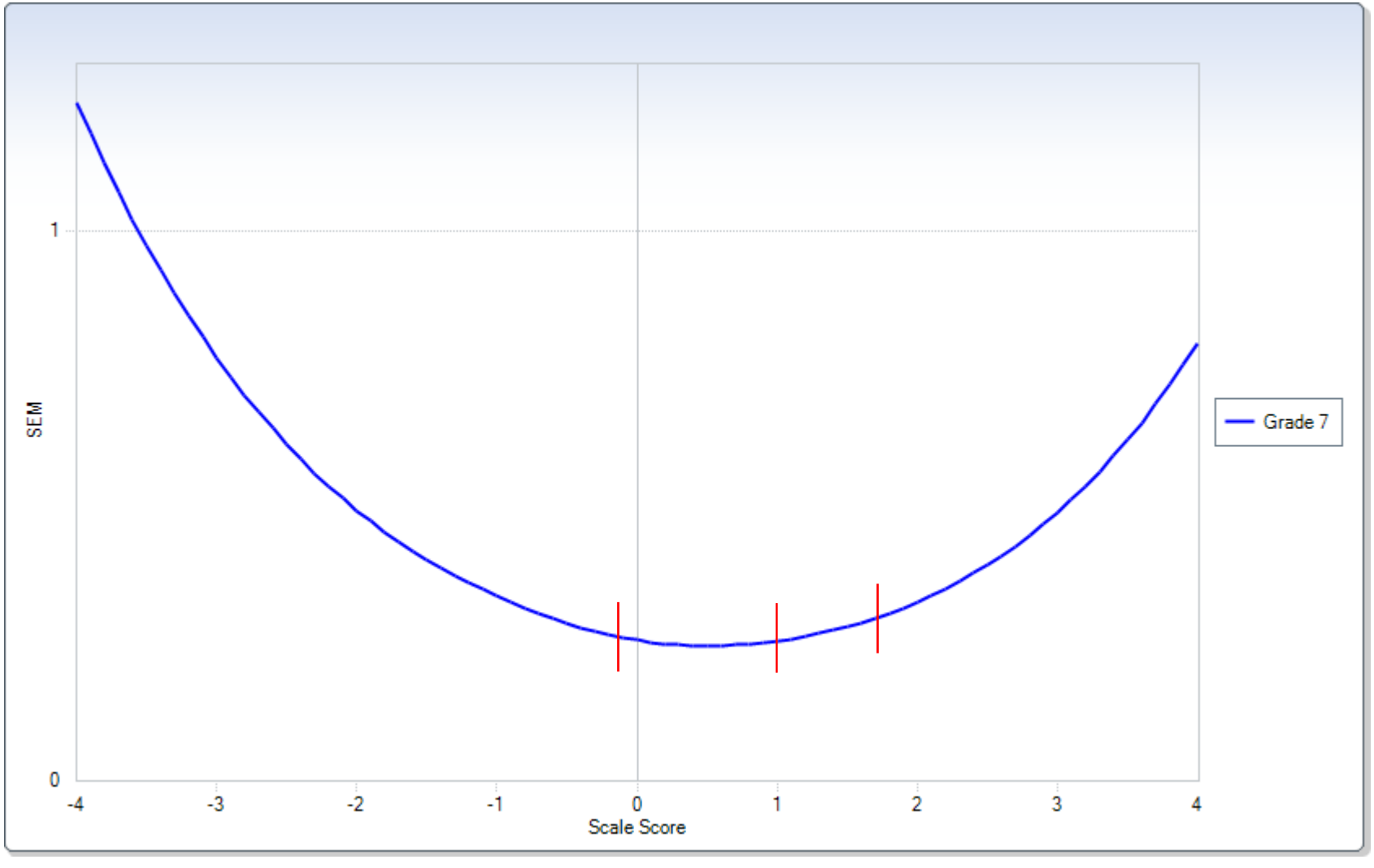
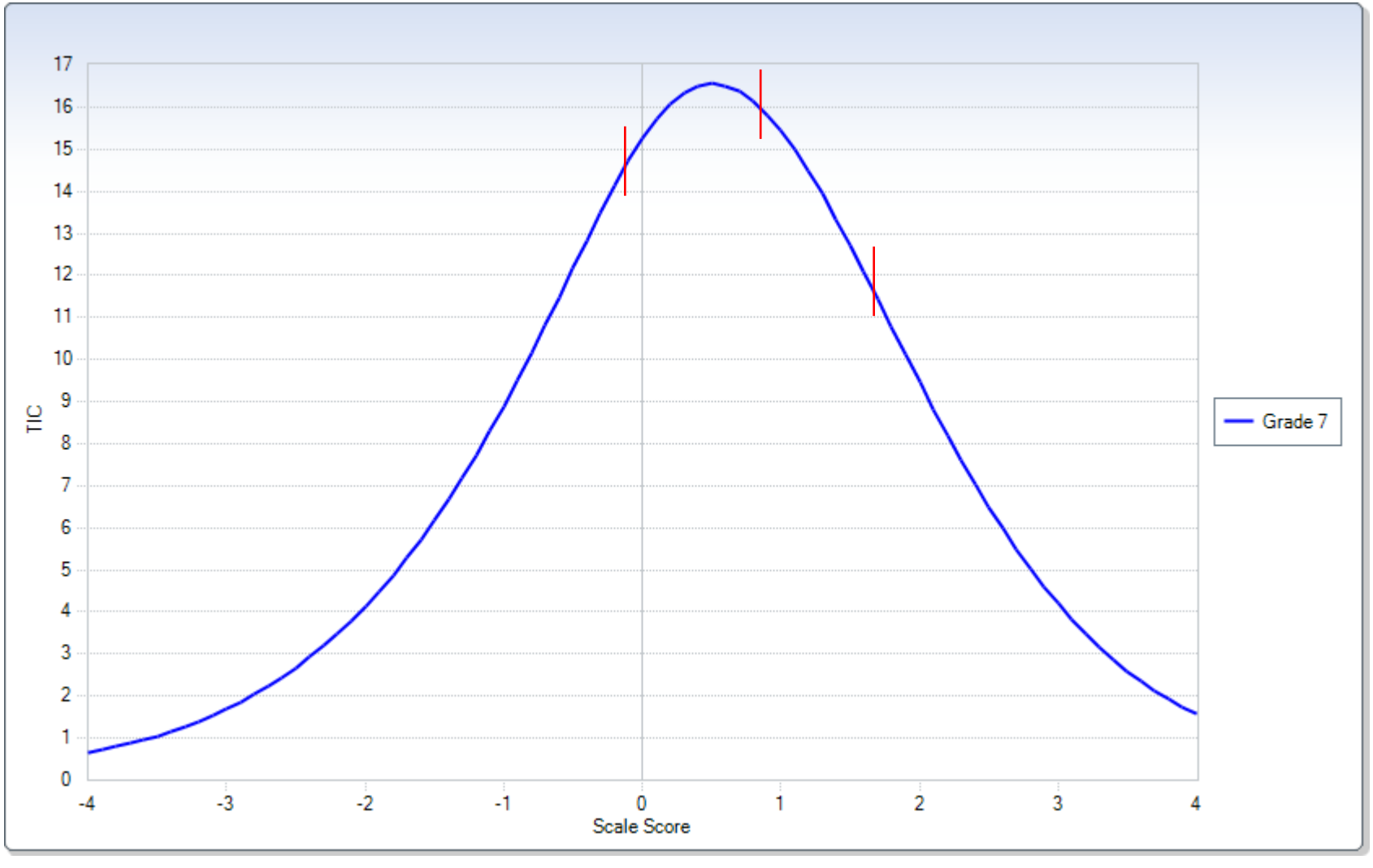
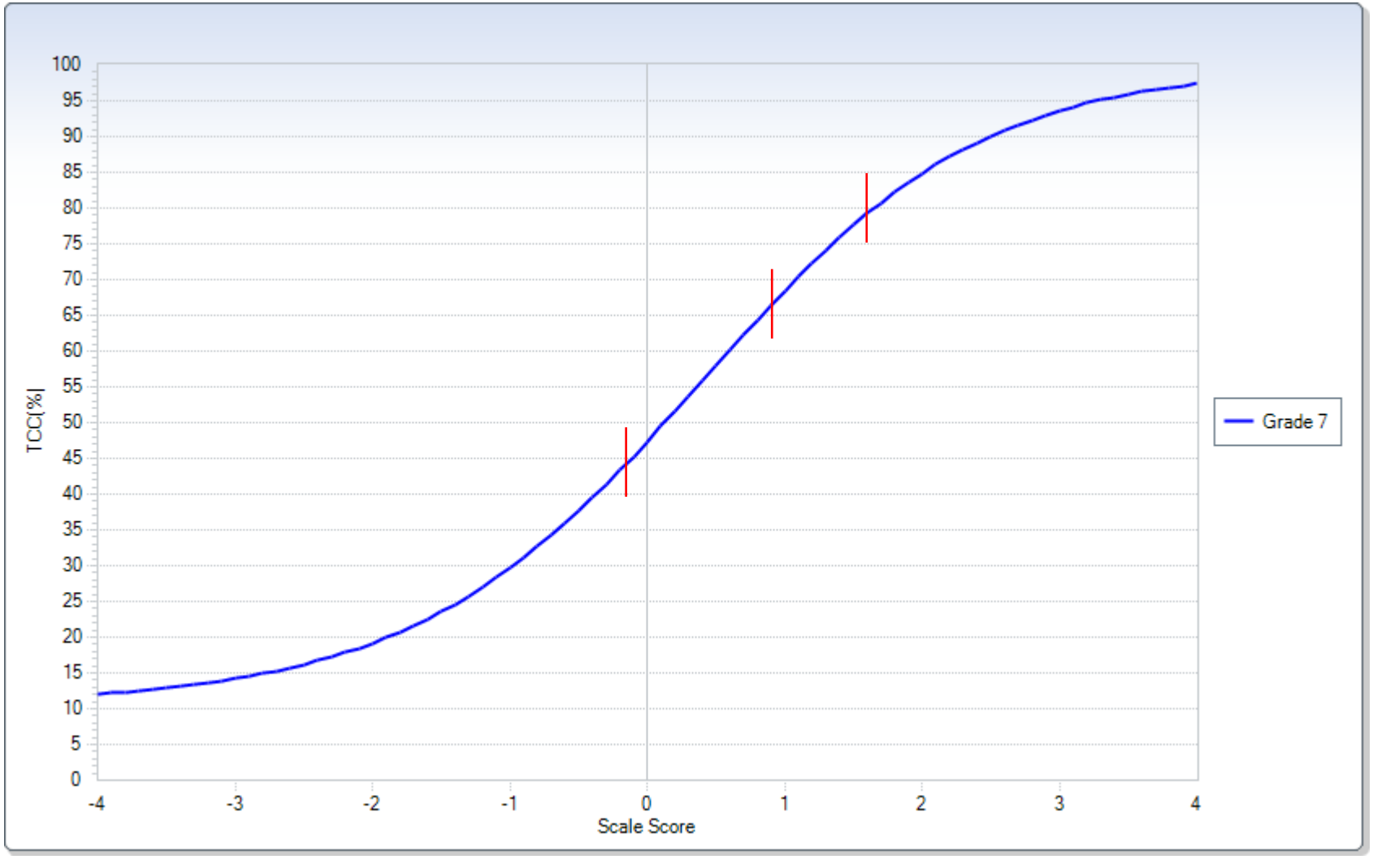
Conditional Standard Error of Measurement Curves



