

PASA Science Item Quality Analyses

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Contents

Science Plots	3
Differences Between Raters	3
Differences Between Items	5
Science Tables	7
Tables for Raters	7
Tier 1: Bias free?	7
Tier 1: Prompt appropriate?	7
Tier 1: Tier aligned?	7
Tier 2: Bias free?	7
Tier 2: Prompt appropriate?	8
Tier 2: Tier aligned?	8
Tables for Items	9
Tier 1: Bias free?	9
Tier 1: Prompt appropriate?	11
Tier 1: Tier aligned?	13
Tier 2: Bias free?	15
Tier 2: Prompt appropriate?	17
Tier 2: Tier aligned?	19
Rationales & Recommendations	22
Science, Grade 4 , Tier 1	22
Science, Grade 4 , Tier 2	23
Science, Grade 8 , Tier 1	24
Science, Grade 8 , Tier 2	26
Science, Grade 11 , Tier 1	28
Science, Grade 11 , Tier 2	29

Study Overview

This report document summarizes the results of the PASA Science Item Quality Study conducted in October 2019. The report organizes findings into three sections (1) Plots, (2) Tables, and (3) Rationales and Recommendations, with the first two sections providing relevant frequency counts and descriptive statistics organized by **rater** and then **item**, and the later section listing teacher comments regarding rating rationales and recommendations for improvement. A hyper-linked Table of Contents appears in the upper left corner of the report. Readers can click on main (and expanded) headings in order to “jump to” major sections and sub-sections. Particular raters or items can be accessed quickly by using the “find” command on their respective computers (Windows = ctrl + f; Mac = cmd + f) and typing in a particular rater’s name or item ID.

Participants

Seventeen Pennsylvania (PA) teachers, with a range of special education experience and expertise in PA, were initially recruited by our partners in the PA Department of Education for the Science review. For Science, 15 individual teachers participated in reviewing and rating PASA items (two recruited teachers did not complete their assigned review and one teacher was assigned two review assignments, see **Method**, below). All but one of the 15 teachers participated in the previous ELA/Math Item Quality Study.

Method

Training. Participating teachers were trained via a recorded “in-person” 1.5-hour webinar, originally conducted live for the ELA/Math Item Quality Study, on September, 20, 2019 by Dillard Research Associates (DRA). The training detailed the development, purpose, and scope of PASA tests/items generally and the ELA and Math review specifically. Because all teachers had participated in the earlier study, and thus, taken part in the webinar, for the Science Review, teachers were asked to review the training webinar along with a new set of training slides that incorporated PASA Science content (e.g., Alternate Eligible Content Standards, exemplar items, tier specifications).

Procedures. Science item quality reviews were conducted using a web-based tool called the Distributed Item Review (DIR), designed to securely distribute tests and test items to community partners across wide geographic spans to review them for dimensions of standards alignment and item quality for validation. Within the DIR, items were organized by and assigned to teachers based content area (Science), grade (4, 8, and 11), and tier (1 or 2). In total, there were thus 6 DIR review assignments (1 content area x 3 grades x 2 tiers), with three teachers (initially) assigned to each review assignment.

Based on participation rates, most grade- and tier-levels had *three* teacher-ratings per item. The exceptions were: Grade 4 Tier 2 and Grade 11 Tier 1. These review assignments had only *two* teacher-ratings per item given those who did not complete any portion of their assigned review (see **Participants**, above).

Within the DIR, each PASA Science item (within separate grade-level and tier review assignments) were displayed as a screenshot of the item paired with three review questions, each with a dichotomous Yes/No answer response type:

1. Is the item aligned with tier specified as noted in the item ID and overall grade-level/tier assignment?
2. Does the single prompt direct an appropriate student response?
3. Is the item (i.e., graphics, text, and information provided) free of bias (i.e., race, gender, socioeconomic or disability status, or religion, geographic region)?

For any response of “No” to these three questions, participating teachers were asked to provide a rationale and recommendation/s for improving the item in an expandable text box, and to be specific and refer to tier, prompt appropriateness, bias, etc. in their rationale(s) and recommendation(s). It is these text-based rationales and recommendations that will, in part, guide further refinement of PASA items by the PA Department of Education.

A number of resources were included in the DIR to support teachers review of PASA items, including: (a) audio/video recording of the training webinar, (b) training slides, (c) tier-level descriptions for Science, and (d) videos of the PASA being administered to students representative of the test-taking population of students

with significant cognitive disabilities. Resources were accessible to teachers via the review assignment home page as well on each individual item review page.

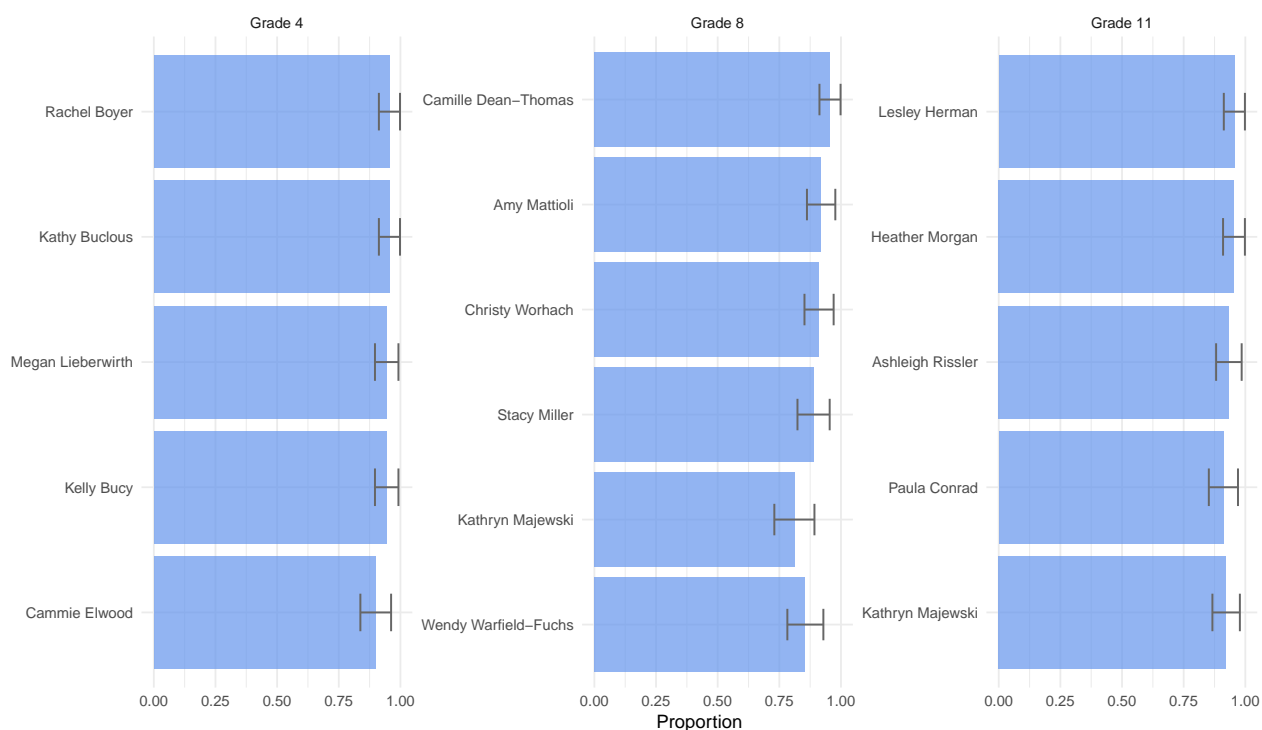
Science Plots

Differences Between Raters

The following plots shows differences between raters in terms of the proportion of items rated as “Yes” across all three of the review questions. These plots can serve as an approximation of rater severity, where teachers with a higher proportion of “Yes” responses can be thought of as being relatively more lenient (rated items more positively) compared to those with a lower proportion of “Yes” responses (rated items more negatively).

