



# **Educator Guide to Assessment Reports**

## **Alaska Science Assessment**



---

**2023**



THE STATE  
of **ALASKA**  
GOVERNOR MIKE DUNLEAVY

## Department of Education & Early Development

COMMISSIONER'S OFFICE

333 Willoughby Ave., 9th Floor, SOB  
P.O. Box 110500  
Juneau, Alaska 99811-0500  
Main: 907.465.2800  
Fax: 907.465.2806

August 23, 2023

Dear Educator,

Thank you for your dedication and quality work to improve student learning. Your engagement with students as well as your instructional decisions as professionals matter to the young people of Alaska. As you know, learning assessment happens every day in classrooms across our state. You administer many different assessments to evaluate whether students know and can demonstrate the knowledge and skills being taught. From assessment, educators may understand and identify resources for teaching and learning. Student learning measurement is a key part of high-quality teaching and learning. Thank you for your continued expertise in this educational construct.

The Alaska System of Academic Readiness ([AK STAR](#)<sup>1</sup>), which is our state summative assessment of the English Language Arts (ELA) and mathematics standards, plays a part in our overall understanding of student learning. Students in grades 3-9 take the AK STAR assessment, which is an innovative, balanced assessment system designed to recognize and celebrate students' strengths and identify areas where a student needs support by connecting to the widely used MAP Growth interim assessment. AK STAR has also eliminated an additional testing window, giving time back to our classrooms for teaching!

Also, a part of the summative assessment program is the [Alaska Science Assessment](#)<sup>2</sup>. This is administered to students in grades 5, 8, and 10. It is designed to measure student learning in relation to the three-dimensional expectations of science and engineering practices, disciplinary core ideas, and cross-cutting concepts.

The Department of Education and Early Development ([DEED](#)<sup>3</sup>) is dedicated to providing effective, accessible, and equitable assessments to best serve the needs of Alaska's students. Although we experienced a delay and required more time to analyze the results of last year's assessments, we look forward to establishing useful, as well as meaningful, benchmarks for which to set learning goals. As we continue to develop and implement a purposeful statewide assessment system, input from Alaska families and educators will continue to inform our efforts.

Alaska is fortunate to have great schools and passionate educators. Thank you for your hard work to provide an excellent education for every student every day. Have a terrific school year.

Sincerely,

A handwritten signature in black ink, appearing to read "Deena Bishop".

Deena Bishop, Ed.D.  
Commissioner

<sup>1</sup> Alaska System of Academic Readiness (AK STAR) <https://education.alaska.gov/assessments/akstar>

<sup>2</sup> Alaska Science Assessment. <https://education.alaska.gov/assessments/science>

<sup>3</sup> State of Alaska. Department of Education and Early Development. <https://education.alaska.gov/>

# Table of Contents

<b>About the Alaska Science Assessment</b> .....	<b>1</b>
Overview.....	1
Educator Use of Information.....	2
Dates of Testing & Reporting.....	3
<b>Test Design</b> .....	<b>5</b>
Types of Items.....	5
Blueprints.....	5
Reporting Categories .....	5
<b>Score Interpretation</b> .....	<b>6</b>
Achievement Levels .....	6
Achievement Level Descriptors (ALDs).....	6
Scores & Score Ranges .....	7
Scale Scores and Raw Scores.....	7
Standard Error of Measurement.....	7
Score Ranges for Achievement Levels .....	7
Reporting Categories .....	8
Grade 5.....	8
Grade 8.....	12
High School .....	15
Reporting Scores for Groups of Students .....	18
Use of Median.....	18
Use of Mean .....	18
Standard Error of Estimate (SEE).....	18
Reporting Categories for Groups of Students.....	19
Special Circumstances .....	19
Individual Student Reports with Special Circumstances .....	20
Student Roster Reports with Special Circumstances .....	20
School or District Summary Reports with Special Circumstances.....	21
Data Privacy .....	21
Primary Suppression Rules .....	21
Secondary Data Suppression Guidelines.....	22
Downloading Reports .....	23

<b>Appendices .....</b>	<b>24</b>
Appendix A: Alaska Science Assessment Sample Reports.....	25
Sample Reports .....	26

# About the Alaska Science Assessment

## Overview

The Alaska Science Assessment is administered annually statewide to students in grades 5, 8 and 10 and is a summative assessment designed to measure a student’s knowledge of the *K–12 Science Standards for Alaska*, which were adopted in June 2019. The *K–12 Science Standards for Alaska* provide a foundation for defining what students should know and be able to do in terms of scientific knowledge and skills.

