



State Summative Science Test Year 2

WERA Conference
December, 2019

Washington Comprehensive Assessment of Science (WCAS)

Office of Superintendent of Public Instruction
Chris Reykdal, State Superintendent

Welcome!

Who is with us today?



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Today's Topics

- Current State Tests
- WCAS Results
- WCAS Design and Features
- Assessment Resources
- Training Test and Item Specifications Activity
- WCAS Development



Current State Tests



Why do we have state tests?

- The No Child Left Behind Act (NCLB) and state law require that we give a state science test once each in elementary, middle, and high school for the purpose of school and district accountability.
- The Every Student Succeeds Act (ESSA) continues those same requirements.



Every Student Succeeds Act (ESSA)

<https://www.k12.wa.us/policy-funding/grants-grant-management/every-student-succeeds-act-essa-implementation>



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English Learner Data
Disaggregation Grant

Beginning Educator Support Team
Grants ▶

Charter School Program Grant

Closing Educational Achievement
Gaps (Title I, Part A) ▶

Consolidated Program Review ▶

Every Student Succeeds Act ▼

Elementary and Secondary
Education Act (ESEA) ▶

Washington School Improvement
Framework

Every Student Succeeds Act (ESSA) Implementation

The Every Student Succeeds Act (ESSA) replaced No Child Left Behind (NCLB) on December 10, 2015. It is the reauthorization of the Elementary and Secondary Education Act (ESEA). ESSA became fully operational in school year 2017-18. OSPI is in the process of implementing the law, beginning with the identification of schools for Comprehensive and Targeted supports in the Washington School Improvement Framework.

[2018 School District Accountability Appeal Form \(DOCX\)](#)

[The Every Student Succeeds Act full text \(PDF\)](#)

[Washington's ESSA Consolidated Plan \(PDF\)](#)

Contact Us

- [School Improvement](#)
- [Special Education](#)
- [Title I, Part A](#)
- [Title II](#)

The Washington School Improvement Framework (WSIF)

The WSIF is the framework for accountability in Washington state. Each school is measured on the Framework, and OSPI has identified schools for additional supports, called Comprehensive and Targeted supports.

- [Go to the Washington School Improvement Framework](#)
- [WSIF Snapshot At-a-Glance \(PDF\)](#) | [Spanish \(PDF\)](#)
- [WSIF Highlights Infographic \(PDF\)](#)
- [Frequently Asked Questions about the WSIF \(PDF\)](#) | [Khmer \(PDF\)](#) | [Korean \(PDF\)](#) | [Punjabi \(PDF\)](#) | [Russian \(PDF\)](#) | [Somali \(PDF\)](#) | [Spanish \(PDF\)](#) | [Tagalog \(PDF\)](#) | [Traditional Chinese \(PDF\)](#) | [Vietnamese \(PDF\)](#)

ESSA Implementation 101

An overview of OSPI's plan to implement ESSA and overviews the accountability system.

[View the Implementation Webinar \(YouTube\)](#) | [Download the PowerPoint \(PPTX\)](#)

View by section: [The Why \(YouTube\)](#) | [The What \(YouTube\)](#) | [The How \(YouTube\)](#) | [Next Steps and Timeline \(YouTube\)](#)

Translation Services

Please let us know if you need an interpreter at no cost to you. We can answer your questions in your language!

House Bill (HB) 1599

- The high school science assessment graduation requirement was removed.
- Students need to demonstrate their readiness for post-secondary career or college via one or more pathways. The pathways available to the Class of 2020 are:
 - Smarter Balanced or WA-AIM (ELA and math)
 - Dual credit courses in English language arts (ELA) and math
 - High school transition courses in ELA and math
 - C+ in AP, IB, or Cambridge class or achieving certain score on AP, IB, or Cambridge tests in ELA and math
 - ACT or SAT score
 - COE-Local, if completed during the 2018–19 school year
- Students must demonstrate skills via a pathway for ELA and math. The above options can be used interchangeably to meet both requirements. Alternatively, the following two pathways are considered to meet both ELA and math.
 - ASVAB
 - CTE Sequence, including completing a Core Plus branded program
- Some students with disabilities may demonstrate
 - CIA cut-score on Smarter Balanced ("L2 Basic")
 - Locally Developed Assessment (LDA)
 - Off-grade assessment

[OSPI-Graduation
Requirements HB
1599](#)



State Science Standards

- Washington State adopted the Next Generation Science Standards (NGSS) as science learning standards in October of 2013.
 - *2013 Washington State K-12 Science Learning Standards*
- WCAS first administered in Spring 2018
 - 5, 8, 11



NGSS Resources

- Next Generation Science Standards (NGSS)
- NGSS Appendices
- K–12 Framework for Science Education



Learning and Teaching Science

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2013 Washington State K-12 Science Learning Standards

<https://www.k12.wa.us/student-success/resources-subject-area/science/science-k%E2%80%9312-learning-standards>



Home » Student Success » Resources by Subject Area » Science » Science K-12 Learning Standards

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Mathematics ▶

Science ▾

Learning Standards ▾

Washington State Science and Learning Standards

Climate Science Learning

Educational Service District Regional Science Coordinators

Grants, Resources, and Supports

Science Assessment Professional Development Opportunities

Contacts at OSPI

Science K-12 Learning Standards

The Washington State 2013 K-12 Science Learning Standards (WSSLS) are the Next Generation Science Standards. These standards describe what students should know and be able to do at each grade level. New assessments are being developed based on these standards and will be administered in spring 2018.