Test Summary Curves
Test Information Curves



Test Summary Curves
Test Characteristic Curves (Percent)



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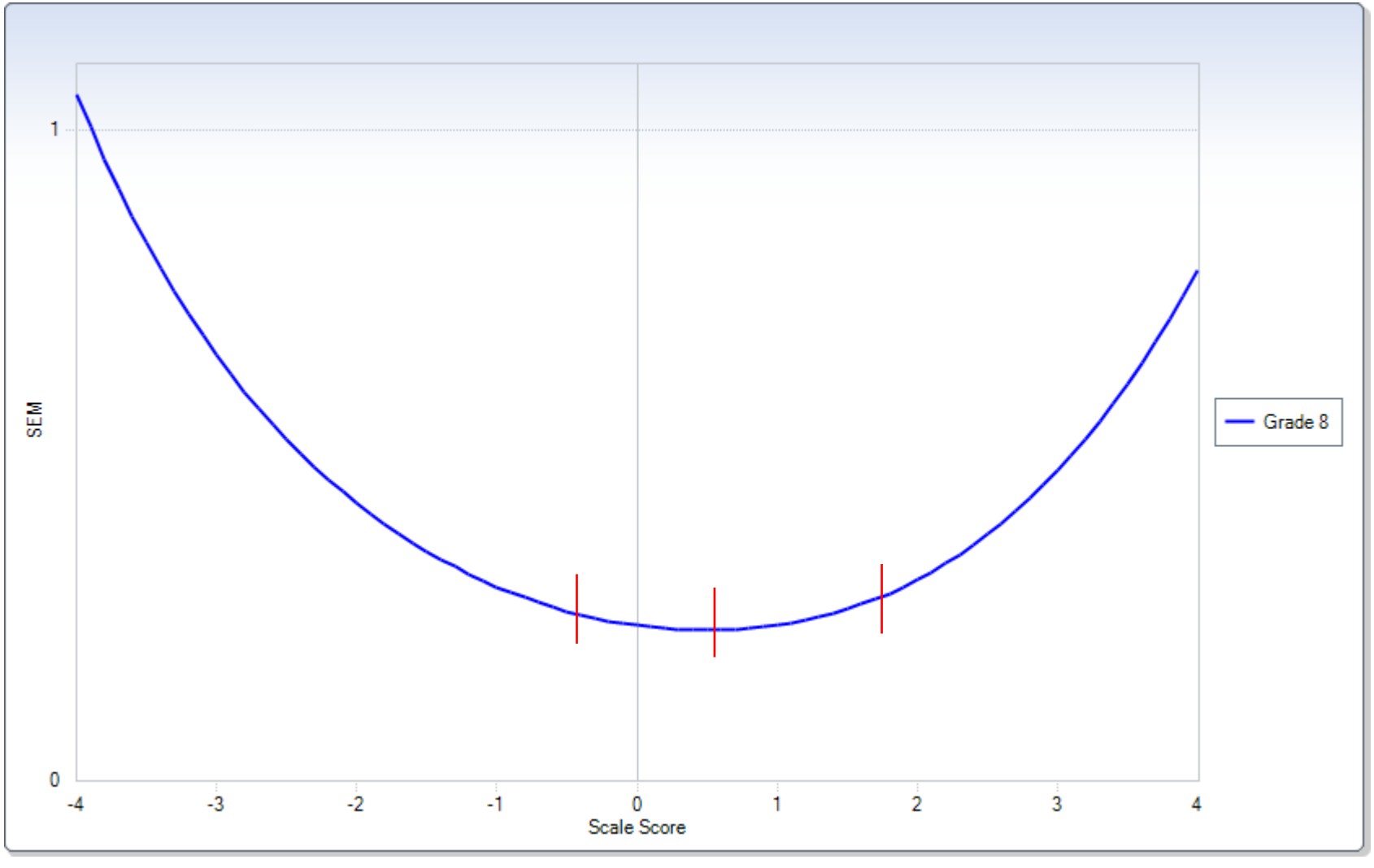
Conditional Standard Error of Measurement Curves



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