



Family Guide to Student Reports Spring 2022 Alaska Science Assessment

The Purpose of Alaska Science Assessment

The Alaska Science Assessment is administered annually statewide to students in grades 5, 8, and 10. It provides students the opportunity to show their understanding of the skills and concepts outlined in the *K–12 Science Standards for Alaska*, which were adopted in 2019. The assessment provides information to parents, educators, policymakers, communities, and businesses about how Alaska’s schools and districts are performing. The Alaska Science Assessment also provides information to help schools improve and to meet Alaska’s educational mission, “An excellent education for every student every day.”

What’s Next?

Grade 5

Students who took the grade 5 Alaska Science Assessment should expect to continue developing knowledge related to Life Science, Physical Science, and Earth and Space Science and applying skills related to Science and Engineering Practices as they advance in their study of science. As a family member, connect with your student’s teacher to identify and discuss specific areas of strength or areas of need. You may also want to visit the DEED website for science resources such as the Online Tools Training (OTT) and the *K–12 Science Standards for Alaska* – these standards provide information on what your student should know and be able to do.

Grade 8


Students who took the grade 8 Alaska Science Assessment should expect to continue developing knowledge related to Life Science, Physical Science, and Earth and Space Science and applying skills related to Science and Engineering Practices as they advance in their study of science. As a family member, connect with your student’s teacher to identify and discuss specific areas of strength or areas of need. You may also want to visit the DEED website for science resources such as the Online Tools Training (OTT) and the *K–12 Science Standards for Alaska* – these standards provide information on what your student should know and be able to do.

Grade 10

Students who took the grade 10 Alaska Science Assessment should expect to continue developing knowledge related to Life Science, Physical Science, and Earth and Space Science and applying skills related to Science and Engineering Practices as they advance in their study of science. As a family member, connect with your student’s teacher to identify and discuss specific areas of strength or areas of need. You may also want to visit the DEED website for science resources such as the Online Tools Training (OTT) and the *K–12 Science Standards for Alaska* – these standards provide information on what your student should know and be able to do.

Sample Reports

Alaska Science Assessment Student Report



Science Assessment
Alaska Department of Education
& Early Development

Student Report

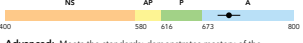
Student: James R. Robinson
Grade: 5

AKSID: 123456
Test Date: Spring 2022

District Name: Sample District
School Name: Sample School

About the Alaska Science Assessment
This report provides a record of test results on the Alaska Science Assessment. The student's scale score is represented by the ●. The chart displays where the proficient cut score lies within the possible scale score range (400-800). If the student were to test again, the student's score would likely fall within the lines on either side of the circle.

Science | Scale Score 710



Advanced: Meets the standards; demonstrates mastery of the knowledge and skills on a range of complex grade-level content.

Comparison to State, District, and School Performance

Subject	# Tested	Non-Proficient		Proficient	
		NS	AP	P	A
James R. Robinson					710
School (median)	7				740
District (median)	31				721
State (median)	6,122				729

■ NS - Needs Support
 ■ AP - Approaching Proficient
 ■ P - Proficient
 ■ A - Advanced

ach achievement level. A student the previous achievement levels.

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Performance by Reporting Category

Science Reporting Category	Performance
Life Science	★★★
Physical Science	★★★★
Earth and Space Science	★★★


Performance Results Key

- ★★★★ did better than students who scored just barely proficient
- ★★★ did about as well as students who scored just barely proficient
- ★★ did not do as well as students who scored just barely proficient
- ★ did not attempt any items in this category

Achievement Level Descriptors


Needs Support	Approaching Proficient	Proficient	Advanced
400-579 Student may partially meet the standards but needs support to master the knowledge and skills of current grade-level content.	580-615 Student partially meets the standards and may have gaps in knowledge and skills but is approaching mastery of some grade-level content.	616-672 Student meets the standards and demonstrates mastery of the knowledge and skills of most grade-level content.	673-800 Student meets the standards and demonstrates mastery of the knowledge and skills on a range of complex grade-level content.