View the WSSLS/NGSS Standards at [Washington State 2013 K-12 Science Learning Standards](#).

Supporting Resources

Free WSSLS Professional Learning for Administrators

This video-based professional learning from OSPI and AWSP supports elementary principals in developing an understanding of why elementary science is important and how to lead NGSS in their buildings. It makes the case for elementary science, leads principals and their leadership teams through a series of learning tools, allows for completion of a self-assessment to determine where the building is in regard to science instruction, and guides action planning. The video and all the associated resources can be found on the [AWSP website](#).

NRC Conceptual Framework for Science Education Standards

In July 2011, the National Research Council (NRC) published "[A Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas](#)." Scroll to the middle of the page to find a free PDF version.

Science Instructional Materials and Supporting Resources

OSPI Learning and Teaching Science no longer holds instructional materials showcases. The following resources can guide learning materials and resource reviews.

[NGSS PEEC - Alignment](#)

[NGSS EQuIP Rubric for Lessons & Units](#)

[Washington State LASER](#)

[Education Service District Science Coordinators](#)

The 2018-2019 ESD Science Coordinators provide science professional development.



Washington Comprehensive Assessment of Science (WCAS)

Washington State 2013 K-12 Science Learning Standards Next Generation Science Standards (NGSS)		
Grade 5	Grade 8	Grade 11
3-5 band	Middle School band	High School band

<http://www.k12.wa.us/Science/Standards.aspx>



2020 WCAS Test Windows

Grades	Requirement	Testing Window
5 & 8	Required for federal and state accountability	Online: April 13 – June 5 Accommodated Paper Form: April 13 – May 22
11	Required for federal and state accountability	Online: May 4 – June 5 Accommodated Paper Form: May 1 – May 22

Accommodated paper testing is available only to support large print, braille, and standard print (English and Spanish) forms for students whose IEP or 504 plan states paper.

The student to Test Administrator (TA) ratio should be no greater than 3 students to 1 TA when administering the WCAS accommodated paper form.

<http://www.k12.wa.us/assessment/StateTesting/timelines-calendars.aspx>



WCAS Accommodated Paper Testing

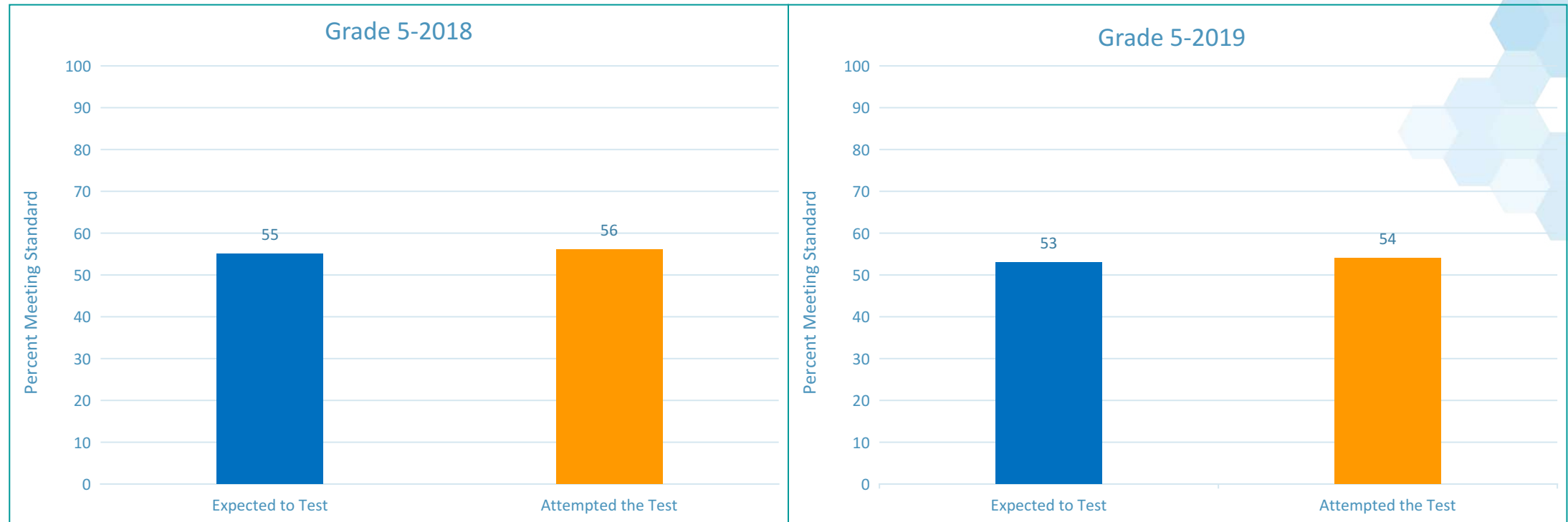
- Standard forms and Spanish forms are shipped back to the vendor for processing and scoring
- Large print and braille student responses are transcribed onto a standard print form before being shipped back to vendor for processing and scoring
- Resources
 - Paper Test Administration Manual (TAM): <https://wa.portal.cambiumast.com/resources/user-guides-and-manuals-testc/>
 - Training Module: <https://wa.portal.cambiumast.com/resources/modules-testc/>
 - Secure TA Script of Student Directions – shipped with test booklets