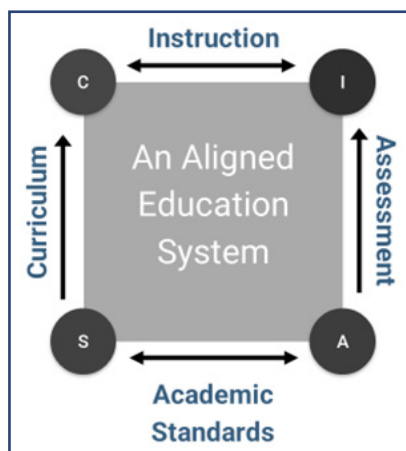
---

**State Board of Education’s Mission  
for Public Education in Alaska:**  
An excellent education for every  
student every day.

---

The Alaska Academic Standards in English language arts (ELA), mathematics, and science are used to drive curriculum, instruction, and assessment goals and actions. As illustrated in [Figure 1](#), the academic standards provide the foundation for the curriculum, instruction, and assessment activities in schools and classrooms throughout Alaska. For any assessment to reliably and validly measure student performance on the academic content and skills outlined in the academic standards, both curriculum and instruction must also be aligned to those common expectations. Further, classroom instruction must be responsive to the assessment data, with regular opportunities for adjustment to resources and strategies to address the academic standards.

**Figure 1: Aligned Education System**



The *K–12 Science Standards for Alaska* support learning and understanding through sense making and investigations associated with scientific phenomena in physical science, life science, earth and space science, and engineering and technology. The standards are presented as Performance Expectations and they combine the science and engineering practices, disciplinary core ideas, and cross-cutting concepts into a single statement of what is to be assessed. The Alaska Science Assessment also provides information to help schools improve and to meet the State Board of Education’s Mission, “An excellent education for every student every day.” For more information about the standards measured by this assessment, visit the [K–12 Science Standards for Alaska webpage](#) on the Department of Education and Early Development (DEED) website.

More information can be found on the DEED [Alaska Science Assessment webpage](#).

## ***Educator Use of Information***

The Alaska Science Assessment is a **summative assessment**. Summative assessments are designed to provide a snapshot of student, school, or program progress and achievement at the end of a period of instruction. Statewide summative assessments are administered near the end of the school year. The results are used to provide information about the overall status of a student's learning on the state's standards in science. Results of state assessments may be used to measure the effectiveness of an educational program at the school, district, or state level.

The Alaska Science Assessment includes a sufficient number of items to provide an overall picture of an individual student's performance on the grade-level standards, and relative information about how an individual student performed on groups of skills and abilities measured by reporting categories in science.

While the Alaska Science Assessment provides one measure of the knowledge possessed by an individual student, other types of assessment also contribute to the whole picture. The *K–12 Science Standards for Alaska* support learning and understanding through sense making and investigations associated with scientific phenomena in physical science, life science, earth and space science, and engineering and technology. The standards are presented as Performance Expectations and they combine the science and engineering practices, disciplinary core ideas, and cross-cutting concepts into a single statement of what is to be assessed. These are the elements of Three-Dimensional learning and student work is driven by questions arising from phenomena or by an engineering design problem. Students are supported in connecting their learning across units and courses to build a coherent understanding of science ideas and of the crosscutting concepts. For students to achieve proficiency with respect to all the performance expectations in the Alaska standards, they will need regular opportunities to engage in learning that blends all three dimensions of the standards throughout their classroom experiences, from Kindergarten through High School. Many indicators of student learning, such as classroom work, grades, and local assessments, will create a whole picture of a student's skills and knowledge and can be used to identify which learning goals educators and parents of assessments used in classrooms and schools include:

**Curriculum-embedded tests, or program tests**, are assessments that are part of the instructional materials being used by teachers or part of the instructional activities routinely taking place.