Proportion of items with "Yes" ratings by rater

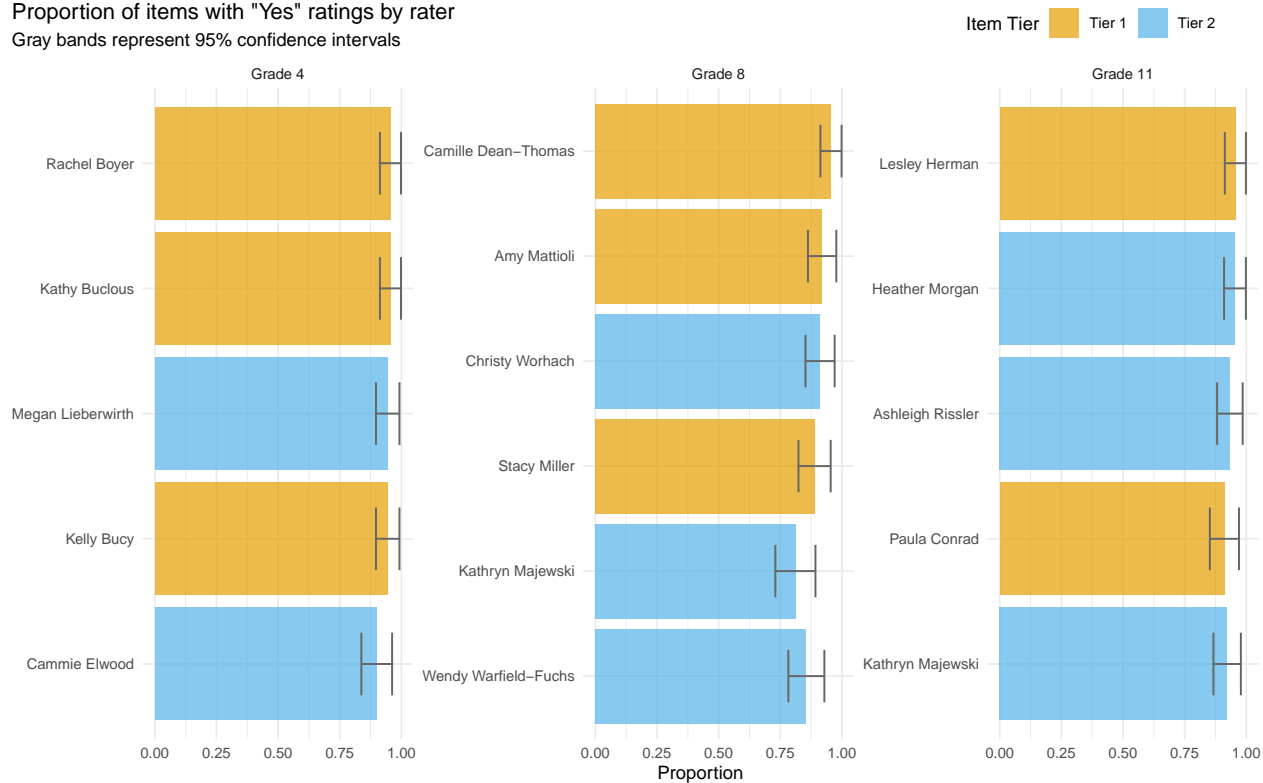
Gray bands represent 95% confidence intervals



We could also look at this separately by other areas. The plots below summarize the same thing but with the bars colored by the *tier*. Patterns appear to emerge. For example, in Grades 4 and 8 teachers rated Tier 1 items more positively compared to Tier 2 items, while ratings in Grade 11 were mixed with respect to tier.

Proportion of items with "Yes" ratings by rater

Gray bands represent 95% confidence intervals

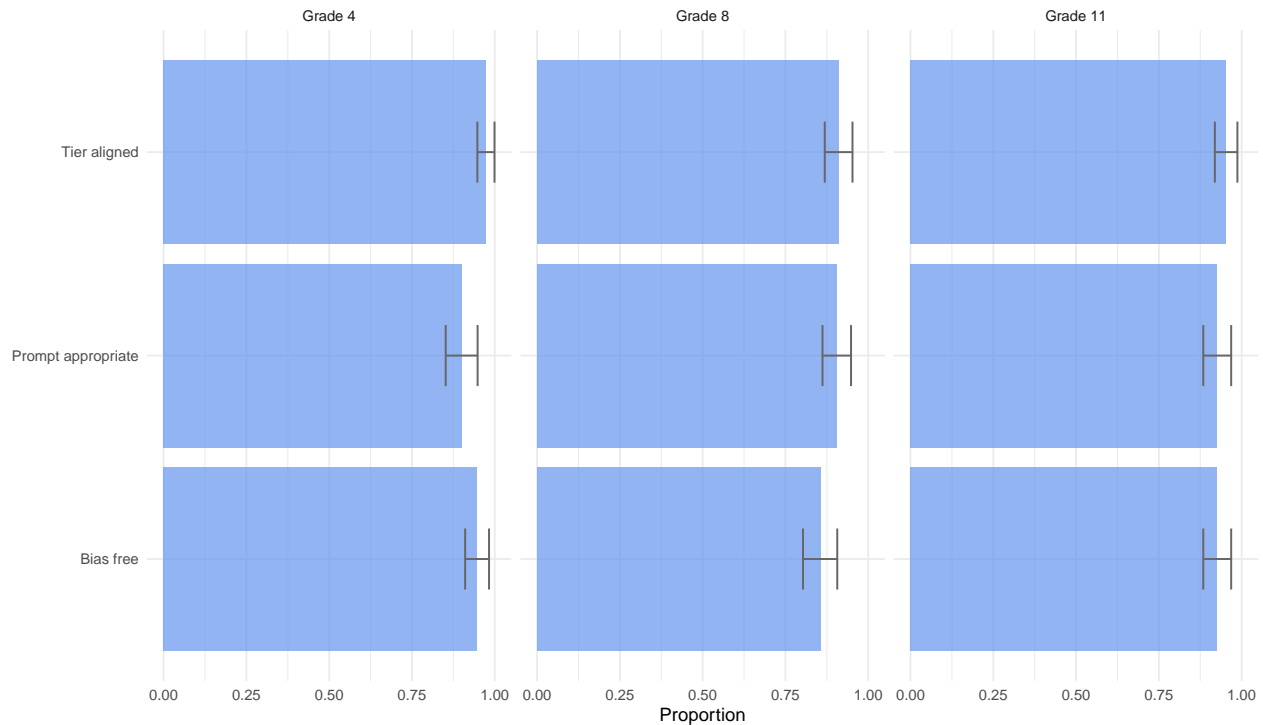


Differences Between Items

The first plot we'll look at here is the differences in the proportion of items rated according to each question type, with abbreviations for each question type displayed on the y-axis. At a quick glance, one can note that in Grade 4, teachers rated the *prompt appropriateness* less positively compared to other review questions and grades, and for Grade 8, teachers rated *bias-free* less positively. Based on these plots, on the whole, items appear to be rated as largely *tier-aligned* (with Grade 8 showing relatively less positive ratings on this question), *prompt-appropriate* (with Grade 4 showing relatively less positive ratings on this question), and *bias-free* (with Grade 8 showing relatively less positive ratings on this question).

Proportion of items with "Yes" ratings by Question

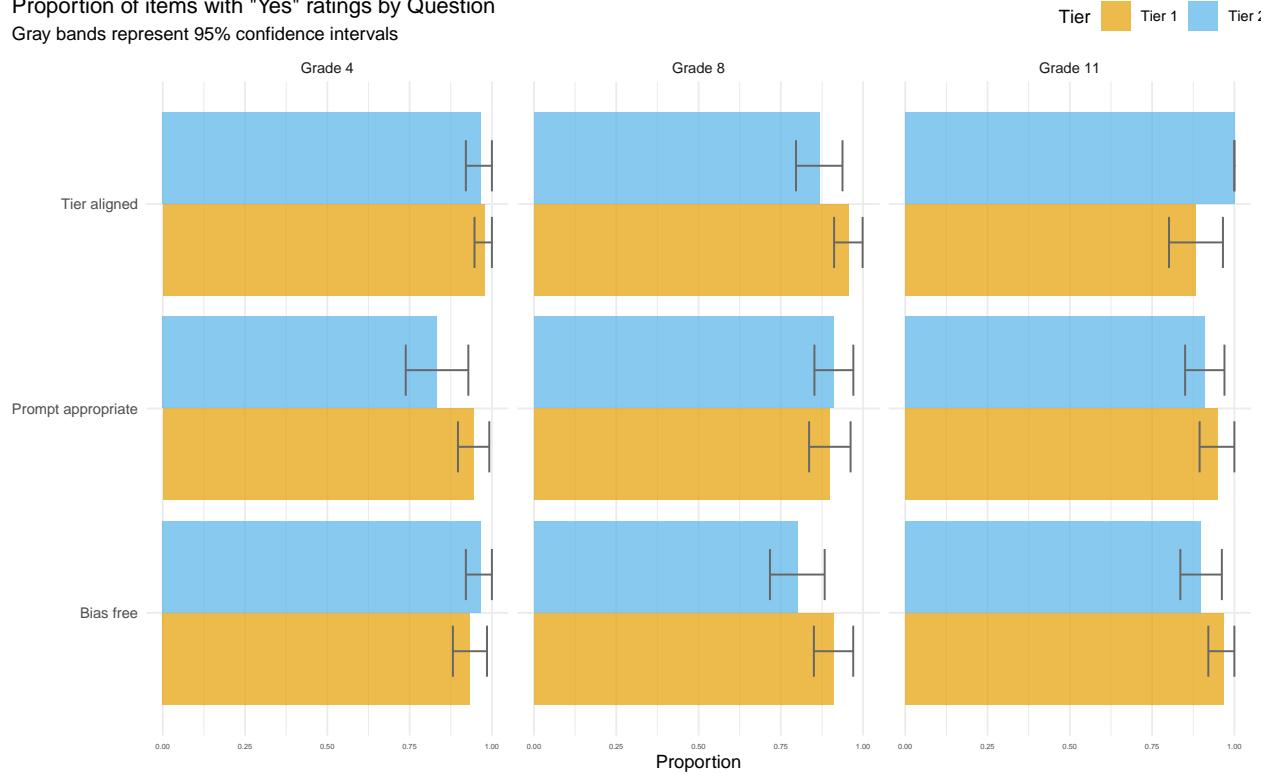
Gray bands represent 95% confidence intervals



We can also examine item ratings by other features. In these, grade-level items are displayed based on tier (color). Once again, abbreviations for each question type displayed on the y-axis to the left of the plots. Patterns observed in grade-level (alone) above become a little clearer and more specific in these plots. For example, one can note that in Grade 8 Tier 2 teachers rated *bias-free* less positively compared to other review questions and grades. Based on these plots, items appear to be rated as largely *tier-aligned* (with Grade 8 Tier 2 and Grade 11 Tier 1 showing relatively less positive ratings on this question), *prompt-appropriate* (with Grade 4 Tier 2 showing relatively less positive ratings on this question), and *bias-free* (with Grade 8 Tier 2 showing relatively less positive ratings on this question).