WCAS Results



Statewide WCAS Results-Grade 5

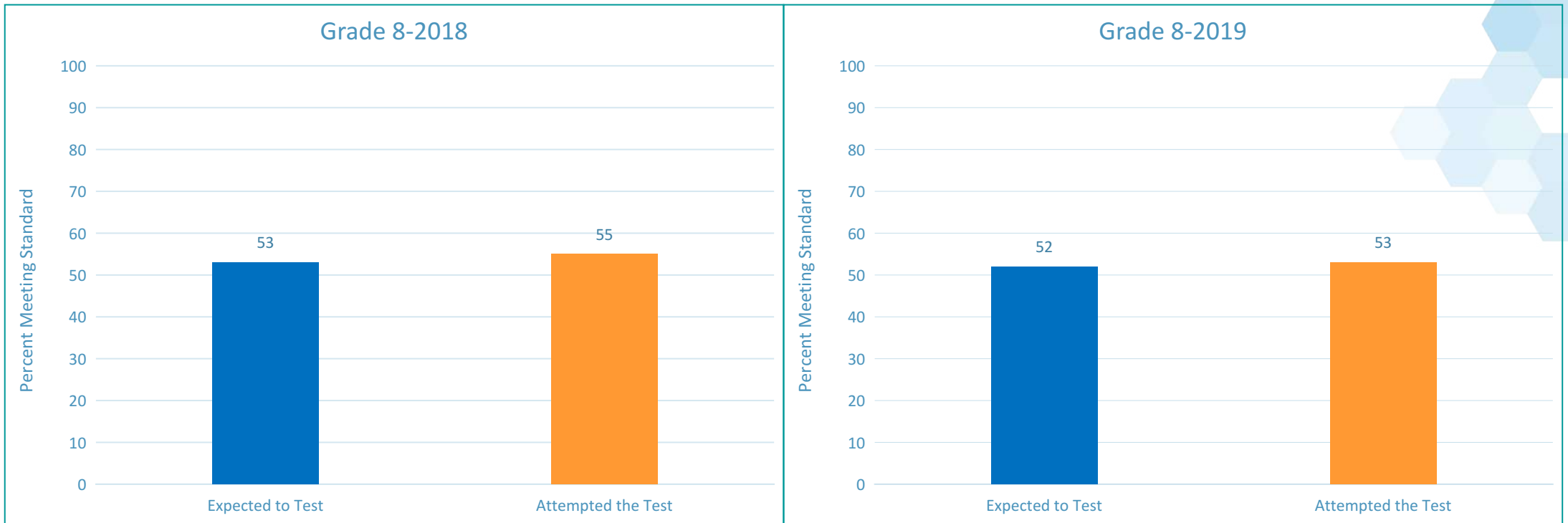


97% participation

93% participation



Statewide WCAS Results-Grade 8

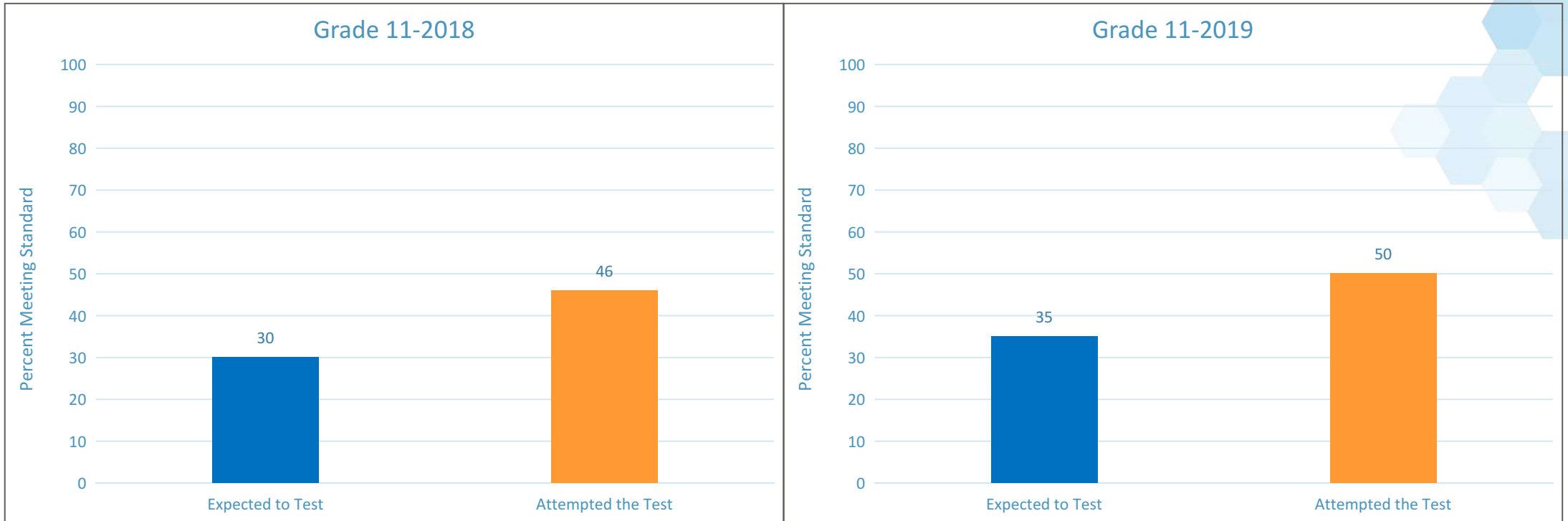


96% participation

92% participation



Statewide WCAS Results-Grade 11



66% participation

63% participation



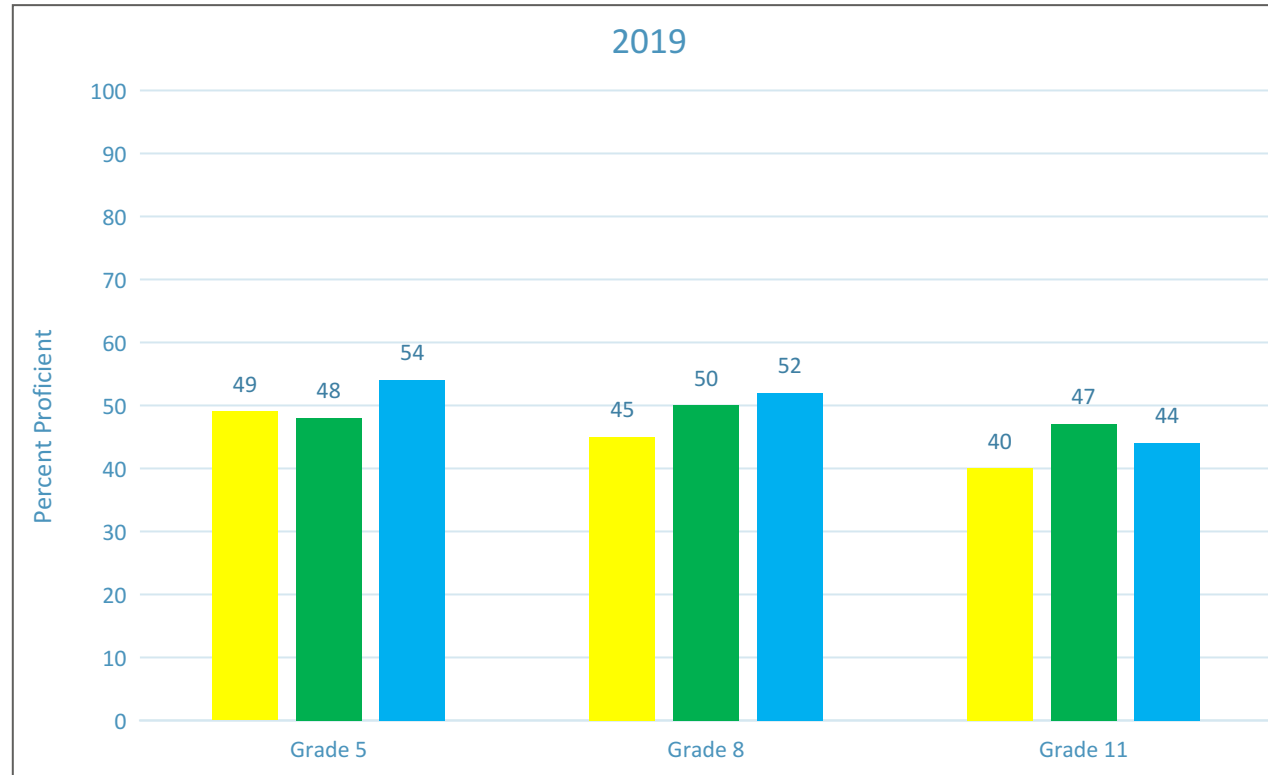
2018 Reporting Area Performance






- Practices and Crosscutting Concepts in Physical Sciences
- Practices and Crosscutting Concepts in Life Sciences
- Practices and Crosscutting Concepts in Earth and Space Sciences



2019 Reporting Area Performance



-  Practices and Crosscutting Concepts in Physical Sciences
-  Practices and Crosscutting Concepts in Life Sciences
-  Practices and Crosscutting Concepts in Earth and Space Sciences



Questions to explore...

