Washington Comprehensive Assessment of Science Test Design & Item Specifications Webinars Questions and Answers

This document provides answers to questions submitted during the Grade 5, Grade 8, and Grade 11 Test Design and Item Specifications webinars in February 2020. The questions have been grouped by categories.

Science Standards

Questions

- **What are the differences between the Science and Engineering Practices and the Crosscutting Concepts, and where in the Test Design and Item Specifications document is that information?**
- **Which pages can I find more specific information about the differences between Science and Engineering Practices and Crosscutting Concepts?**
- **Are there other opportunities for becoming more knowledgeable about navigating through the SEP's and CCC's?**

Answer

Pages 10 through 12 of the Test Design and Item Specifications documents (grades 5, 8, and 11) give a brief description of the Science and Engineering Practices, the Disciplinary Core Ideas, and the Crosscutting Concepts. The documents can be found on the WCAS Educator Resources webpage under "Test Design & Item Specifications".

To dig deeper, *The Framework for K-12 Science Education* has a chapter for each of the dimensions:

- Science and Engineering Practices in Chapter 3
- Disciplinary Core Ideas in Chapters 5 through 8
- Crosscutting Concepts in Chapter 2

There is also a Next Generation Science Standards (NGSS) Appendix for each dimension:

- Science and Engineering Practices in Appendix F
- Disciplinary Core Ideas in Appendix E
- Crosscutting Concepts in Appendix G

The NGSS website has a wealth of resources on the "Understand the Standards" webpage. Another great resource are STEM Teaching Tools, specifically Tool 41 about crosscutting concept prompts in the classroom and Tool 30 about task formats for 3-dimensional assessment design.

WCAS Alignment

Questions

- **Is there a way I can check my understanding of how alignment works for the WCAS?**
- **Are there other opportunities to practice item alignment?**

Answer

WCAS Training Tests are available for grades 5, 8, and 11. The Training Tests are accessed through the WCAP portal.

Training Test lesson plans are available for each grade-level test. These documents include ways to practice using the tools for each item type, an answer key, and standards alignment for each question on the Training Tests. The lesson plans are located on the WCAS Educator Resources webpage in the "Training Test Lesson Plans" section. See Table 1, on p. 7 of each document for information about alignment.

We reviewed one cluster during each grade-level webinar. There are additional standalones and item clusters in the training test that you can use to practice item alignment.

Test Development

Question

During data review, is data from the entire state used, or is it region by region?

Answer

Each field test item is seen by approximately 2,000 to 3,000 students from around the state. The field test items are spiraled throughout the state to better reflect the state demographics. Multiple levels of analyses are done to ensure that items performing differently among different groups are reviewed closely for bias. During the Content Review with Data Work Group (step 8 of the Science Assessment Development Cycle, found on pages 1 to 2 of the Test Design and Item Specifications document), educators from across the state use the data from the analyses to recommend if each item should advance into the item bank.

Question

When will the next opportunity be to ask questions about the WCAS?

Answer

We encourage educators to reach out with any questions they might have about the WCAS. Please send your questions to science@k12.wa.us

There are four major work groups with educators in a year, as shown in the Science Assessment Development Cycle on page 9 of the Test Design and Item Specifications document. The Science Assessment Professional Development Opportunities webpage shows the dates for those work groups. We also email out invitations to apply through GovDelivery.

If you would like to receive GovDelivery messages sent to our listserv, go to the Subscribe page for GovDelivery. Enter your email address. On the Subscriptions page, select Content Areas > Science, then select the grade band(s) for which you would like to receive information.

Test Design

Questions

- **On any year's WCAS, what percentage of questions would be Life Science, Physical Science, or Earth and Space Science?**
- **Can you provide a percentage of how much each category is involved in the assessment?**

Answer

Page 9 in the Test Design and Item Specifications document for each grade, describes the test blueprint. The table on that page shows how much of the Next Generation Science Standards (NGSS) are related to each of the three-dimensional reporting areas: Practices and Crosscutting Concepts in Physical Sciences, Practices and Crosscutting Concepts in Life Sciences, and Practices and Crosscutting Concepts in Earth and Space Sciences. That percentage matches the breakdown on the WCAS. Multiplying the total points on the test by those percentage ranges gives the score point range for each science domain on the WCAS. Remember, the Engineering, Technology, and Applications of Science domain is bundled alongside the other domain performance expectations; they are assessed, but not reported separately.