Proportion of items with "Yes" ratings by Question

Gray bands represent 95% confidence intervals



Science Tables

Finally, tables allow for specific evaluation of *Raters* and *Items*. Below, raters are displayed by review question and tier, and sorted by grade. At a glance, raters (teachers) total proportion of “Yes” responses are observable. For example, in the first table, two teachers rated all Tier 1 items as “Yes” for *bias* (bias-free), whereas just one teacher rated less than 90% of Tier 1 items as “Yes” for *bias*.

Tables for Raters

Tier 1: Bias free?

Grade	Rater	No	Yes	Percentage Yes
4	Kathy Buclous	3	27	90
4	Kelly Bucy	2	28	93
4	Rachel Boyer	1	29	97
8	Amy Mattioli	1	28	97
8	Camille Dean-Thomas	2	28	93
8	Stacy Miller	5	25	83
11	Lesley Herman	1	29	97
11	Paula Conrad	1	29	97

Tier 1: Prompt appropriate?

Grade	Rater	No	Yes	Percentage Yes
4	Kathy Buclous	0	30	100
4	Kelly Bucy	3	27	90
4	Rachel Boyer	2	28	93
8	Amy Mattioli	5	24	83
8	Camille Dean-Thomas	1	29	97
8	Stacy Miller	3	27	90
11	Lesley Herman	0	30	100
11	Paula Conrad	3	27	90

Tier 1: Tier aligned?

Grade	Rater	No	Yes	Percentage Yes
4	Kathy Buclous	1	29	97
4	Kelly Bucy	0	30	100
4	Rachel Boyer	1	29	97
8	Amy Mattioli	1	28	97
8	Camille Dean-Thomas	1	29	97
8	Stacy Miller	2	28	93
11	Lesley Herman	3	27	90
11	Paula Conrad	4	26	87

Tier 2: Bias free?

Grade	Rater	No	Yes	Percentage Yes
4	Cammie Elwood	2	28	93
4	Megan Lieberwirth	0	30	100
8	Christy Worhach	4	26	87
8	Kathryn Majewski	12	18	60
8	Wendy Warfield-Fuchs	2	28	93
11	Ashleigh Rissler	0	30	100
11	Heather Morgan	2	27	93
11	Kathryn Majewski	7	23	77

Tier 2: Prompt appropriate?

Grade	Rater	No	Yes	Percentage Yes
4	Cammie Elwood	6	24	80
4	Megan Lieberwirth	4	26	87
8	Christy Worhach	4	26	87
8	Kathryn Majewski	0	30	100
8	Wendy Warfield-Fuchs	4	26	87
11	Ashleigh Rissler	6	24	80
11	Heather Morgan	2	27	93
11	Kathryn Majewski	0	30	100

Tier 2: Tier aligned?

Grade	Rater	No	Yes	Percentage Yes
4	Cammie Elwood	1	29	97
4	Megan Lieberwirth	1	29	97
8	Christy Worhach	0	30	100
8	Kathryn Majewski	5	25	83
8	Wendy Warfield-Fuchs	7	23	77
11	Ashleigh Rissler	0	30	100
11	Heather Morgan	0	29	100
11	Kathryn Majewski	0	30	100

Tables for Items

In the tables below, individual Science items are displayed by tier and review question, and then, sorted by grade within each table. A frequency count of Yes/No responses and % Yes are given for each item. Item IDs with “No” responses will be associated with text-based rationales and recommendations in the tables that follow (see **Comments**, below) that can be used to guide editing and further refinement of PASA Science items. Again, based on results in these item tables, comments for particular items can be quickly found by using the “find” command (Windows = ctrl + f; Mac = cmd + f).

Tier 1: Bias free?

Grade	Item	No	Yes	Percentage Yes
4	S4.A.1.1.2A-2	0	3	100
4	S4.A.2.1.4-7	0	3	100
4	S4.A.2.2.1-3	1	2	67
4	S4.A.3.1.1-3	1	2	67
4	S4.A.3.1.1-4	1	2	67
4	S4.A.3.3.2-3	1	2	67
4	S4.B.1.1.3-3	0	3	100
4	S4.B.1.1.4-7	0	3	100
4	S4.B.1.1.5A-1	0	3	100
4	S4.B.2.1.1-3	0	3	100
4	S4.B.2.1.1-5	0	3	100
4	S4.B.2.1.1-7	0	3	100
4	S4.B.3.1.1-11	0	3	100
4	S4.B.3.1.1-5	0	3	100
4	S4.B.3.1.1-9	0	3	100
4	S4.B.3.2.3-3	0	3	100
4	S4.B.3.3.5-5	1	2	67
4	S4.B.3.3.5-9	0	3	100
4	S4.C.1.1.1A-2	0	3	100
4	S4.C.1.1.1A-4	0	3	100
4	S4.C.1.1.2-7	0	3	100
4	S4.C.1.1.2-8	0	3	100
4	S4.C.3.1.1A-3	0	3	100
4	S4.C.3.1.3-3	0	3	100
4	S4.C.3.1.3-4	0	3	100
4	S4.D.1.2.1-3	1	2	67
4	S4.D.1.2.2A-3	0	3	100
4	S4.D.2.1.2-5	0	3	100
4	S4.D.2.1.2A-2	0	3	100
4	S4.D.2.1.3A-1	0	3	100
8	S8.A.1.3.2-4	0	3	100
8	S8.A.1.3.2-9	0	3	100
8	S8.A.2.1.1A-10	0	3	100
8	S8.A.2.1.1A-5	1	2	67
8	S8.A.2.2.1-3	1	2	67
8	S8.A.2.2.1-4	0	3	100
8	S8.A.2.2.3-3	1	2	67

(continued)

Grade	Item	No	Yes	Percentage	Yes
8	S8.A.3.1.5A-1	0	3		100
8	S8.A.3.1.5A-2	0	3		100
8	S8.A.3.1.5B-3	0	3		100
8	S8.A.3.1.5B-7	0	3		100
8	S8.A.3.3.2-3	0	3		100
8	S8.B.1.1.3-5	0	3		100
8	S8.B.1.1.3-7	0	3		100
8	S8.B.2.1.1-5	0	3		100
8	S8.B.3.1.1-4	2	1		33
8	S8.B.3.1.1-6	0	3		100
8	S8.B.3.2.1-4	0	3		100
8	S8.B.3.2.1-5	0	3		100
8	S8.B.3.3.3-1	0	3		100
8	S8.B.3.3.3-3	2	1		33
8	S8.C.1.1.2-2	0	2		100
8	S8.C.1.1.2-5	0	3		100
8	S8.C.1.1.2-7	1	2		67
8	S8.C.2.2.3-4	0	3		100
8	S8.C.2.2.3-5	0	3		100
8	S8.D.1.1.2-6	0	3		100
8	S8.D.1.1.2-8	0	3		100
8	S8.D.1.2.1-5	0	3		100
8	S8.D.1.3.1-4	0	3		100
11	S11.A.1.3.2-3	0	2		100
11	S11.A.2.1.1-1	0	2		100
11	S11.A.2.1.1-5	0	2		100
11	S11.A.2.1.3-5	0	2		100
11	S11.A.2.2.1-6	1	1		50
11	S11.A.2.2.2-3	0	2		100
11	S11.A.3.1.2-10	0	2		100
11	S11.A.3.1.2-6	0	2		100
11	S11.A.3.1.2-8	0	2		100
11	S11.A.3.3.3-6	0	2		100
11	S11.A.3.3.3-8	0	2		100
11	S11.A.3.3.3-9	0	2		100
11	S11.B.1.1.2-6	0	2		100
11	S11.B.1.1.2-7	0	2		100
11	S11.B.3.1.3-1	0	2		100
11	S11.B.3.1.3-4	0	2		100
11	S11.B.3.1.4A-2	0	2		100
11	S11.B.3.1.4B-10	0	2		100
11	S11.B.3.1.4B-9	0	2		100
11	S11.B.3.2.3-6	0	2		100
11	S11.C.1.1.1-4	0	2		100
11	S11.C.1.1.1-5	0	2		100
11	S11.C.2.2.3-3	0	2		100
11	S11.C.3.1.1-6	0	2		100

(continued)

Grade	Item	No	Yes	Percentage Yes
11	S11.C.3.1.3-5	0	2	100
11	S11.C.3.1.3-7	0	2	100
11	S11.D.1.1.3-4	0	2	100
11	S11.D.1.2.2-3	0	2	100
11	S11.D.1.2.2-4	0	2	100
11	S11.D.2.1.4-5	1	1	50

Tier 1: Prompt appropriate?