**Diagnostic assessments** are evidence-gathering procedures that provide detailed information about which targeted skills and knowledge a student is most struggling to learn. This information is needed by teachers when they decide how to most appropriately design instructional interventions. Due to their time-intensive and specific nature, diagnostic assessments are only used with a small group of students for whom the learning process has broken down and sufficient progress has not been made.

**Formative assessment** is a process used by teachers and students during instruction. Formative assessment provides feedback to adjust ongoing teaching and learning to improve students' achievement.

**Interim assessments** are given periodically throughout an academic year in order to provide individual student performance data, which teachers can use to adjust instruction to meet student needs. Interim assessments can also be used to determine the effectiveness of ongoing instructional programs and methods.

**Universal screening tests** are usually given two or three times during a school year to identify students who may be at risk or to monitor student progress. Universal screening tests focus on targeted, essential skills (such as letter sounds), are brief (1–3 minutes), and are conducted with all students in a grade level.

**Statewide summative assessment results** at the grade, school, and district level provide information about how the educational system is performing for all students. This information may be used to help inform local decision makers about changes needed to instructional programs, needed additional student support, and professional learning for teachers. The following chart provides ideas about how to use information in each type of report.

### ***Dates of Testing & Reporting***

The Alaska Science Assessment was administered from March 27 to April 28, 2023. All reports, including Individual Student Reports, Student Roster Reports, School Summary Reports, and District Summary Reports, will be accessible on the DRC INSIGHT Portal beginning August 8, 2023. Refer to the *Quick Guide for Accessing Reports*. [Table 1](#) lists all reports available for 2023, plus the description and how to use the information contained in each report.

**Table 1: Reports Available for 2023**

Report Type	Description	How to Use Information
<b>Individual Student Report</b>	<ul style="list-style-type: none"> <li>● For students, parents, and educators</li> <li>● <b>**Contains confidential student information**</b></li> <li>● Provides individual student's scale score, achievement level, comparison to other students, relative performance on reporting categories, and summary achievement level descriptors</li> </ul>	<ul style="list-style-type: none"> <li>● Useful for understanding how a student performed overall on the standards at a grade level at the end of the school year.</li> <li>● Compare a student's performance to other students in the school, district, or state.</li> <li>● Draw inferences about the level of student performance relative to specific areas. Based on the reporting categories and student performance in each category, and other classroom- or district-level information available for individual students, educators can use the information about general strengths and weaknesses of individual students for areas needing instructional support possibly in the next school year.</li> </ul>
<b>School Summary Report</b>	<ul style="list-style-type: none"> <li>● For educators and the public</li> <li>● Provides summary information for whole school, district, and state</li> <li>● Includes number of students tested, percentage in each achievement level, median and mean scale scores, and performance on reporting categories</li> </ul>	<ul style="list-style-type: none"> <li>● Useful for information about the performance of the educational system at a school, district, or state level.</li> <li>● Determine grade level or content areas where program or instruction may be improved to increase student achievement.</li> </ul>
<b>District Summary Report</b>	<ul style="list-style-type: none"> <li>● For educators and the public</li> <li>● Provides summary information for whole district and state</li> <li>● Includes all information provided in school summary reports</li> </ul>	<ul style="list-style-type: none"> <li>● Useful for information about the performance of the educational system at a district or state level.</li> <li>● Determine grade level or content areas where program or instruction may be improved to increase student achievement.</li> </ul>
<b>Student Roster Report</b>	<ul style="list-style-type: none"> <li>● For use by educators only</li> <li>● <b>**Contains confidential student information**</b></li> <li>● Provides the following information for each student in a grade level at a school: scale score, achievement level, performance on reporting categories</li> </ul>	<ul style="list-style-type: none"> <li>● Useful for seeing individual student information for a subject.</li> <li>● See trends in performance on reporting categories.</li> <li>● May be useful for educators to consider instructional modifications at a grade level in the next school year.</li> </ul>



# Test Design

## Types of Items

The Alaska Science Assessment contains several different item types. For multiple-choice items, students are asked to select one correct response from four possible answer choices. For multiple-select items, students are asked to select more than one correct response from the answer choices. Technology-enhanced items allow students to demonstrate their knowledge and skills at more complex levels of thinking. Each technology-enhanced item has a similar counterpart item on the accommodated printed versions (large print, braille and print on demand) of the assessment. All items are worth one point each.

