

The science of improving WASL scores

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Last week, Kolton Mason, 13, squished a baggie with calcium chloride, baking soda and red phenol in it, causing the chemicals to mix and turn a bright yellow. Suddenly the bag was hot to the touch.

"This is awesome. Chemicals are cool!" exclaimed Mason, an eighth-grader at Rose Hill Junior High School. "I like learning how things work."



ERIKA SCHULTZ / THE SEATTLE TIMES

Michael Hurst, left, and Kolton Mason mix several chemicals together during a lab experiment in Vicki McCarter's integrated-science class at Rose Hill Junior High.

That's good news for teacher Vicki McCarter, who said new curriculum at the Redmond school is designed to teach Mason and his classmates how to understand science.

And if trends from last year continue, the curriculum could help more students pass the science section of the WASL next spring.

When the state released WASL scores recently, every school district on the Eastside saw more eighth-graders passing the science section than the previous test year, along with many other districts across King and Snohomish counties.

But the Eastside's Lake Washington and Issaquah school districts saw the biggest increases, with 13 percent more passing scores and 14.7 percent, respectively.

Some schools, such as Lake Washington's Rose Hill and Kamiakin junior highs, saw the eighth-grade passing rate in science jump 22 points. Issaquah's Maywood Middle School jumped 16 points, and Pine Lake Middle School increased 20 points.

Sample science questions

Here are a few examples of questions eighth-graders are asked on the science portion of the WASL:

Short answer question: Scientists have many challenges related to collecting data and performing investigations on volcanoes. They now use technology to overcome these challenges.

- Describe two challenges scientists might face when investigating volcanoes.
- Explain how technology can help to overcome each of the two challenges described.

Multiple choice question: Which one of the following rock types formed directly from the magma that erupted from Mt. St. Helens?

- A. Plutonic rock.
- B. Igneous rock.
- C. Metamorphic rock.
- D. Sedimentary rock.

Answer: B

Source: Office of Superintendent of Public Instruction

Both Issaquah and Lake Washington credit the jump to new curriculum and new teaching materials that the districts implemented in the last several years, along with more professional development for science teachers and giving those teachers a chance to more frequently exchange information with each other.

The increase in scores is a bright trend in an overall troublesome subject area, as WASL science scores are still among the lowest for many districts statewide.

This year's scores showed the number of students passing science in Issaquah School District increased from 58.4 percent last year to 73.1 percent this year, and in Lake Washington from 54.4 percent to 67.4 percent. Seattle's eighth-grade science scores went from 31.7 percent of students passing to 37 percent passing. Shoreline increased from 49.3 percent to 57.7 percent, and Everett from 42.4 percent to 52 percent.

Those scores need to continue increasing because starting in 2010, students must pass the 10th-grade WASL science test, along with the reading, writing and math sections of the test, as part of their requirements to graduate. This year's ninth-graders are the first class that will face that requirement.

Both Issaquah's and Lake Washington's new curriculum was developed by the National Science Resources Center, The National Academies and the Smithsonian Institution.

This type of curriculum is more in keeping with state standards for science, and more aligned with what the WASL tests, said Mary McClellan, Issaquah School District's science curriculum specialist.

The curriculum is inquiry-based, which means students are asked to walk through experiments and activities themselves, allowing them to gain an understanding of how things work by observing it firsthand.

The curriculum uses integrated science, so students are learning about earth, space, biology and physical sciences all in the same school year. Traditionally, students would focus on one type of science per year.

"We don't just want to prepare our students to take the WASL," said Debbie Ney, science teacher at Maywood. "We want to prepare them to be scientists. We want them to be engaged with science so they want to go on."

When the state Office of Superintendent of Public Instruction sees a jump in a district's science scores, it's often because the district is focusing on inquiry-based instruction, said Roy Beven, science assessment manager for OSPI.

"It's exciting to see middle schools come up like that," Beven said. "Now we need to see middle-school success translate into high school."

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