For more information on the Alaska Science Assessment, visit education.alaska.gov/assessments/science



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For more information on the Alaska Science Assessment, visit education.alaska.gov/assessments/science



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Science Student Report

Science Summary Achievement Level Descriptors (ALDs)

Alaska Science Assessment Student Report – Page 1



Science Assessment

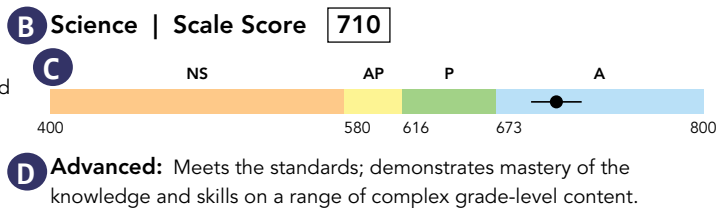
Alaska Department of Education
& Early Development

Student Report

Student: James R. Robinson **A** **AKSID:** 123456 **District Name:** Sample District
Grade: 5 **Test Date:** Spring 2022 **School Name:** Sample School

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E Comparison to State, District, and School Performance

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F Performance by Reporting Category

Science Reporting Category	Performance
Life Science	★★★
Physical Science	★★★★
Earth and Space Science	★★★

G Performance Results Key

- ★★★★ *did better than* students who scored just barely proficient
- ★★★ *did about as well as* students who scored just barely proficient
- ★★ *did not do as well as* students who scored just barely proficient
- ★ *did not attempt* any items in this category

H Achievement Level Descriptors

Needs Support 400-579	Approaching Proficient 580-615	Proficient 616-672	Advanced 673-800
Student may partially meet the standards but needs support to master the knowledge and skills of current grade-level content.	Student partially meets the standards and may have gaps in knowledge and skills but is approaching mastery of some grade-level content.	Student meets the standards and demonstrates mastery of the knowledge and skills of most grade-level content.	Student meets the standards and demonstrates mastery of the knowledge and skills on a range of complex grade-level content.

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Summary Achievement Level Descriptors (ALDs)

These are example descriptions of what a student at the end of this grade-level knows and can do at each achievement level. A student who scores at an achievement level would also be expected to demonstrate the knowledge and skills at the previous achievement levels.

Achievement Levels	I Science
<p style="text-align: center;">Advanced 673-800</p>	<p>The student displays a highly developed conceptual understanding by using science and engineering practices, crosscutting concepts, and an understanding of life science, physical science, and earth and space science disciplinary core ideas to make sense of phenomena and solve problems. For example, students can construct an argument that includes the interdependence of organisms in a changing environment; obtain and evaluate evidence from multiple sources to design a solution to a problem involving the transfer of energy; and use evidence to generate and evaluate multiple solutions that reduce the impacts of natural Earth processes on humans based on criteria and constraints.</p>
<p style="text-align: center;">Proficient 616-672</p>	<p>The student demonstrates a sufficient conceptual understanding by using science and engineering practices, crosscutting concepts, and an understanding of life science, physical science, and earth and space science disciplinary core ideas to make sense of phenomena and solve problems. For example, students can make a claim about the merit of a solution to a problem caused when an environment changes and affects the types of plants and animals that live there; plan and conduct an investigation that fairly tests a phenomenon involving the transfer of energy (e.g., moving objects, sound, light, heat, electric currents); and use evidence to design a possible solution to reduce the impacts of natural Earth processes on humans.</p>
<p style="text-align: center;">Approaching Proficient 580-615</p>	<p>The student shows a foundational understanding by using some science and engineering practices, crosscutting concepts, and a partial understanding of life science, physical science, and earth and space science disciplinary core ideas to make sense of phenomena and solve problems. For example, students can explain a cause-and-effect relationship between an environmental change and an organism responding to stimuli; describe the purpose of an investigation related to energy transfer (e.g., moving objects, sound, light, heat, electric currents); and use evidence to describe how natural Earth processes negatively impact humans.</p>
<p style="text-align: center;">Needs Support 400-579</p>	<p>The student shows a basic understanding by using science and engineering practices, crosscutting concepts, and/or a basic understanding of life science, physical science, and earth and space science disciplinary core ideas to make sense of phenomena and solve problems. For example, students can identify an environmental change that could impact a plant or an animal; identify examples showing a transfer of energy; and identify possible negative impacts to humans from a natural Earth process (e.g., earthquake, volcano, flood, landslide).</p>

SAMPLE REPORT

For more information on the Alaska Science Assessment, visit education.alaska.gov/assessments/science



Reading the Alaska Science Assessment Student Report

- A** This section presents student, school, and district information.
- B** The number in the box indicates the student's scale score. *Please note:* If the student did not attempt the test or if the student did not receive a valid score, a Student Report will not be generated. Contact your school for more information about the specific circumstances.
- C** The horizontal bar graphically illustrates the student's scale score and the location of that score in the achievement level attained by the student. The dark circle in the symbol (—●—) represents the student's actual scale score. The bars on the side of the circle represent the range of where the student's score would likely fall if the student were to test again. This represents the standard error of measurement (SEM).