---

**Questions on an assessment are also called items.**

---

## Blueprints

A test blueprint describes how the test is designed. It reflects the knowledge, skills, and abilities that are measured on the test. It includes the numbers and types of items and possible points related to the areas of the standards that are tested. A test blueprint is used to guide the writing of items for the test and to ensure that the test is designed to measure the content standards.

The Alaska Science Assessment is designed to measure a student’s understanding of the skills and concepts outlined in the *K–12 Science Standards for Alaska*. Blueprints for the Alaska Science Assessment define the number of items and points available in each reporting category for each grade. The reporting categories reflect the domains within the science standards. For more details, view the entire [Spring 2023 Alaska Science Assessment Blueprint](#).

## Reporting Categories

Items on the Alaska Science Assessment assess skills in the reporting categories listed in [Table 2](#).

**Table 2: Reporting Categories by Grade Level**

Grade	Reporting Category
Grades 5, 8, and 10	Physical Science
Grades 5, 8, and 10	Life Science
Grades 5 and 8	Earth and Space Science

# Score Interpretation

## *Achievement Levels*

Student performance on the Alaska Science Assessment is reported in one of four overall achievement levels. These levels designate the performance of the student on the standards tested at the grade level. The four achievement levels are: Advanced, Proficient, Approaching Proficient, and Needs Support. [Table 3](#) is a general description of what students should be able to do at each overall level.

**Table 3: Achievement Levels and Descriptions**

Achievement Level	Description
<b>Advanced (A)</b>	Student meets the standards and demonstrates mastery of the knowledge and skills on a range of complex grade-level content.
<b>Proficient (P)</b>	Student meets the standards and demonstrates mastery of the knowledge and skills of most grade-level content.
<b>Approaching Proficient (AP)</b>	Student partially meets the standards and may have gaps in knowledge and skills but is approaching mastery of some grade-level content.
<b>Needs Support (NS)</b>	Student may partially meet the standards but needs support to master the knowledge and skills of current grade-level content.

## *Achievement Level Descriptors (ALDs)*

Achievement Level Descriptors or ALDs are general descriptions of what a student in a specific grade level and subject can do at each achievement level. The full set of ALDs can be viewed on the [Alaska Science Assessment Results webpage](#).

## Scores & Score Ranges

### Scale Scores and Raw Scores

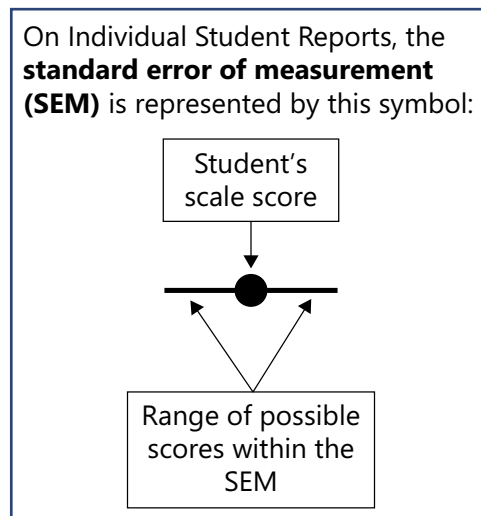
Student performance on the Alaska Science Assessment is represented by the overall scale score. Scale scores differ from raw scores. A **raw score** is the number of points that a student earns on a test. While raw scores can be used in smaller settings such as classrooms, scale scores are needed for large scale, statewide assessments such as the Alaska Science Assessment.

On the Individual Student Report, each student's raw score is converted to a scale score. A **scale score** is a three-digit number that provides a common measure for expressing student performance across different forms of a test. Scale scores have the same meaning when students take different forms of the test (e.g., standard test versus braille test, tests in different years). Using a scale score provides consistent reporting of scores from year to year for each grade. The scale can be represented as a line that is divided into four levels of achievement (advanced, proficient, approaching proficient, and needs support).