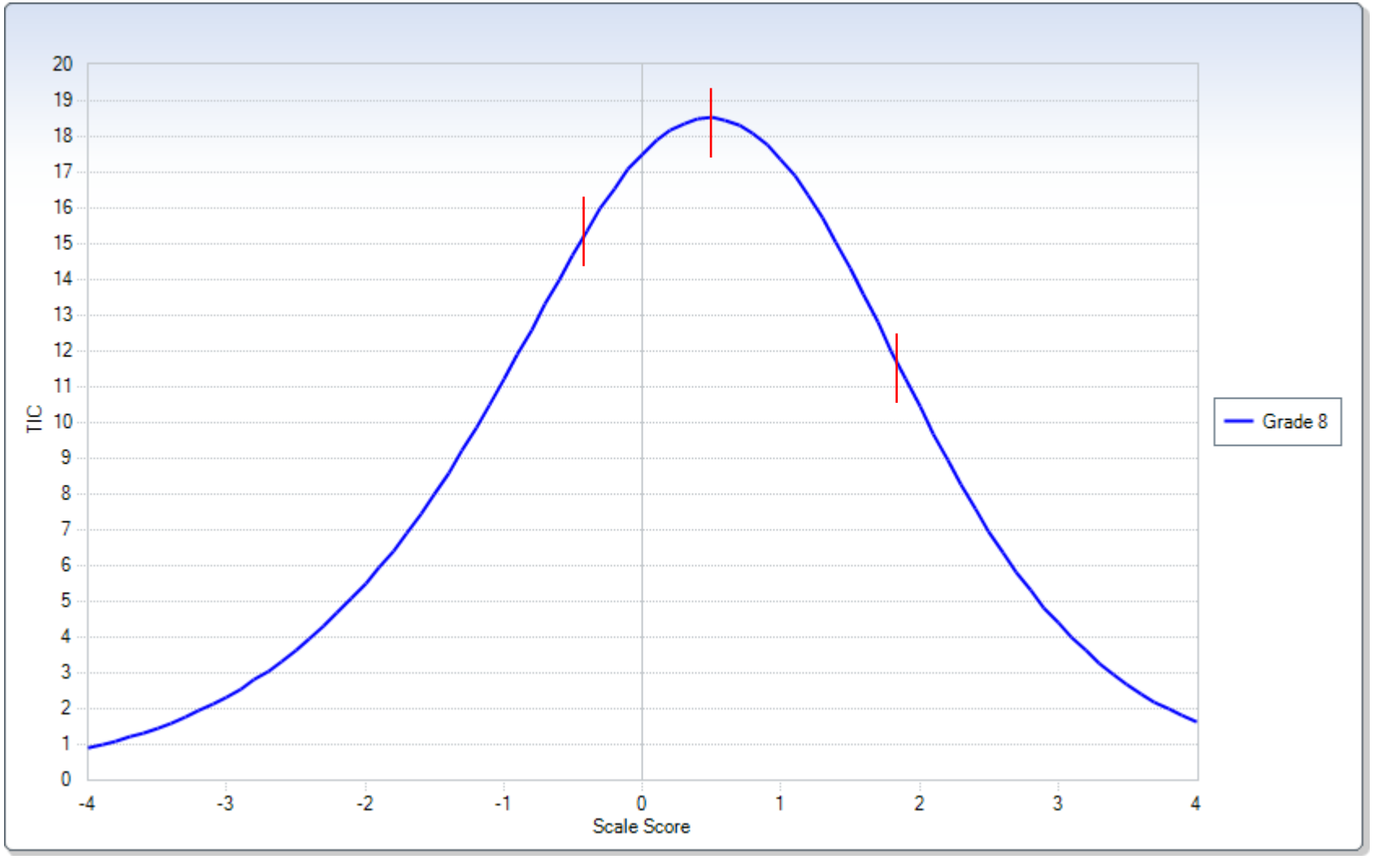
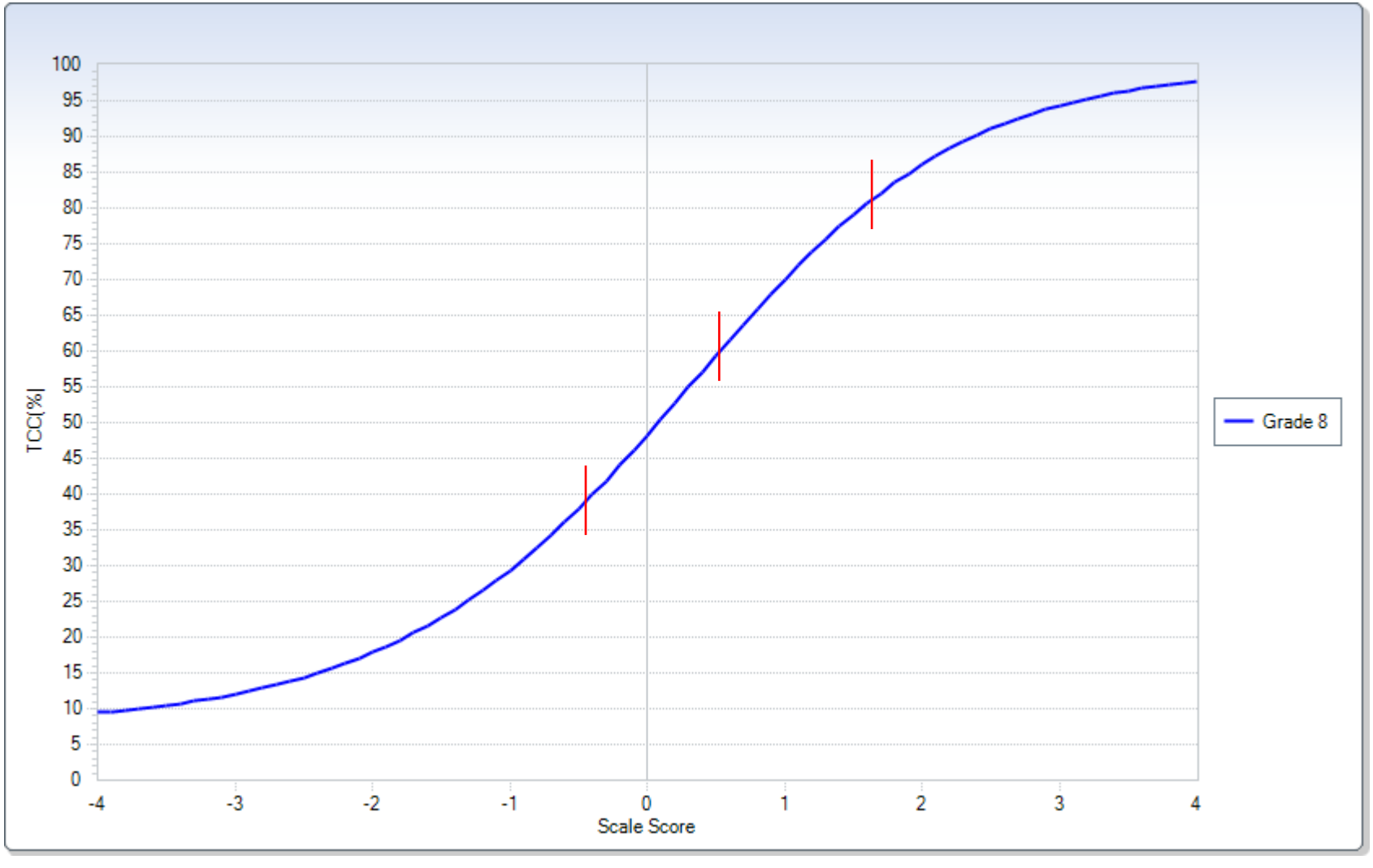
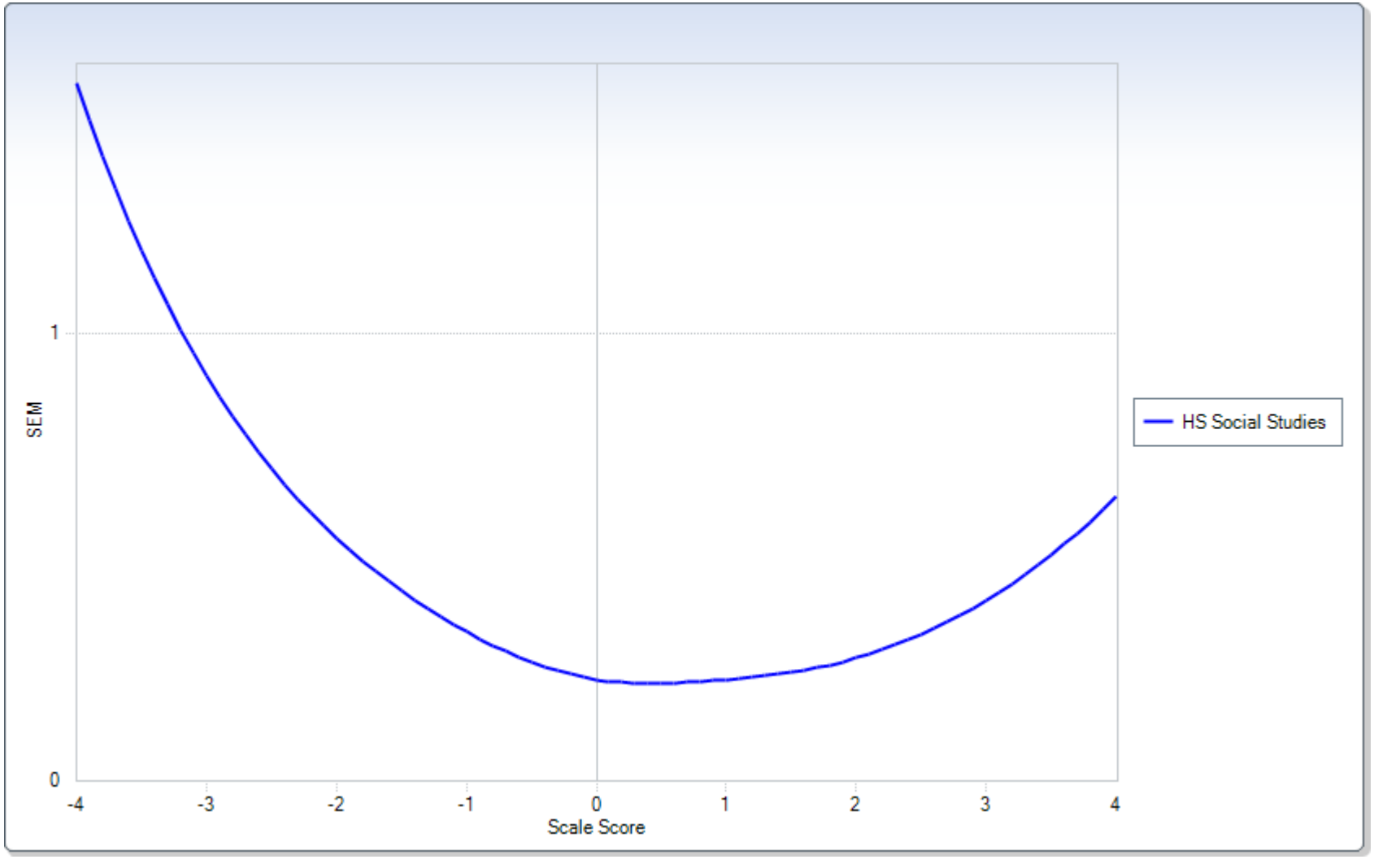
Test Information Curves