Scale Score: A number that provides a common metric for expressing student performance. The student's overall performance on the Alaska Science Assessment is reported as a scale score. Points earned by answering an item correctly are converted into a scale score that takes into consideration the difficulty of the item.

Standard Error of Measurement (SEM): The SEM provides information about the level of confidence that a student would achieve the same score if that student tested again on an equivalent form of the test without changing knowledge or skills. The SEM is specific for the particular grade and content area.

- D** This section describes the student's achievement level as determined by the scale scores reported in **B**. Student performance on the Alaska Science Assessment is reported in one of four achievement levels. These levels describe the performance of the student on the standards tested at the grade level. The four achievement levels are:

Advanced (A)—Student meets the standards and demonstrates mastery of the knowledge and skills on a range of complex grade-level content.

Proficient (P)—Student meets the standards and demonstrates mastery of the knowledge and skills of most grade-level content.

Approaching Proficient (AP)—Student partially meets the standards and may have gaps in knowledge and skills but is approaching mastery of some grade-level content.

Needs Support (NS)—Student may partially meet the standards but needs support to master the knowledge and skills of current grade-level content.

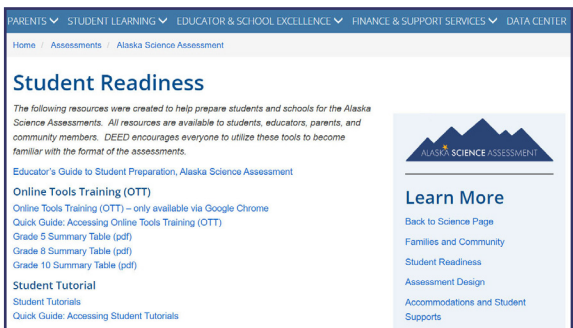
- E** This section shows the student's scale score and how it compares to median scores at the school, district, and state levels. The median represents the middle score in an ordered list of scores. Half the scores are above the median and half are below. The median is used instead of the mean (or average) because it is more stable if there are some extremely high or low scores in a group.
- F** This section shows a comparison of how the student performed in the reporting categories. The symbols indicate how the student performed compared to students who score just barely at the proficient level.
- G** This section shows the Performance Results Key, which provides the meaning of the number of stars that appear in the Reporting Category section. The *K–12 Science Standards for Alaska* are expressed as Performance Expectations that define what students should know and be able to do at the end of instruction. The Alaska science standards emphasize three distinct dimensions that help students learn science: the fundamental scientific knowledge, the practices scientists and engineers use to explain the world or solve problems, and scientific thinking across disciplines. Reporting categories are a subsets of content knowledge and skills within a subject area. The reporting categories for grades 5 and 8 are Physical Science, Life Science, and Earth and Space Science. Grade 10 reporting categories are Physical Science and Life Science. You can use these reporting categories to start a conversation with your child's teacher about their progress in science.

- H** This section provides general descriptions of what a student in this grade level can do at each achievement level. Find the student's achievement level at the top of the report and read the description to learn more about the content and skills that the student demonstrated and see what content and skills would be demonstrated by students reaching a higher achievement level on the Alaska Science Assessment.
- I** This section provides summary descriptions of what a student in this grade level can do at each achievement level. A student who scores at an achievement level would also be expected to demonstrate the skills at the previous achievement levels.

DEED encourages you to visit the [Alaska Science Assessment Results webpage](#) for further guidance on how the data and reports can be interpreted and understood.

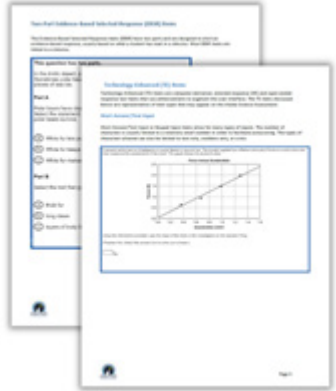
Resources

Science Student Readiness resources



The Alaska Science Assessment Student Readiness resources include the Educator Guide to Student Preparation, Student Tutorials, and the Online Tools Training (OTT).

Item Types



Specific item types students may see are outlined in the document linked above and are taken from the Science Online Tools Training.

*** Please click the title in [blue](#) to be directed to a link for each resource**