- How much time do kids spend on science?
- Is your science curriculum aligned to the NGSS?
- When did NGSS implementation occur?
- How much training has staff received on the NGSS?
- Did students practice with WCAS training tests?
- How do your results compare to the state average? Similar districts/schools?
- How many students in your school/district participated in the WCAS ?
- Are your scores considerably different in one reporting area?



2019 Scale Score Ranges

Washington Comprehensive Assessment of Science

The cut (or threshold) scores for Levels 1, 2, 3, and 4 were developed by Washington educators. These cut scores were adopted by the State Board of Education in August 2018

Grades	Level 1	Level 2	Level 3	Level 4
5	375 – 649	650 – 699	700 – 784	785 – 1060
8	345 – 649	650 – 699	700 – 764	765 – 1060
11	390 – 649	650 – 699	700 – 790	791 – 1190

- <http://www.k12.wa.us/assessment/StateTesting/ScaleScores.aspx>



Scores—Communication Timeline

- Scores made available in the Online Reporting System (ORS) on the [WCAP Portal](#) in August
- Statewide test scores were publically released on [Report Card](#) in September
- Paper WCAS Individual Score Reports (ISRs) arrived in districts in October



WCAS Design and Features



NGSS Performance Expectations per Grade Band

Reporting Area	Number of Three-Dimensional Performance Expectations		
	3-5	Middle School	High School
Physical Science Domain	17	19	24
Life Science Domain	12	21	24
Earth and Space Science Domain	13	15	19
Engineering Domain	3	4	4
Total	45	59	71

Each Performance Expectation (PE) includes a Science and Engineering Practice, a Disciplinary Core Idea, and a Cross-cutting Concept