Test Summary Curves
Test Characteristic Curves (Percent)



Test Summary Curves
Conditional Standard Error of Measurement Curves



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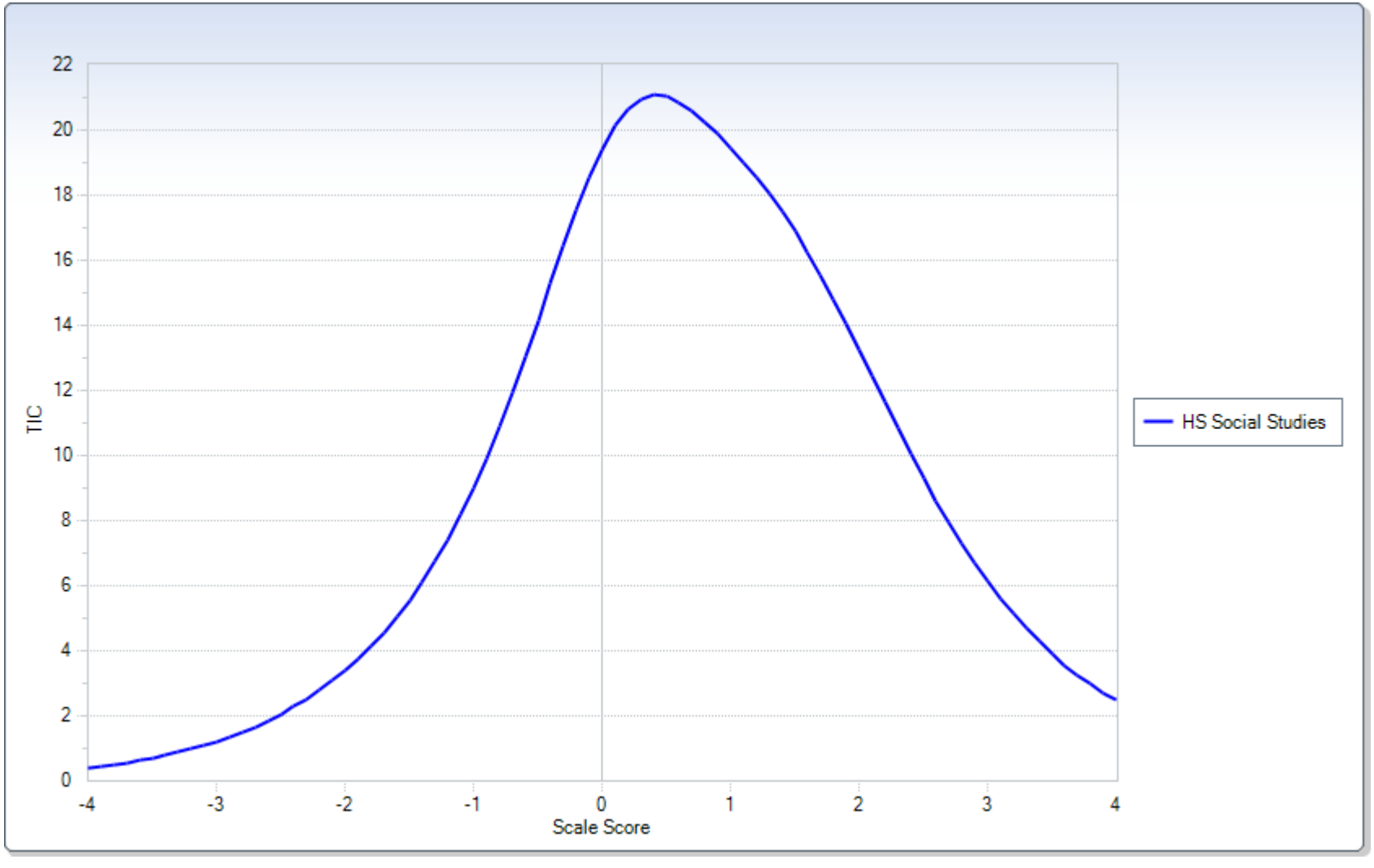
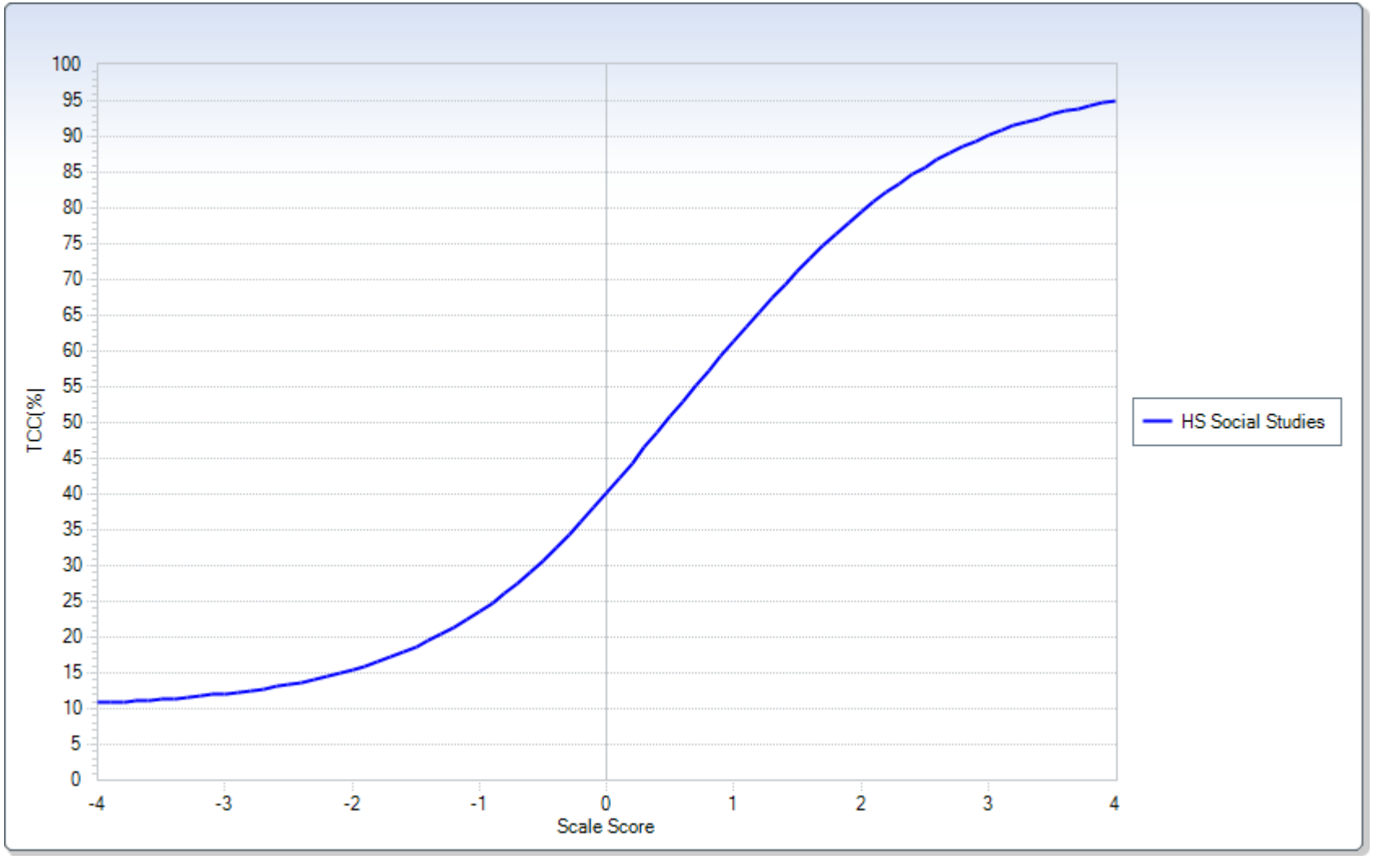
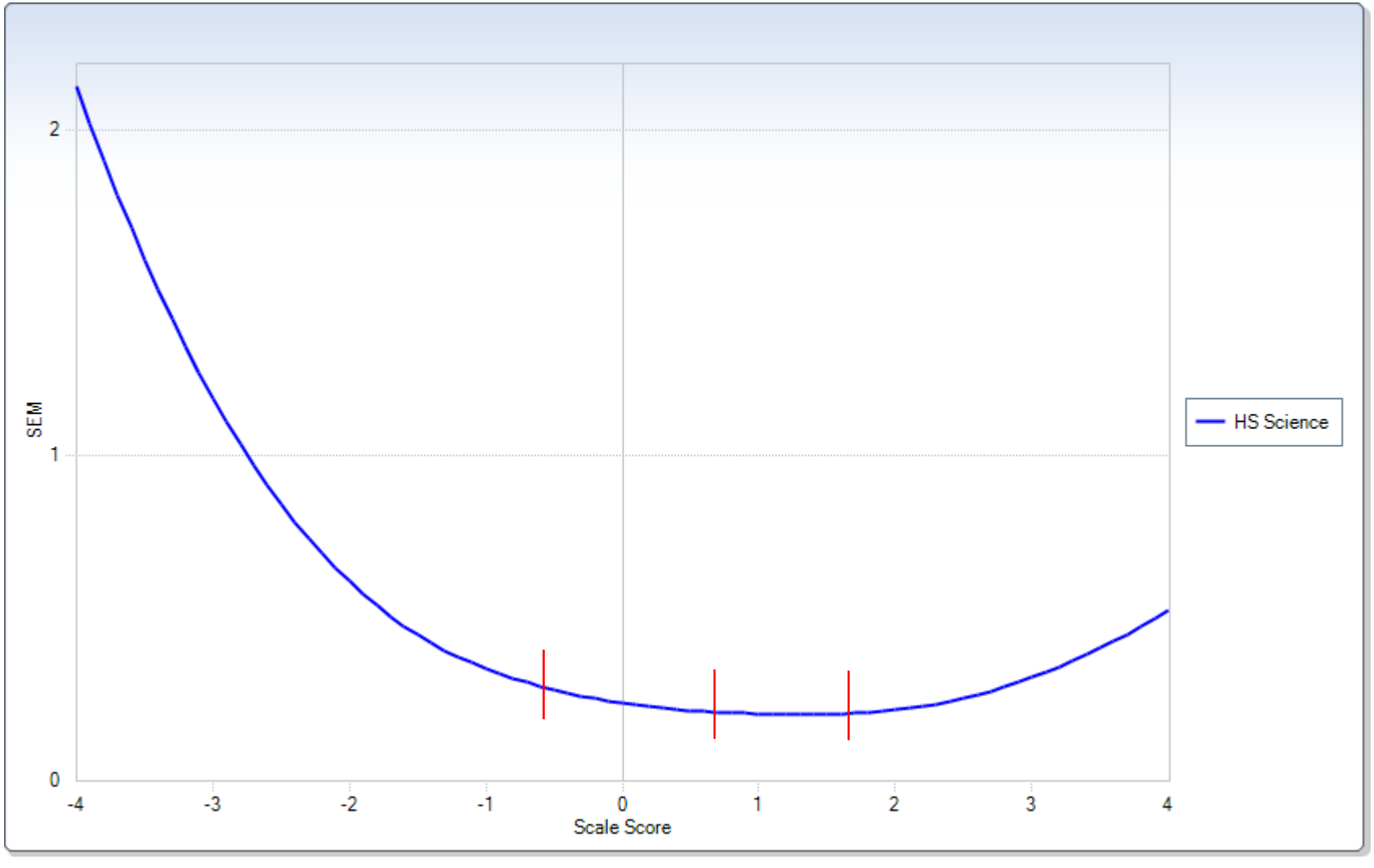
