OREGON DEPARTMENT OF EDUCATION

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RESEARCH BRIEF

Office of Research, Assessment, Data, Accountability, and Reporting

FAST FACTS: Self-Efficacy – Mathematics by Grade and Student Group

Definition: Students' confidence in their Mathematics skills.

ODE calculates a **Self-Efficacy – Mathematics** domain score among 4th, 7th, and 10th graders that has a possible range of 0 to 100. This score is based off students' responses to 9 to 12 items on the SEED Survey (on a 5-point scale with response options being: Not confident; A little confident; Somewhat confident; Mostly confident; Very confident). Example items[1] are:

4th Grade Example Items	7th Grade Example Items	10th Grade Example Items
Think about what you learned in your math class this year. How sure are you about doing each of the following? • I can estimate the weight of 5 apples using pounds (lb). • I can round $43.19 to the nearest dollar. • I can write a decimal that is equal to 7/10.	Think about what you learned in your math class this year. How confident are you about doing each of the following? • I can list all the different possible outcomes when a coin is flipped three times. • I can find the price of a $12 item that is discounted by 25%. • I can find the amount of carpet needed to cover a rectangular floor if I know its length and width.	Think about what you learned in your high school math classes. How confident are you about doing each of the following? • I can describe the properties shared by every isosceles triangle. • I can determine the better deal between a 10-ounce drink for $1.99 and a 12 ounce drink for $2.29. • I can solve the equation 5x2-3=17 for x.

7% of students had a score of 100, meaning that they were very confident in all the Mathematics skills

2% of students had a score of 0, meaning that they were not confident in any of these Mathematics skills

[1] The full list of items can be found in Understanding SEED Domain Scores.

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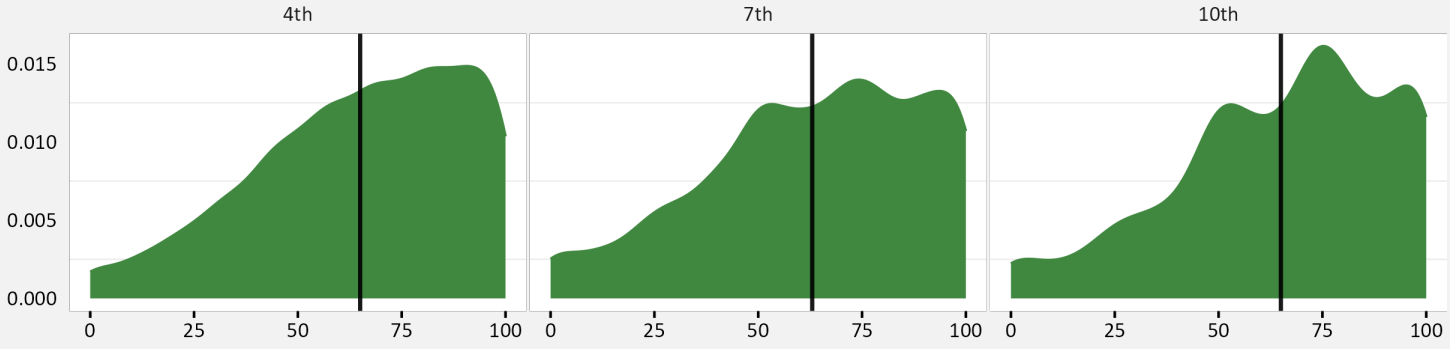
Self-Efficacy – Mathematics decreased from 4th to 7th grade, and increased from 7th to 10th grade.