Grade	Item	No	Yes	Percentage Yes
4	S4.A.1.1.2A-2	0	3	100
4	S4.A.2.1.4-7	0	3	100
4	S4.A.2.2.1-3	0	3	100
4	S4.A.3.1.1-3	0	3	100
4	S4.A.3.1.1-4	0	3	100
4	S4.A.3.3.2-3	1	2	67
4	S4.B.1.1.3-3	0	3	100
4	S4.B.1.1.4-7	0	3	100
4	S4.B.1.1.5A-1	0	3	100
4	S4.B.2.1.1-3	0	3	100
4	S4.B.2.1.1-5	0	3	100
4	S4.B.2.1.1-7	0	3	100
4	S4.B.3.1.1-11	0	3	100
4	S4.B.3.1.1-5	0	3	100
4	S4.B.3.1.1-9	0	3	100
4	S4.B.3.2.3-3	0	3	100
4	S4.B.3.3.5-5	0	3	100
4	S4.B.3.3.5-9	1	2	67
4	S4.C.1.1.1A-2	0	3	100
4	S4.C.1.1.1A-4	0	3	100
4	S4.C.1.1.2-7	0	3	100
4	S4.C.1.1.2-8	0	3	100
4	S4.C.3.1.1A-3	0	3	100
4	S4.C.3.1.3-3	1	2	67
4	S4.C.3.1.3-4	0	3	100
4	S4.D.1.2.1-3	0	3	100
4	S4.D.1.2.2A-3	0	3	100
4	S4.D.2.1.2-5	2	1	33
4	S4.D.2.1.2A-2	0	3	100
4	S4.D.2.1.3A-1	0	3	100
8	S8.A.1.3.2-4	0	3	100
8	S8.A.1.3.2-9	0	3	100
8	S8.A.2.1.1A-10	0	3	100
8	S8.A.2.1.1A-5	0	3	100
8	S8.A.2.2.1-3	0	3	100
8	S8.A.2.2.1-4	0	3	100

(continued)

Grade	Item	No	Yes	Percentage Yes
8	S8.A.2.2.3-3	1	2	67
8	S8.A.3.1.5A-1	3	0	0
8	S8.A.3.1.5A-2	0	3	100
8	S8.A.3.1.5B-3	0	3	100
8	S8.A.3.1.5B-7	1	2	67
8	S8.A.3.3.2-3	0	3	100
8	S8.B.1.1.3-5	0	3	100
8	S8.B.1.1.3-7	0	3	100
8	S8.B.2.1.1-5	0	3	100
8	S8.B.3.1.1-4	0	3	100
8	S8.B.3.1.1-6	0	3	100
8	S8.B.3.2.1-4	0	3	100
8	S8.B.3.2.1-5	0	3	100
8	S8.B.3.3.3-1	0	3	100
8	S8.B.3.3.3-3	1	2	67
8	S8.C.1.1.2-2	0	2	100
8	S8.C.1.1.2-5	0	3	100
8	S8.C.1.1.2-7	2	1	33
8	S8.C.2.2.3-4	0	3	100
8	S8.C.2.2.3-5	0	3	100
8	S8.D.1.1.2-6	0	3	100
8	S8.D.1.1.2-8	1	2	67
8	S8.D.1.2.1-5	0	3	100
8	S8.D.1.3.1-4	0	3	100
11	S11.A.1.3.2-3	0	2	100
11	S11.A.2.1.1-1	0	2	100
11	S11.A.2.1.1-5	0	2	100
11	S11.A.2.1.3-5	0	2	100
11	S11.A.2.2.1-6	0	2	100
11	S11.A.2.2.2-3	0	2	100
11	S11.A.3.1.2-10	0	2	100
11	S11.A.3.1.2-6	0	2	100
11	S11.A.3.1.2-8	0	2	100
11	S11.A.3.3.3-6	1	1	50
11	S11.A.3.3.3-8	0	2	100
11	S11.A.3.3.3-9	0	2	100
11	S11.B.1.1.2-6	0	2	100
11	S11.B.1.1.2-7	0	2	100
11	S11.B.3.1.3-1	0	2	100
11	S11.B.3.1.3-4	0	2	100
11	S11.B.3.1.4A-2	0	2	100
11	S11.B.3.1.4B-10	0	2	100
11	S11.B.3.1.4B-9	0	2	100
11	S11.B.3.2.3-6	1	1	50
11	S11.C.1.1.1-4	1	1	50
11	S11.C.1.1.1-5	0	2	100
11	S11.C.2.2.3-3	0	2	100

(continued)

Grade	Item	No	Yes	Percentage	Yes
11	S11.C.3.1.1-6	0	2		100
11	S11.C.3.1.3-5	0	2		100
11	S11.C.3.1.3-7	0	2		100
11	S11.D.1.1.3-4	0	2		100
11	S11.D.1.2.2-3	0	2		100
11	S11.D.1.2.2-4	0	2		100
11	S11.D.2.1.4-5	0	2		100

Tier 1: Tier aligned?

Grade	Item	No	Yes	Percentage	Yes
4	S4.A.1.1.2A-2	0	3		100
4	S4.A.2.1.4-7	0	3		100
4	S4.A.2.2.1-3	0	3		100
4	S4.A.3.1.1-3	0	3		100
4	S4.A.3.1.1-4	0	3		100
4	S4.A.3.3.2-3	1	2		67
4	S4.B.1.1.3-3	0	3		100
4	S4.B.1.1.4-7	0	3		100
4	S4.B.1.1.5A-1	0	3		100
4	S4.B.2.1.1-3	0	3		100
4	S4.B.2.1.1-5	0	3		100
4	S4.B.2.1.1-7	0	3		100
4	S4.B.3.1.1-11	0	3		100
4	S4.B.3.1.1-5	0	3		100
4	S4.B.3.1.1-9	0	3		100
4	S4.B.3.2.3-3	0	3		100
4	S4.B.3.3.5-5	0	3		100
4	S4.B.3.3.5-9	0	3		100
4	S4.C.1.1.1A-2	0	3		100
4	S4.C.1.1.1A-4	0	3		100
4	S4.C.1.1.2-7	0	3		100
4	S4.C.1.1.2-8	0	3		100
4	S4.C.3.1.1A-3	0	3		100
4	S4.C.3.1.3-3	0	3		100
4	S4.C.3.1.3-4	0	3		100
4	S4.D.1.2.1-3	0	3		100
4	S4.D.1.2.2A-3	0	3		100
4	S4.D.2.1.2-5	1	2		67
4	S4.D.2.1.2A-2	0	3		100
4	S4.D.2.1.3A-1	0	3		100
8	S8.A.1.3.2-4	0	3		100
8	S8.A.1.3.2-9	0	3		100
8	S8.A.2.1.1A-10	0	3		100
8	S8.A.2.1.1A-5	0	3		100
8	S8.A.2.2.1-3	0	3		100

(continued)

Grade	Item	No	Yes	Percentage	Yes
8	S8.A.2.2.1-4	0	3		100
8	S8.A.2.2.3-3	0	3		100
8	S8.A.3.1.5A-1	0	3		100
8	S8.A.3.1.5A-2	0	3		100
8	S8.A.3.1.5B-3	1	2		67
8	S8.A.3.1.5B-7	0	3		100
8	S8.A.3.3.2-3	0	3		100
8	S8.B.1.1.3-5	0	3		100
8	S8.B.1.1.3-7	0	3		100
8	S8.B.2.1.1-5	0	3		100
8	S8.B.3.1.1-4	0	3		100
8	S8.B.3.1.1-6	0	3		100
8	S8.B.3.2.1-4	1	2		67
8	S8.B.3.2.1-5	0	3		100
8	S8.B.3.3.3-1	0	3		100
8	S8.B.3.3.3-3	0	3		100
8	S8.C.1.1.2-2	0	2		100
8	S8.C.1.1.2-5	0	3		100
8	S8.C.1.1.2-7	2	1		33
8	S8.C.2.2.3-4	0	3		100
8	S8.C.2.2.3-5	0	3		100
8	S8.D.1.1.2-6	0	3		100
8	S8.D.1.1.2-8	0	3		100
8	S8.D.1.2.1-5	0	3		100
8	S8.D.1.3.1-4	0	3		100
11	S11.A.1.3.2-3	0	2		100
11	S11.A.2.1.1-1	1	1		50
11	S11.A.2.1.1-5	0	2		100
11	S11.A.2.1.3-5	0	2		100
11	S11.A.2.2.1-6	0	2		100
11	S11.A.2.2.2-3	0	2		100
11	S11.A.3.1.2-10	1	1		50
11	S11.A.3.1.2-6	1	1		50
11	S11.A.3.1.2-8	0	2		100
11	S11.A.3.3.3-6	1	1		50
11	S11.A.3.3.3-8	0	2		100
11	S11.A.3.3.3-9	0	2		100
11	S11.B.1.1.2-6	0	2		100
11	S11.B.1.1.2-7	0	2		100
11	S11.B.3.1.3-1	1	1		50
11	S11.B.3.1.3-4	0	2		100
11	S11.B.3.1.4A-2	0	2		100
11	S11.B.3.1.4B-10	0	2		100
11	S11.B.3.1.4B-9	0	2		100
11	S11.B.3.2.3-6	0	2		100
11	S11.C.1.1.1-4	0	2		100

(continued)

Grade	Item	No	Yes	Percentage Yes
11	S11.C.1.1.1-5	0	2	100
11	S11.C.2.2.3-3	0	2	100
11	S11.C.3.1.1-6	0	2	100
11	S11.C.3.1.3-5	0	2	100
11	S11.C.3.1.3-7	0	2	100
11	S11.D.1.1.3-4	0	2	100
11	S11.D.1.2.2-3	1	1	50
11	S11.D.1.2.2-4	0	2	100
11	S11.D.2.1.4-5	1	1	50

Tier 2: Bias free?