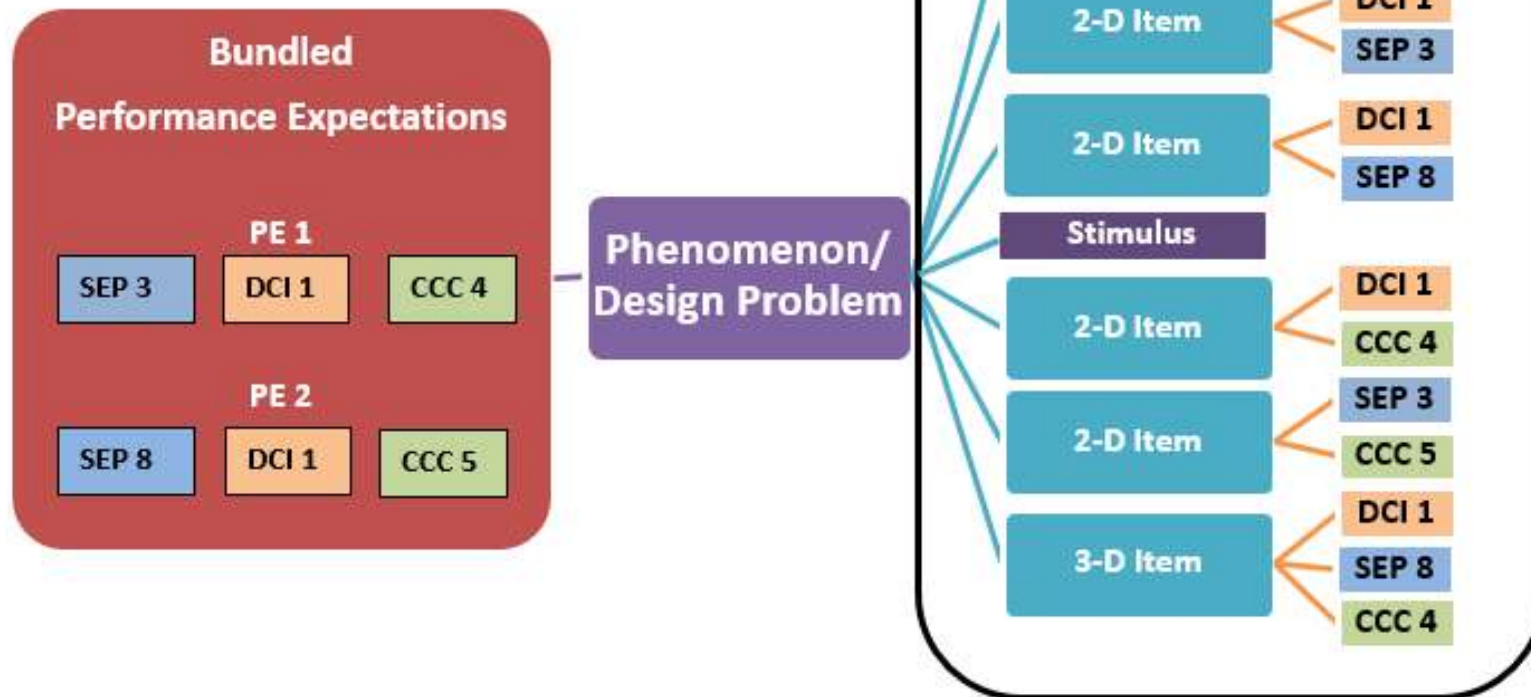
WCAS Reporting Areas

Reporting Area	Grade 5	Grade 8	Grade 11
Science and Engineering Practice and Cross-Cutting Concepts in Physical Sciences	17 Performance Expectations 40% ~14 pts	19 Performance Expectations 35% ~14 pts	24 Performance Expectations 36% ~16 pts
Science and Engineering Practice and Cross-Cutting Concepts in Life Sciences	12 Performance Expectations 29% ~10 pts	21 Performance Expectations 38% ~15 pts	24 Performance Expectations 36% ~16 pts
Science and Engineering Practice and Cross-Cutting Concepts in Earth and Space Sciences	13 Performance Expectations 31% ~11 pts	15 Performance Expectations 27% ~11 pts	19 Performance Expectations 28% ~13 pts
Total Points	35	40	45

ETS PEs assessed but not included here.



Item Cluster Map



Standalone Items

- Allow more PEs to be assessed on a test
- Are 2 or 3 dimensional
- Can have multiple parts
- Computer scored item types only



WCAS Features

- All online
- Item Clusters and Standalone Items
- Item Types:
 - Selected Response—multiple choice, multiple select
 - Constructed Response—short answer
 - Technology enhanced—ex: drag and drop, drop-down choices, simulations
- Multi-part items
 - Parts labeled with letters A, B, and C.
 - May have a mix of item types. Parts work together. May ask for evidence to support answer in previous part of the item.



Structure and Test Length

■ Structure

■ Operational

- Grades 5 and 8: 5 Clusters and 6-12 Standalone items
- High School: 6 Clusters and 6-12 Standalone items
- Counts toward a student's score

■ Field test items

- Embedded in the online administration
- One cluster and/or standalone items
- Does not count toward a student score

- All items are aligned to 2 or 3 dimensions of a PE

■ Test Length

- Grade 5: 90 minutes
- Grade 8: 110 minutes
- Grade 11: 120 minutes

■ Administration

- Can be administered in multiple sessions like the Smarter Balanced ELA and Math assessments
- 1 to 3 sessions recommended



Special WCAS Features

- Collapsing stimuli
 - First stimulus is hidden when second stimulus is provided.
 - Both stimuli are available to the student.
- Locking Items
 - Student can answer the question only once.
 - Allows subsequent questions to update with correct information.
 - An “attention” box warns student that they won’t be able to change their answer.



WCAS Training Tests

- Help students become familiar with the features and tools of online tests.
- Available on the [WCAP portal](#).
- Will be updated in late December 2019



Assessment Resources



Science Assessment Webpage



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Washington Comprehensive Assessment of Science

The Washington Comprehensive Assessment of Science (WCAS) measures the level of proficiency that Washington students have achieved based on the [Washington State 2013 K-12 Science Learning Standards](#), which are the *Next Generation Science Standards (NGSS)*. All students are assessed on their knowledge of the standards through the WCAS in grades 5, 8, and 11. The tests fulfill the federal [Every Student Succeeds Act \(ESSA\)](#) requirement that students be tested in science once at each level: elementary, middle, and high school.

[House Bill 1599 \(2019\)](#) removed the high school science assessment graduation requirement. [Please visit the Graduation Requirements webpage](#) for more information.

WCAS Resources

This page provides information and access for the training tests, test design and item specifications, test scores, lessons learned from scoring student work, achievement level descriptors, and various science assessment presentations.

Professional Development Opportunities

This page includes a schedule of upcoming science assessment development work groups and information on how to apply.

WCAS Frequently Asked Questions (PDF)

This document provides answers to a list of frequently asked questions about the current and future state science assessments.



[Subscribe to Science Assessment updates](#)

Contact Information

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<https://www.k12.wa.us/student-success/testing/state-testing-overview/washington-comprehensive-assessment-science>



WCAS Educator Resources Webpage

<https://www.k12.wa.us/student-success/testing/state-testing-overview/washington-comprehensive-assessment-science>



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WCAS Educator Resources

Training Tests

Students who take online assessments need opportunities to explore the features of the online assessment and to practice using the tools available to them on those assessments. Students, families, and teachers can access Training Tests for the Washington Comprehensive Assessment of Science (WCAS) on the [Washington Comprehensive Assessment Program \(WCAP\) Portal](#). To experience the greatest variety of question types and test functionalities, students should interact with the 5th, 8th, and 11th grade training tests.

This [Online Training Test Support \(PDF\)](#) document (updated January 2019) includes information about accessing the training tests, descriptions of ways to practice using the tools for each item type, an answer key, and other information for each question.

How to Work with the WCAS Training Tests Webinar

- [WCAS Training Tests presentation slides \(final draft\)](#)
- [WCAS Training Tests Q&A \(PDF\)](#)
- [WCAS Training Tests webinar recording \(YouTube\)](#)

Test Design and Item Specifications

The Test Design and Item Specifications documents describe how the clusters (stimulus and item sets) and standalone items for the WCAS are developed. They include a technical description of the assessment that ensures the assessment will measure the science standards in a reliable manner every year.