Test Information Curves



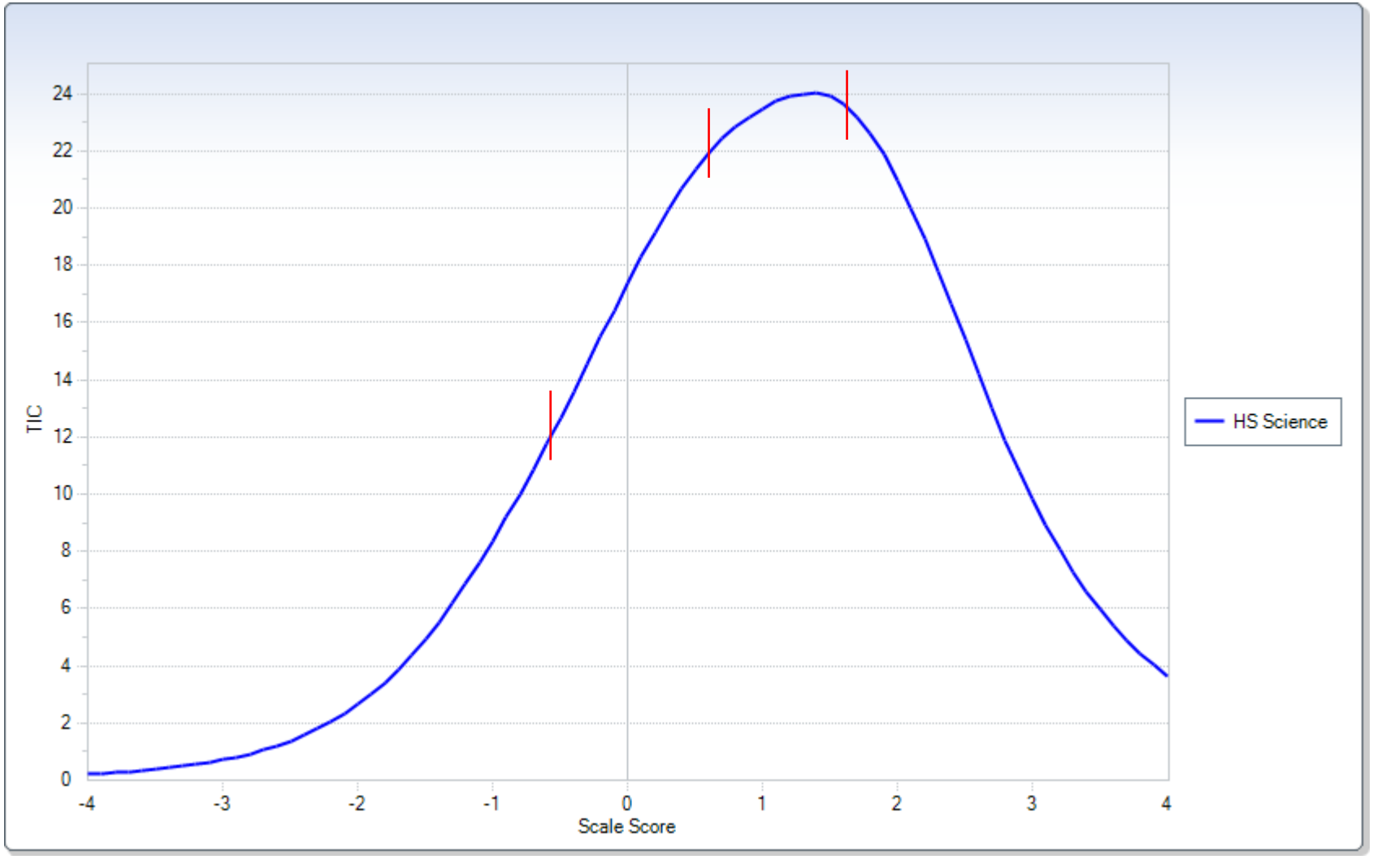
Test Summary Curves
Test Characteristic Curves (Percent)



Test Summary Curves
Conditional Standard Error of Measurement Curves



Test Summary Curves
Test Information Curves



Test Summary Curves
Test Characteristic Curves (Percent)