Grade	Item	No	Yes	Percentage Yes
4	S4.A.1.1.2A-3	0	2	100
4	S4.A.1.3.1A-4	0	2	100
4	S4.A.2.1.4-10	0	2	100
4	S4.A.2.1.4-11	0	2	100
4	S4.A.2.1.4-5	0	2	100
4	S4.A.2.2.1-4	0	2	100
4	S4.A.3.1.1-5	0	2	100
4	S4.A.3.1.1-6	0	2	100
4	S4.A.3.3.2-4	0	2	100
4	S4.B.1.1.3-2	0	2	100
4	S4.B.1.1.3-4	0	2	100
4	S4.B.1.1.4-4	0	2	100
4	S4.B.1.1.5.A-3	0	2	100
4	S4.B.2.1.1-4	0	2	100
4	S4.B.2.1.1-6	0	2	100
4	S4.B.3.1.1-7	0	2	100
4	S4.B.3.1.1-8	0	2	100
4	S4.B.3.2.3-2	0	2	100
4	S4.B.3.3.5-6	1	1	50
4	S4.C.1.1.1A-3	0	2	100
4	S4.C.1.1.1A-5	0	2	100
4	S4.C.1.1.2-9	1	1	50
4	S4.C.3.1.1A-4	0	2	100
4	S4.C.3.1.3-5	0	2	100
4	S4.D.1.1.1-5	0	2	100
4	S4.D.1.2.1-4	0	2	100
4	S4.D.1.2.2-3	0	2	100
4	S4.D.2.1.2-4	0	2	100
4	S4.D.2.1.2A-3	0	2	100
4	S4.D.2.1.3A-2	0	2	100
8	S8.A.1.3.2-6	1	2	67
8	S8.A.1.3.2-8	1	2	67
8	S8.A.2.1.1A-6	1	2	67

(continued)

Grade	Item	No	Yes	Percentage	Yes
8	S8.A.2.1.1A-8	1	2		67
8	S8.A.2.2.1-5	0	3		100
8	S8.A.2.2.1-6	0	3		100
8	S8.A.2.2.3-4	1	2		67
8	S8.A.3.1.5-13	0	3		100
8	S8.A.3.1.5B-2	0	3		100
8	S8.A.3.1.5B-6	1	2		67
8	S8.A.3.3.2-4	2	1		33
8	S8.B.1.1.3-11	0	3		100
8	S8.B.1.1.3-8	1	2		67
8	S8.B.2.1.1-7	0	3		100
8	S8.B.3.1.1-5	1	2		67
8	S8.B.3.1.1-7	1	2		67
8	S8.B.3.1.2-2	0	3		100
8	S8.B.3.2.1-7	0	3		100
8	S8.B.3.2.1-8	0	3		100
8	S8.B.3.3.3-2	0	3		100
8	S8.B.3.3.3-4	1	2		67
8	S8.C.1.1.2-6	0	3		100
8	S8.C.1.1.2-8	1	2		67
8	S8.C.2.2.3-3	2	1		33
8	S8.C.2.2.3-6	1	2		67
8	S8.D.1.1.2-5	1	2		67
8	S8.D.1.1.2-7	0	3		100
8	S8.D.1.1.2-9	1	2		67
8	S8.D.1.2.1-4	0	3		100
8	S8.D.1.3.1-5	0	3		100
11	S11.A.1.3.2-4	1	2		67
11	S11.A.2.1.1-6	0	3		100
11	S11.A.2.1.3-6	0	3		100
11	S11.A.2.1.3-7	0	3		100
11	S11.A.2.2.1-4	0	3		100
11	S11.A.2.2.1-5	0	3		100
11	S11.A.2.2.2-2	0	3		100
11	S11.A.3.1.2-11	0	3		100
11	S11.A.3.1.2-7	0	3		100
11	S11.A.3.1.2-9	1	2		67
11	S11.A.3.3.3-10	0	3		100
11	S11.A.3.3.3-7	0	3		100
11	S11.B.1.1.2-8	0	3		100
11	S11.B.3.1.3-5	0	3		100
11	S11.B.3.1.4A-3	1	2		67
11	S11.B.3.1.4B-11	0	3		100
11	S11.B.3.1.4B-12	1	2		67
11	S11.B.3.2.3-4	0	3		100
11	S11.B.3.2.3-8	2	1		33
11	S11.C.1.1.1-3	1	2		67

(continued)

Grade	Item	No	Yes	Percentage Yes
11	S11.C.2.2.3-2	0	3	100
11	S11.C.2.2.3-4	0	3	100
11	S11.C.3.1.3-6	0	3	100
11	S11.C.3.1.3-8	0	3	100
11	S11.D.1.1.3-3	0	2	100
11	S11.D.1.1.3-5	1	2	67
11	S11.D.1.2.2-2	0	3	100
11	S11.D.1.2.2-5	0	3	100
11	S11.D.1.2.2-7	0	3	100
11	S11.D.2.1.4-6	1	2	67

Tier 2: Prompt appropriate?

Grade	Item	No	Yes	Percentage Yes
4	S4.A.1.1.2A-3	0	2	100
4	S4.A.1.3.1A-4	0	2	100
4	S4.A.2.1.4-10	1	1	50
4	S4.A.2.1.4-11	1	1	50
4	S4.A.2.1.4-5	0	2	100
4	S4.A.2.2.1-4	0	2	100
4	S4.A.3.1.1-5	1	1	50
4	S4.A.3.1.1-6	0	2	100
4	S4.A.3.3.2-4	1	1	50
4	S4.B.1.1.3-2	0	2	100
4	S4.B.1.1.3-4	1	1	50
4	S4.B.1.1.4-4	0	2	100
4	S4.B.1.1.5.A-3	0	2	100
4	S4.B.2.1.1-4	0	2	100
4	S4.B.2.1.1-6	0	2	100
4	S4.B.3.1.1-7	0	2	100
4	S4.B.3.1.1-8	1	1	50
4	S4.B.3.2.3-2	1	1	50
4	S4.B.3.3.5-6	0	2	100
4	S4.C.1.1.1A-3	0	2	100
4	S4.C.1.1.1A-5	1	1	50
4	S4.C.1.1.2-9	1	1	50
4	S4.C.3.1.1A-4	0	2	100
4	S4.C.3.1.3-5	1	1	50
4	S4.D.1.1.1-5	0	2	100
4	S4.D.1.2.1-4	0	2	100
4	S4.D.1.2.2-3	0	2	100
4	S4.D.2.1.2-4	0	2	100
4	S4.D.2.1.2A-3	0	2	100
4	S4.D.2.1.3A-2	0	2	100
8	S8.A.1.3.2-6	0	3	100
8	S8.A.1.3.2-8	2	1	33

(continued)

Grade	Item	No	Yes	Percentage	Yes
8	S8.A.2.1.1A-6	0	3		100
8	S8.A.2.1.1A-8	0	3		100
8	S8.A.2.2.1-5	0	3		100
8	S8.A.2.2.1-6	1	2		67
8	S8.A.2.2.3-4	0	3		100
8	S8.A.3.1.5-13	0	3		100
8	S8.A.3.1.5B-2	1	2		67
8	S8.A.3.1.5B-6	0	3		100
8	S8.A.3.3.2-4	2	1		33
8	S8.B.1.1.3-11	1	2		67
8	S8.B.1.1.3-8	0	3		100
8	S8.B.2.1.1-7	0	3		100
8	S8.B.3.1.1-5	0	3		100
8	S8.B.3.1.1-7	0	3		100
8	S8.B.3.1.2-2	0	3		100
8	S8.B.3.2.1-7	0	3		100
8	S8.B.3.2.1-8	0	3		100
8	S8.B.3.3.3-2	0	3		100
8	S8.B.3.3.3-4	0	3		100
8	S8.C.1.1.2-6	0	3		100
8	S8.C.1.1.2-8	0	3		100
8	S8.C.2.2.3-3	0	3		100
8	S8.C.2.2.3-6	0	3		100
8	S8.D.1.1.2-5	0	3		100
8	S8.D.1.1.2-7	0	3		100
8	S8.D.1.1.2-9	1	2		67
8	S8.D.1.2.1-4	0	3		100
8	S8.D.1.3.1-5	0	3		100
11	S11.A.1.3.2-4	1	2		67
11	S11.A.2.1.1-6	0	3		100
11	S11.A.2.1.3-6	1	2		67
11	S11.A.2.1.3-7	1	2		67
11	S11.A.2.2.1-4	0	3		100
11	S11.A.2.2.1-5	1	2		67
11	S11.A.2.2.2-2	0	3		100
11	S11.A.3.1.2-11	0	3		100
11	S11.A.3.1.2-7	0	3		100
11	S11.A.3.1.2-9	0	3		100
11	S11.A.3.3.3-10	0	3		100
11	S11.A.3.3.3-7	0	3		100
11	S11.B.1.1.2-8	0	3		100
11	S11.B.3.1.3-5	0	3		100
11	S11.B.3.1.4A-3	1	2		67
11	S11.B.3.1.4B-11	0	3		100
11	S11.B.3.1.4B-12	1	2		67
11	S11.B.3.2.3-4	0	3		100
11	S11.B.3.2.3-8	1	2		67

(continued)

Grade	Item	No	Yes	Percentage	Yes
11	S11.C.1.1.1-3	0	3		100
11	S11.C.2.2.3-2	0	3		100
11	S11.C.2.2.3-4	0	3		100
11	S11.C.3.1.3-6	0	3		100
11	S11.C.3.1.3-8	1	2		67
11	S11.D.1.1.3-3	0	2		100
11	S11.D.1.1.3-5	0	3		100
11	S11.D.1.2.2-2	0	3		100
11	S11.D.1.2.2-5	0	3		100
11	S11.D.1.2.2-7	0	3		100
11	S11.D.2.1.4-6	0	3		100

Tier 2: Tier aligned?