- [Grade 5 Test Design and Item Specifications \(PDF\) \(August 2019 - Updated\)](#)
- [Grade 8 Test Design and Item Specifications \(PDF\) \(August 2019 - Updated\)](#)
- [High School Test Design and Item Specifications \(PDF\) \(August 2019 - Updated\)](#)
- [Modifications Log \(PDF\) \(August 2019 - Updated\)](#)

Science Test Design & Item Specifications Release Webinar

- [Test Design & Item Specification presentation slides \(final draft\)](#)
- [Science Test & Item Q&A \(PDF\)](#)
- [Science Test & Item webinar recording \(YouTube\)](#)

Test Scores

The scores from the spring 2019 WCAS are available:

- Statewide test scores publically released on [Report Card](#).
- For educators: Scores available in the Online Reporting System (ORS) on the [WCAP Portal](#).
- For families: Paper WCAS Individual Score Reports (ISRs) arrived in districts in early October.

Sample Score Reports

Scale Score Ranges

Understanding WCAS Score Reports Webinar

- [WCAS Score Reports presentation slides \(PPTX\) \(final draft\)](#)
- [WCAS Score Reports Q&A \(PDF\)](#)
- [WCAS Score Reports webinar recording \(YouTube\)](#)

Lessons Learned from Scoring Student Work

The Science Assessment Team shares observations about student responses for the Washington Comprehensive Assessment of Science (WCAS) field test items.

- [2017-2018 \(PDF\)](#)

Achievement Level Descriptors (ALDs)

The ALDs describe the knowledge, skills, and processes that students demonstrate on state tests at pre-determined levels of achievement for each tested grade level.

2018 WERA Conference (PPTX)

Students in grades 5, 8, and high school took the operational Washington Comprehensive Assessment of Science (WCAS) for the first time in spring 2018. At this session, OSPI staff shared information and gathered session attendee questions and feedback on anything related to the WCAS and its first administration to continue support for educators.

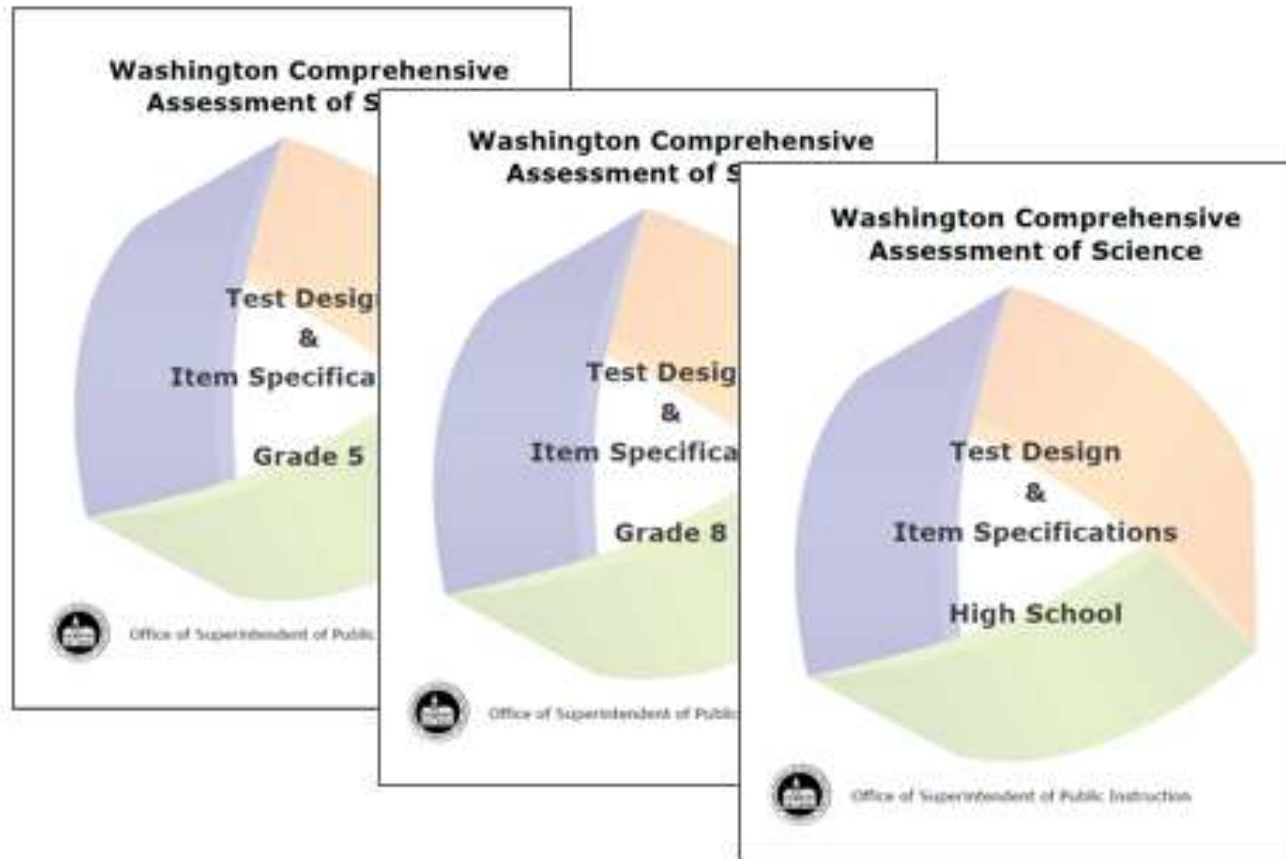
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WCAS Test Design and Item Specifications