Figure 1: Distribution of Student Domain Scores



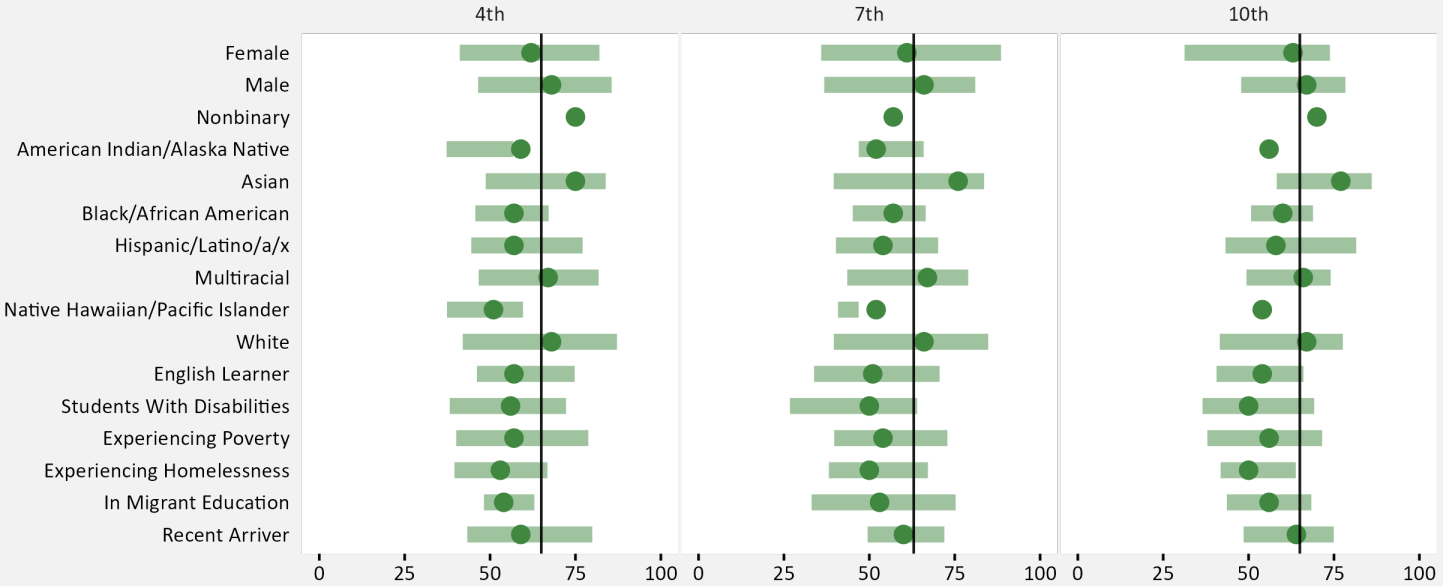
Note.The vertical black line indicates the state-level score for all students combined

Grade	State Domain Score	Equivalency
4th	65	Roughly equivalent to responding 'Mostly confident' to 6 items, 'Somewhat confident' to 2 items, and 'A little confident' to 1 item
7th	63	Roughly equivalent to responding 'Mostly confident' to 7 items, 'Somewhat confident' to 1 item, and 'A little confident' to 2 items
10th	65	Roughly equivalent to responding 'Mostly confident' to 9 items, 'Somewhat confident' to 2 items, and 'A little confident' to 1 item

Some students had lower domain scores across all three grades:

- Female students
- American Indian/Alaska Native students
- Black/African American students
- Hispanic/Latino/a/x students
- Native Hawaiian/Pacific Islander students
- Students who are English learners
- Students with disabilities
- Students experiencing poverty
- Students experiencing homelessness
- Students in migrant education
- Students who are recent arrivers

Figure 2: Domain Score by Student Group



Note. The dark green circle indicates the state-level score for each group, and the light green box indicates the score range across districts in Oregon with at least 10 responses. The vertical black line indicates the state-level score for all students combined.

Resources

SEED Survey

- SEED Survey
- Understanding SEED Domain Scores
- 2024-2025 State Level SEED Survey Domain Score Data
- 2024-2025 District Level SEED Survey Domain Score Data
- Formative Instructional Practices, Self-Efficacy, and Math Achievement in 4th Grade

Additional Resources

- Student Success Plans
- Math Educator Resources
- Tribal History/Shared History: Math Resources
- STEAM Toolkit
- Math Educator Update
- Oregon Math Project
- Cultivating Identity and Belonging in STEAM
- Oregon Council of Teachers of Mathematics