Grade	Item	No	Yes	Percentage	Yes
4	S4.A.1.1.2A-3	0	2		100
4	S4.A.1.3.1A-4	0	2		100
4	S4.A.2.1.4-10	0	2		100
4	S4.A.2.1.4-11	0	2		100
4	S4.A.2.1.4-5	0	2		100
4	S4.A.2.2.1-4	0	2		100
4	S4.A.3.1.1-5	0	2		100
4	S4.A.3.1.1-6	0	2		100
4	S4.A.3.3.2-4	0	2		100
4	S4.B.1.1.3-2	0	2		100
4	S4.B.1.1.3-4	0	2		100
4	S4.B.1.1.4-4	0	2		100
4	S4.B.1.1.5.A-3	0	2		100
4	S4.B.2.1.1-4	0	2		100
4	S4.B.2.1.1-6	0	2		100
4	S4.B.3.1.1-7	0	2		100
4	S4.B.3.1.1-8	0	2		100
4	S4.B.3.2.3-2	2	0		0
4	S4.B.3.3.5-6	0	2		100
4	S4.C.1.1.1A-3	0	2		100
4	S4.C.1.1.1A-5	0	2		100
4	S4.C.1.1.2-9	0	2		100
4	S4.C.3.1.1A-4	0	2		100
4	S4.C.3.1.3-5	0	2		100
4	S4.D.1.1.1-5	0	2		100
4	S4.D.1.2.1-4	0	2		100
4	S4.D.1.2.2-3	0	2		100
4	S4.D.2.1.2-4	0	2		100
4	S4.D.2.1.2A-3	0	2		100
4	S4.D.2.1.3A-2	0	2		100
8	S8.A.1.3.2-6	1	2		67

(continued)

Grade	Item	No	Yes	Percentage	Yes
8	S8.A.1.3.2-8	0	3		100
8	S8.A.2.1.1A-6	0	3		100
8	S8.A.2.1.1A-8	0	3		100
8	S8.A.2.2.1-5	0	3		100
8	S8.A.2.2.1-6	0	3		100
8	S8.A.2.2.3-4	2	1		33
8	S8.A.3.1.5-13	1	2		67
8	S8.A.3.1.5B-2	0	3		100
8	S8.A.3.1.5B-6	1	2		67
8	S8.A.3.3.2-4	0	3		100
8	S8.B.1.1.3-11	1	2		67
8	S8.B.1.1.3-8	2	1		33
8	S8.B.2.1.1-7	0	3		100
8	S8.B.3.1.1-5	0	3		100
8	S8.B.3.1.1-7	0	3		100
8	S8.B.3.1.2-2	0	3		100
8	S8.B.3.2.1-7	0	3		100
8	S8.B.3.2.1-8	0	3		100
8	S8.B.3.3.3-2	1	2		67
8	S8.B.3.3.3-4	1	2		67
8	S8.C.1.1.2-6	1	2		67
8	S8.C.1.1.2-8	1	2		67
8	S8.C.2.2.3-3	0	3		100
8	S8.C.2.2.3-6	0	3		100
8	S8.D.1.1.2-5	0	3		100
8	S8.D.1.1.2-7	0	3		100
8	S8.D.1.1.2-9	0	3		100
8	S8.D.1.2.1-4	0	3		100
8	S8.D.1.3.1-5	0	3		100
11	S11.A.1.3.2-4	0	3		100
11	S11.A.2.1.1-6	0	3		100
11	S11.A.2.1.3-6	0	3		100
11	S11.A.2.1.3-7	0	3		100
11	S11.A.2.2.1-4	0	3		100
11	S11.A.2.2.1-5	0	3		100
11	S11.A.2.2.2-2	0	3		100
11	S11.A.3.1.2-11	0	3		100
11	S11.A.3.1.2-7	0	3		100
11	S11.A.3.1.2-9	0	3		100
11	S11.A.3.3.3-10	0	3		100
11	S11.A.3.3.3-7	0	3		100
11	S11.B.1.1.2-8	0	3		100
11	S11.B.3.1.3-5	0	3		100
11	S11.B.3.1.4A-3	0	3		100
11	S11.B.3.1.4B-11	0	3		100
11	S11.B.3.1.4B-12	0	3		100
11	S11.B.3.2.3-4	0	3		100

(continued)

Grade	Item	No	Yes	Percentage	Yes
11	S11.B.3.2.3-8	0	3		100
11	S11.C.1.1.1-3	0	3		100
11	S11.C.2.2.3-2	0	3		100
11	S11.C.2.2.3-4	0	3		100
11	S11.C.3.1.3-6	0	3		100
11	S11.C.3.1.3-8	0	3		100
11	S11.D.1.1.3-3	0	2		100
11	S11.D.1.1.3-5	0	3		100
11	S11.D.1.2.2-2	0	3		100
11	S11.D.1.2.2-5	0	3		100
11	S11.D.1.2.2-7	0	3		100
11	S11.D.2.1.4-6	0	3		100

Rationales & Recommendations

Below, are rater comments organized by grade and tier, and then by rater and item ID. These comments represent teachers rationales and recommendations, largely, although not exclusively, based on any “No” ratings they submitted.

Science, Grade 4 , Tier 1

rater	Item	Comment
Kathy Buclous	S4.A.2.2.1-3	I
Kelly Bucy	S4.A.2.2.1-3	Some of my previous students who lived an urban setting do not have a yard. They might not know what that is even though it is shown in the picture. I would change the wording to say "temperature outside".
Kathy Buclous	S4.A.3.1.1-3	A more updated clock
Kelly Bucy	S4.A.3.1.1-3	Hopefully, the students do not think that the tree is fake - like in an artificial Christmas tree?
Kelly Bucy	S4.A.3.1.1-4	I would make sure the pictures are clear. Some people build ponds in their backyards. Also, some urban students may not understand the work "yard".
Kathy Buclous	S4.A.3.3.2-3	Seems level 2
Kelly Bucy	S4.A.3.3.2-3	I think the pictures should be in a cycle instead of a straight line with one picture above.
Kelly Bucy	S4.B.1.1.3-3	The distractors are difficult, especially the cow. When it is hot out, I often see lots of flies around cows. I think it is a fair question, just more difficult.
Kelly Bucy	S4.B.1.1.4-7	I think the prompt does direct an appropriate response. However, at a Tier 1 level I would suggest just one body part and function instead of 2: Which body part shows how the rabbit hears?
Kelly Bucy	S4.B.2.1.1-5	I would suggest possibly using another animal other than a bird (too close to a seagull which is found at the ocean).
Kathy Buclous	S4.B.3.3.5-5	I don't believe monkey bars is a term used
Rachel Boyer	S4.B.3.3.5-9	I would consider rewording the last answer choice. It currently states throwing away trash. But that description sounds like you're stating they are throwing away the trash. Perhaps a description such as " throwing trash on the ground"
Kelly Bucy	S4.C.3.1.3-3	The question is difficult since the swing is in the tree. They are both next to the slide and kids love to play in trees by climbing. I think the choice needs to be clearer. The picture will need to be altered.
Rachel Boyer	S4.D.1.2.1-3	I'm not sure if I'm overthinking this one. But I'm thinking of students in a low socioeconomic area that may have never seen steak before. Perhaps use another more common meat item such as a hamburger or hot dog?
Rachel Boyer	S4.D.1.2.2A-3	I rated everything as yes but I would maybe consider selecting another choice option rather than a tree. We discuss where paper products come from and that being a tree. So I could see how some students, likely those students with a little more higher order thinking from Bloom's could possibly make that connection that paper comes from a tree so it is recycled. Just a thought

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rater	Item	Comment
Rachel Boyer	S4.D.2.1.2-5	I struggled a little with analyzing this question. For Tier 1 it states "Basic recall and/or application" where Tier 2 references "Recall, application and strategic thinking". Tier 1 also involved 1 step whereas Tier 2 may involve 2 steps. The questions asks which forecast shows no rain. I could see how for a Tier 1 student there would appear to be 2 correct answers, the cloudy day and the sunny day. They would be looking for a picture that actually does not show rain. I would see that as a higher order question, more along the lines of application and strategic thinking. Its almost like a 2 step process to think through. First you would select that there is no rain for either the sunny or cloudy picture but you'd have to think more strategically in that there could possibly be rain on a cloudy day. Therefore, sunny would be the only possible correct answer. I think I would flip the question around and ask "Which forecast shows rain". I think this would be a more closely aligned with a Tier 2 rather than Tier 1.
Kelly Bucy	S4.D.2.1.2-5	There is only rain in one of the responses. Clouds do not mean rain. I would suggest the prompt be changed to: "Which picture shows the forecast for rain."