WCAS Test Design and Item Specifications

- Describe how item clusters (stimuli and items) and standalone items for the WCAS are developed to assess the NGSS
- Contents
 - Structure of the test
 - Item Types
 - Test organization
 - Overview of NGSS
 - Item specifications that describe how students can demonstrate understanding of the PEs on the state test.
 - Vocabulary word list
- The documents will be updated annually based on WA educator feedback.
- A modification log will be posted at each subsequent publication.



WCAS Development

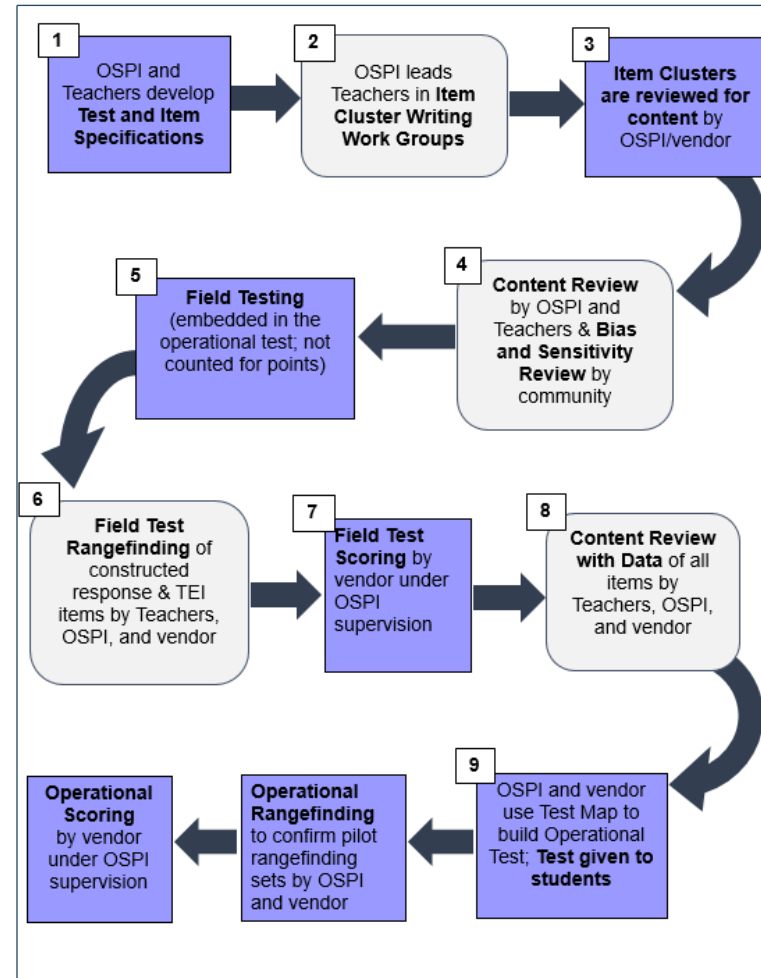


Goals for WCAS

- Design an assessment that reflects how science content is taught and tested in the classroom.
- Use WA educators in assessment development.
- Develop high quality item clusters and standalone items that achieve alignment to the SEPs, DCIs, CCCs represented in a PE or PE bundle.
- Design an assessment that allows for valid and reliable inferences to be drawn from the results.
- Design an assessment that ensures the fair and accurate assessment of students in special populations.



Science Assessment Development Cycle



Educator Work Group Descriptions

- **(2) Item Cluster Writing Workgroup:** Teams of 2-3 educators write stimuli, items, and rubrics designed to validly measure student understanding of the NGSS.
- **(4) Content Review Workgroup:** Educators review the products of the Item Cluster Writing Workgroup to ensure that every stimulus, item, and rubric is scientifically accurate and gathers appropriate evidence about student skill with the NGSS. At the same time, a separate committee of community members reviews the items and stimuli for any bias and sensitivity issues. Recommendations from the Bias/Sensitivity Review Workgroup are considered by the Content Review Workgroup.
- **(6) Field Test Ranging :** Educators look at a range of student responses to each short answer item and decide how to score each response. This educator workgroup refines scoring rubrics and produces the materials that will be used to score the field test items.
- **(8) Content Review with Data Workgroup:** Educators use item performance data, as well as members' science content knowledge, to decide whether each item should advance into the item bank.



Upcoming Professional Development Opportunities

Event	Timing
Item Cluster Writing	March 2020
Field Test Range Finding	July 2020
Content Review	August 2020
Content Review with Data	September 2020



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