Question

Can students earn partial credit on items on the WCAS?

Answer

On the WCAS, all items are worth either 1 or 2 points. Students cannot earn partial credit, only 0, 1, or 2 points per item. This includes multipart items that have a part A and a part B, and sometimes a part C. Whether the item is worth 1 or 2 points depends on relationship between the parts of the item.

A two-part item is worth 1 point when part A and part B are closely related. For example, in a multipart item where part B asks, "Which statement describes a reason for the answer to part A?", if the student was to get part A wrong, they would be likely to get part B wrong as well. We don't want students to lose 2 points for an item with parts that are this dependent on each other. For an example of a two-part item that is worth one point, see question 4 in the grade 5 Training Test, or questions 1 and 3 in the grade 11 Training Test.
A two-part item is worth 2 points when the answer to part A is not dependent on the answer to part B. For an example of a two-part item that is worth two points, see question 2 in the

grade 5 Training Test, or questions 1, 2, and 5 in the grade 8 Training Test, or questions 2, 6, 7, or 10 in the grade 11 Training Test.

Reporting

Question

Is OSPI going to report by more than just the three current reporting areas?

Answer

One of our goals with the WCAS is to honor the structure of the standards and to closely match how the standards are meant to be taught in the classroom. The standards are designed to have the three dimensions woven together, so our test questions are all designed to be two- or three-dimensional.

For a given item on the WCAS, if a student was to not answer an item correctly, we cannot be sure which dimension (Science and Engineering Practice, Disciplinary Core Idea, or Crosscutting Concept) is responsible for the student not earning points. So, we report an overall scale score for a student, as well as the percentage of points earned in 3 three-dimensional reporting areas: Practices and Crosscutting Concepts in Physical Sciences, Practices and Crosscutting Concepts in Life Sciences, and Practices and Crosscutting Concepts in Earth and Space Sciences.

The WCAS and our standards are relatively new. We have data for only two administrations of the WCAS. As time goes on and we gather more data, we may be able to share out more detailed information, but for now we will continue to report student scores with an overall scale score and the percentage of points earned in the three-dimensional reporting areas.

Question

Does OSPI plan to do a formal release of any WCAS items like was done for previous state-wide testing?

Answer

A formal release of a limited number of items for each grade level is planned within the next two years.

Training Tests

Question

Are students limited in the number of times to take the training test?

Answer

When logging into a training test, please disregard the message that says, "This is opportunity 1 of 99". This is part of the test delivery vendor's system. Training Tests can be accessed an unlimited number of times, and all grade levels can be accessed by all students. Please use the

Training Tests to help students practice answering questions in the online testing environment.

Question

Is what we see on the training test similar to what students see on the WCAS?

Answer

All items on the Training Tests were developed using the same process as all items on the WCAS. Pages 1 and 2 of the Test Design and Item Specifications describe the Science Assessment Development process. The items were all recommended for acceptance by a panel of educators at a data review meeting.

It is important to prepare students to interact with the online testing environment. The standalone items and clusters selected for the WCAS training tests represent the different domains of science, including Engineering, Technology, and Applications of Science, a wide range of Science and Engineering Practice's, Crosscutting Concepts, a variety of item types, and also the locking mechanism unique to the WCAS.

The Training Tests have been recently expanded to include 2 new standalone items in grade 5, 2 new standalone items in grade 8, and 3 new standalone items and one new item cluster in grade 11.

As the WCAS item bank grows, more material will be added to the Training Tests, with a goal of a "practice test" representative of the test length of the operational WCAS.

Miscellaneous

Question

Should students write out units fully or use abbreviations?

Answer

Students are only required to input text on two question types, short answer and table input. If the question asks the students for a response in which measurement units would be appropriate to include, we would be assessing the conceptual thinking presented by the information the students provides rather than the students use of abbreviations or appropriate spelling. Our advice is to hold students to your own standard with regards to abbreviating or not abbreviating units.

For additional questions, please email us at science@k12.wa.us