Science, Grade 4 , Tier 2

rater	Item	Comment
Megan Lieberwirth	S4.A.2.1.4-10	At first glance of the prompt, I feel like any of the answers would be a correct answer. When I reread the information under the picture and realized the picture depicted a hot summer day then it made more sense. Could you put which temperature would match the picture of a hot sunny day?
Megan Lieberwirth	S4.A.2.1.4-11	I don't like the description of sunny day. It can be 20 degrees and still be a sunny day. I know a person would not be out in 20 and 30 degree weather but it could still be sunny on those days.
Cammie Elwood	S4.A.3.1.1-5	Use of the negative phrasing may test a students understanding of language rather than scientific concept. This is the third question using the negative phrasing.
Cammie Elwood	S4.A.3.1.1-6	Use of the negative phrasing may test a students understanding of language rather than scientific concept.
Cammie Elwood	S4.A.3.3.2-4	Should include arrow on the bottom to make it look like a cycle.
Megan Lieberwirth	S4.A.3.3.2-4	The child can select an appropriate prompt but the answer and the pictures don't seem to match.
Cammie Elwood	S4.B.1.1.3-4	The phrase "living things" is not needed in the prompt. It is extraneous and unnecessary. May cause students to focus on whether the items are living rather than what are the food items a deer eats.
Cammie Elwood	S4.B.3.1.1-8	Use of "has never been" may confuse students because of difficulties in understanding the use of this phrase that reflects a negative state. Testing science concept or understanding use of language?
Cammie Elwood	S4.B.3.2.3-2	Bats are not a typical animal that is referred to as a hibernating animal.

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rater	Item	Comment
Megan Lieberwirth	S4.B.3.2.3-2	I said no because I think the student needs to make the assumption that the picture of the bat is sleeping because it is winter. Just by looking at the picture I would have no idea that the bat is hibernating because it is winter. It just looks like a sleeping bat. So I could see a student picking migrate because it is a bat and bats fly. In the description of the picture can it state, here is a picture of the bat in the winter. Then ask the same question? I think there is less ambiguity then.
Cammie Elwood	S4.B.3.3.5-6	Smog is a type of pollution that may not be familiar to all students especially if they do not live in a more populated area. Also technically smog can kill fish so there may be more than one correct answer.
Cammie Elwood	S4.C.1.1.1A-5	"Same form" could be confusing –Use "state of matter"
Cammie Elwood	S4.C.1.1.2-9	The language "lighter" may be confusing for some learners and may need to be defined as "weighs less". Students who are economically disadvantaged may not be familiar with all of the fruits presented.
Cammie Elwood	S4.C.3.1.3-5	A playground is defined as "an outdoor area provided for children to play in, especially at a school or public park." Technically the bike is in or on the playground. Change playground in prompt to "swings."

Science, Grade 8 , Tier 1

rater	Item	Comment
Stacy Miller	S8.A.1.3.2-9	A bit confused by introduction. I don't see a picture of a graph and then 3 graphs...only see 3 graphs.
Amy Mattioli	S8.A.2.1.1A-5	While it is hard to tell on this picture, could you change the police car to just a regular car? Police cars are known for going fast.
Stacy Miller	S8.A.2.2.1-3	Bias: The background information states that the three different scales are used to measure his weight, then asks them to identify the correct one. Students that are literal thinkers may be confused by the way it is stated.
Camille Dean-Thomas	S8.A.2.2.1-3	The deli scale looks a lot like a home bathroom scale. Consider changing the picture.
Stacy Miller	S8.A.2.2.3-3	Students with lower socioeconomic status might not have experience with online shopping.
Amy Mattioli	S8.A.2.2.3-3	The self-checkout machine can be confusing as that is used for shopping. The picture of the computer is also older, and maybe a picture of a laptop would be more relevant.
Stacy Miller	S8.A.3.1.5A-1	Prompt appropriateness: The prompt could be reworded so that a remote is not a somewhat reasonable answer (it is the switch they use to activate the television). A simple where does the energy for a television come from might be more direct.
Amy Mattioli	S8.A.3.1.5A-1	The wording the prompt can be confusing and I feel that most students would pick the remote control. We use the remote to power on the television. Could the wording of the question goes such as where would you plug in the TV to get power? While you are bringing in the power of the plug, it would be a more direct answer. This would be a good tier 2 question.

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rater	Item	Comment
Camille Dean-Thomas	S8.A.3.1.5A-1	Consider changing the wording. This level of learner knows that a remote has a power button. Where does the power come from to make the TV work?
Amy Mattioli	S8.A.3.1.5B-3	While this is a tier 1 question, there is no comparing or contrasting of systems. Rather, this question asks a direct question about what a body part does. Could the question include something such as, Joe heard a dog barking, which body part would he have used to hear?
Amy Mattioli	S8.A.3.1.5B-7	The hand could be used to cover the nose and mouth, which may be the way in which the students comprehend the question. I would choose another body part so that the student is thinking more about what happens when covered, not how they will be covered.
Amy Mattioli	S8.B.2.1.1-5	Can you take out the wording of , "that has changed over time," because that is just adding to the details of the prompt but doesn't help the student with choosing an answer? Instead, the additional words may be a distractor for the students.
Stacy Miller	S8.B.3.1.1-4	The term "organism" may be unfamiliar to many students at the Tier 1 level. Since all choices are animals, that could be a possible substitution.
Amy Mattioli	S8.B.3.1.1-4	For this level, the elephant may be a little confusing because of its overall size. If a student doesn't know what eats a frog, the worm would be taken out due to its size, leaving the elephant and the snake. Could the elephant be changed with another picture?
Camille Dean-Thomas	S8.B.3.1.1-4	Students who have less contact with wild life may not know the difference between a snake and a worm.
Stacy Miller	S8.B.3.2.1-4	This resembles more of a tier 2, giving a situation and asking students to analyze impact. Tier 1 might ask to identify picture of deforestation instead of choosing which animal would be impacted by the deforestation.
Camille Dean-Thomas	S8.B.3.3.3-1	Consider removing plastic bottles from the choices. They are mentioned in the question so students who do not understand the questions will likely pick them.
Stacy Miller	S8.B.3.3.3-3	Prompt appropriateness/bias: a student that is a literal thinker (as many students with autism are), the phrasing of the prompt could cause difficulty in choosing one correct answer. All items "could" be thrown in the compost pile, but only 1 "should" be thrown.
Amy Mattioli	S8.B.3.3.3-3	Can you add into the prompt, be thrown away in THIS compost pile?
Camille Dean-Thomas	S8.B.3.3.3-3	Composting is not something all kids are familiar with depending on where they live. Kids who live in cities and/or apartments have less of a chance to succeed with this as compared to kids who live on farms.
Stacy Miller	S8.C.1.1.2-7	Students are required to analyze a chart and generalize the temperature on the chart to the temperature of an object. The prompt asks students to identify the "picture that shows the temperature"...objects don't show temperatures. More appropriate to identify color that represents different state.

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rater	Item	Comment
Amy Mattioli	S8.C.1.1.2-7	If students are unable to read the words, solid, liquid and gas, then they aren't able to correctly answer the question without guessing. The colors of the solid, liquid and gas don't give any answers of what that state of matter directly relates to making it impossible for the student to answer the question without knowing the words, solid, liquid and gas.
Camille Dean-Thomas	S8.C.1.1.2-7	Many tier 1 learners cannot read. The administrator should read solid, liquid and gas to the student.
Amy Mattioli	S8.D.1.1.2-8	The water run off can also change the earth's service depending on how much water there is, and it can also be sudden. It is hard to correctly choose one answer in this example.

Science, Grade 8 , Tier 2

rater	Item	Comment
Kathryn Majewski	S8.A.1.3.2-6	This question is confusing and the graphics are very complex.
Wendy Warfield-Fuchs	S8.A.1.3.2-6	Wrong skill should be S8B3.2.1a - recognize impact humans have on habitat
Wendy Warfield-Fuchs	S8.A.1.3.2-8	Word "end" replace with top or bottom. And should arrows from owl point to the prey...?
Christy Worhach	S8.A.1.3.2-8	The arrows in the the first part of the food web are pointing in the wrong direction. So if a student were to use the arrows they could assume the worm could be correct as well. The arrows need to point in the direction of energy flow.
Kathryn Majewski	S8.A.2.1.1A-6	This skill doesn't explain that the timers correlate to the speed of the animal. I think there should be more information linking the animal to it's speed.
Kathryn Majewski	S8.A.2.1.1A-8	It doesn't specify the temperature per picture, right? I can't read the chart. However, a student cannot assume that B has a different temperature than C, just because there is snow pictured in C.
Christy Worhach	S8.A.2.1.1A-8	The table is not necessary in the way the question is presented.
Wendy Warfield-Fuchs	S8.A.2.2.1-6	Add which instrument to measure small amount of salt?
Kathryn Majewski	S8.A.2.2.3-4	I don't think the question actually aligns to the standard. Asking to compare a laptop to a desktop does not consider how the technology assists humans.
Wendy Warfield-Fuchs	S8.A.2.2.3-4	does address the AEC for how the technology enhances human abilities the prompt is just asking students to identify technologies with similarities.
Wendy Warfield-Fuchs	S8.A.3.1.5-13	Tier 2 I think can use the phrase a planet's orbit around sun. I am not sure how this example of the solar system addresses the AEC. Perhaps use S8A2.1.1a Use observations (limited to duration,weight, volume, distance, or temperature)to identify relationships (e.g.,bigger/smaller, faster/slower, higher/lower). Thie compenent a distance from the sun doesn't change its stable so the orbit speed stays the same and a stable relativity. A change in the a component of the water cycle will change the result. I hope that makes sense

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rater	Item	Comment
Wendy Warfield-Fuchs	S8.A.3.1.5B-2	technically any cloud in the sky is part of the water cycle... the . prompt does say "WATER" and this is tier 2 but maybe consider using wind or something other than a cloud
Kathryn Majewski	S8.A.3.1.5B-6	This question doesn't address systems working together, since red blood cells and heart are both part of the same system.
Kathryn Majewski	S8.A.3.3.2-4	This question is confusing, I'm not sure what the actual prompt is asking!
Wendy Warfield-Fuchs	S8.A.3.3.2-4	awkward sentence for the prompt: "shows the moon showing..."
Christy Worhach	S8.A.3.3.2-4	This question is confusing as to what it is actually asking. I had to read it several times before it made sense. The question should ask about the phases and the order in which we see the moon.
Kathryn Majewski	S8.B.1.1.3-11	Does the question really address the standard? The standard expects the student to categorize...
Christy Worhach	S8.B.1.1.3-11	The wording for the prompt should say can live in or on both water and land. The question now could be taken as one on land and one in water.
Kathryn Majewski	S8.B.1.1.3-8	I don't think this one addresses the standard. It doesn't ask which is a marsupial. It only asks to identify which carries a baby in a pouch. Therefore, it's not actually categorizing.
Wendy Warfield-Fuchs	S8.B.1.1.3-8	Characteristic of a mammal is live birth. If skill is about marsupials then remove other mammal and use bird or reptile...
Kathryn Majewski	S8.B.3.1.1-5	The graphics are extremely confusing for this one. It's too complex; I'd suggest to have the sequence with one component missing, and then have the student pick which component is missing, instead of having to choose from three similar looking pictures.
Wendy Warfield-Fuchs	S8.B.3.1.1-5	I am worried the response choices are too, too similar and the student response would just be guessing.
Kathryn Majewski	S8.B.3.1.1-7	Again, this one is pretty confusing. I'd simplify by expecting the student to fill in a missing part of the food chain, and not have them choose from the three complicated options.
Wendy Warfield-Fuchs	S8.B.3.1.1-7	Again answer responses are so similar
Wendy Warfield-Fuchs	S8.B.3.2.1-7	I thought dams could also destroy fish habitats...? maybe this answer choice is not a great option...?
Wendy Warfield-Fuchs	S8.B.3.3.3-2	the AEC is to identify ways to recycle. this is item is demonstrating reasons why we should recycle, which is related but not sure it's exactly meeting the expectation of the AEC...?
Kathryn Majewski	S8.B.3.3.3-4	The prompt does not tell students what constitutes an item for composting.
Wendy Warfield-Fuchs	S8.C.1.1.2-6	Not really addressing the skill just asking student to match picture to sample
Kathryn Majewski	S8.C.1.1.2-8	I'm not sure how this would be adapted for students with VI that are not using braille, because it would have to be explained verbally.
Wendy Warfield-Fuchs	S8.C.1.1.2-8	Not really addressing the skill just asking student to match the sample
Christy Worhach	S8.C.1.1.2-8	The question should include something related to the density (lighter) substance.
Wendy Warfield-Fuchs	S8.C.2.2.3-3	Bias in favor of rural or country communities

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rater	Item	Comment
Christy Worhach	S8.C.2.2.3-3	A student may not know what material the stove is using. Describing it as a coal stove may be necessary.
Christy Worhach	S8.C.2.2.3-6	The wording of this question could be confusing for a student. The pictures are structures that are to create resources not the actual resource. Could be reworded to ask which uses a resource that is non-renewable.
Kathryn Majewski	S8.D.1.1.2-5	I think by telling the student it is a picture of a landslide, it would be confusing to then ask what a cliff collapsing would be, especially for students with visual impairments. It would be better to say which picture shows a change in the Earth's surface or something along those lines.
Wendy Warfield-Fuchs	S8.D.1.1.2-9	Volcanic eruption is huge but losing the beach and almost your house is a huge crisis for coastal communities.
Christy Worhach	S8.D.1.1.2-9	A beach erosion could also be considered a large change to the earth's surface.

Science, Grade 11 , Tier 1

rater	Item	Comment
Paula Conrad	S11.A.2.1.1-1	More of a Tier 2 question—"Graphics are more complex and/or abstract and may include information about processes, relationships, events, etc" The pictures require more inference than a Tier 1 should require (and very similar pictures)
Paula Conrad	S11.A.2.1.1-5	I think the word density is a little too difficult, but I believe the pictures aid in making this a Tier 1 rather than a Tier 2
Lesley Herman	S11.A.2.2.1-6	A spring scale may be unfamiliar.
Paula Conrad	S11.A.2.2.1-6	Socioeconomic. I am not sure that all students have had the opportunity to use the scale to measure produce at the supermarket. They are probably all used to a scale weighing a person, but not a scale to weigh produce. Especially since cheaper apples are already in pre-measured bags. Also, do schools have this type of scale to measure things for those students who have never measured produce before?
Lesley Herman	S11.A.3.1.2-10	There are a few factors that must be understood to answer this question. The student must demonstrate understanding of temperature, increase, precipitation, temperature at which snow, rain, etc will occur. Perhaps more of a tier 2 question.
Lesley Herman	S11.A.3.1.2-6	This seems to require more strategic thinking to answer. Perhaps consider including it as a tier 2 prompt.
Paula Conrad	S11.A.3.3.3-6	I think this is more a Tier 2 question, as it measure the understanding of "just passed" rather than which way the front is moving. It requires knowing the way it is moving and understanding which city was "just". Perhaps limit it to two answer—one before and one after?
Paula Conrad	S11.B.3.1.3-1	"Stalked" is a vocabulary word more aligned with Tier 2. "Language used in directions is limited and direct. Every day, familiar vocabulary..." Also..I could see the argument that the bear stalking the deer will lead to the animals fighting.

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rater	Item	Comment
Paula Conrad	S11.B.3.2.3-6	The pictures are too confusing. I had to really zoom in and I'm still not sure what the first one is--is the picture clear on which one is overflowing?
Paula Conrad	S11.C.1.1.1-4	One could argue that the bracelet could also be made from gold. Color matching will be important here. Perhaps put another (non jewelry) item?
Lesley Herman	S11.D.1.2.2-3	Perhaps some scaffolding to understand "natural resources"...include a definition-natural resources occur in nature...
Paula Conrad	S11.D.1.2.2-3	Does the student understand the word "harvesting" at Tier 1?
Lesley Herman	S11.D.2.1.4-5	This requires the student to be able to identify the temperature relative to precipitation. I feel that it would be better suited for tier 2

Science, Grade 11 , Tier 2

rater	Item	Comment
Kathryn Majewski	S11.A.1.3.2-4	I think the sink handle and faucet are too similar. I'd get rid of the faucet and replace with something else.
Heather Morgan	S11.A.1.3.2-4	Prompt is a bit confusing. Not sure how to change it. ' Which pictures shows the item that could have been used to cause the sink to overflow?'
Ashleigh Rissler	S11.A.2.1.3-6	Again the prompt asks for which picture and there are no pictures as responses.
Heather Morgan	S11.A.2.1.3-6	When reading the question aloud, add in that the proctor is able to point to the axis on the graph being described.
Ashleigh Rissler	S11.A.2.1.3-7	The prompt asks "which picture" and there are no pictures as answers. Student may point to the graph because the prompt is asking for a picture.
Ashleigh Rissler	S11.A.2.2.1-5	Prompt asks which picture but there are no picture responses.
Heather Morgan	S11.A.2.2.1-5	The word 'picture' to describe the words may be a bit confusing.
Heather Morgan	S11.A.3.1.2-7	Not sure if it is just because of the reviewing of the items, but the size of the pictures and graph are small and may need to be enlarged.
Kathryn Majewski	S11.A.3.1.2-9	I think this one would confuse the students. Most students would know what a light switch does. I'm not sure many PASA-eligible students would understand a circuit. I'd use a more concrete example.
Heather Morgan	S11.A.3.3.3-7	Pictures are small and difficult to see
Heather Morgan	S11.B.3.1.3-5	*I believe the arrows pointing to the bear and bobcat and in the wrong direction. It seems that the deer eats everything on the web.
Heather Morgan	S11.B.3.1.4A-3	A desert does get some rain, so the phrasing of the question could be, "Which picture shows the weather that would happen more often in the rainforest?" or something along that line.
Kathryn Majewski	S11.B.3.1.4B-12	I think this one would be confusing for the students. Technically some plants do get "food" in the form of extra nutrients.
Ashleigh Rissler	S11.B.3.1.4B-12	Prompt asks for picture response but there are no picture responses
Kathryn Majewski	S11.B.3.2.3-8	Floods can cause trees to fall, too.

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rater	Item	Comment
Ashleigh Rissler	S11.B.3.2.3-8	Prompt asks for a picture response but does not have picture responses
Heather Morgan	S11.B.3.2.3-8	Picture could show a bit more destruction as a tornado would follow a neat path.
Kathryn Majewski	S11.C.1.1.1-3	Maybe use something that students would actually know... I'm not sure a gold bar is something that they would learn about now.
Heather Morgan	S11.C.1.1.1-3	Does the statement need to have the word 'three' in it?
Ashleigh Rissler	S11.C.3.1.3-8	Prompt asks which picture and does not have pictures as a response.
Kathryn Majewski	S11.D.1.1.3-5	I think the picture choice for the valley is confusing, since it also has hills.
Kathryn Majewski	S11.D.2.1.4-6	Is the map also labeled with A, B, and C? It would be hard for some students to have to match the state by it's shape. Perhaps add the name in.