### Standard Error of Measurement

The **standard error of measurement** (SEM), shown in [Figure 2](#), 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. On the Individual Student Report, the black circle in the symbol on the graph indicates the student's scale score on the test, and the bars on either side of the black circle represent the range of possible scores the student could receive within the SEM.

**Figure 2: Standard Error of Measurement**



### Score Ranges for Achievement Levels

Each achievement level is defined by a range of scale scores. Alaska educators gathered in June 2023 to recommend what the minimum test score should be to attain each achievement level. These score ranges are different for each grade. With input from DEED, and after a period of public comment, the Alaska State Board of Education and Early Development approved the score ranges for the Alaska Science Assessment.

## Alaska Science Assessment Score Ranges

For science in each grade, the Alaska Science Assessment scores range from 400–800, as shown in [Table 4](#).

**Table 4: Score Ranges by Achievement Level**

Grade	Needs Support	Approaching	Proficient	Advanced
5	400–579	580–615	616–672	673–800
8	400–585	586–612	613–655	656–800
10	400–570	571–600	601–641	642–800

## Reporting Categories

On Individual Student Reports, student performance in each reporting category is reported as a comparison to students who performed at the proficient level, as shown in [Figure 3](#). This provides relative information about the student’s performance in each reporting category. Due to test length and timing constraints, there are not a sufficient number of items in each reporting category to enable a separate scale score or achievement level to be reported.

**Figure 3: Individual Student Report Performance Results Key**

These symbols indicate whether a student performed

**better than** ★ ★ ★ ,

**about the same as** ★ ★ ★ ,

**or not as well as** ★ ★ ★

students who scored at the just barely proficient level.

### Grade 5

The performance expectations for grades 3–5 blend core ideas with science and engineering practices and crosscutting concepts to support students in developing useable knowledge that can be applied between life science, physical science, and earth and space science. Practices are the actions that students are engaged in as they actively learn. The Science and Engineering Practices include asking questions and defining problems, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using Mathematics and computational thinking, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information.

## Grade 5 Life Science Reporting Category

By the end of grade 5 students develop understanding of key concepts that help them make sense of life science. The concepts build upon students' science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are four core ideas: 1) Interdependent Relationships in Ecosystems: Environmental Impacts on Organisms, 2) Inheritance and Variation of Traits: Life Cycles and Traits, 3) Structure, Function, and Information Processing, and 4) Matter and Energy in Organisms and Ecosystems. While the performance expectations in grades 3–5 life science link particular practices with specific core ideas, classroom instruction should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrate some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are likely able to answer questions such as: "How does matter cycle through ecosystems?" and "Where does the energy in food come from and what is it used for?" By developing models, students can describe the movement of matter among organisms and the environment and that energy in animals' food was once energy from the Sun.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are typically able to understand the movement of matter among plants, animals, decomposers, and the environment. Crosscutting concepts of matter and energy, systems and system models, and cause and effect are used by students to support understanding the phenomena related to matter and energy in an ecosystem.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are likely able to ask and partially answer a question such as: "What are some examples of matter cycling through an ecosystem?" These students can apply given explanations to phenomena but need more support in developing their own explanations related to constructing arguments help make sense of matter and energy within an ecosystem. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

## Grade 5 Physical Science Reporting Category

By the end of grade 5 students develop understanding of key concepts that help them make sense of physical science. The concepts build upon students' science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are four core ideas: 1) Forces and Interactions, 2) Energy, 3) Waves, and 4) Structure and Properties of Matter. While the performance expectations in grades 3–5 physical science link particular practices with specific core ideas, classroom instructional should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrates some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core idea Structure and Properties of Matter, these students are likely able to answer a question such as: "When matter changes, does its weight change? Students have an understanding of the idea that regardless of the type of change that matter undergoes, the total weight of matter is conserved. Students can make observations and measurements to identify materials based on their properties. Examples of materials to be identified could include baking soda and other powders, metals, minerals, and liquids.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.

Achievement Examples: for the core idea Structure and Properties of Matter, these students are likely able to measure or possibly graph quantities to provide evidence that regardless of the type of change that occurs when heating, cooling, or mixing substances, the total weight of matter is conserved. These students can also partially understand reactions or changes including phase changes, dissolving, and mixing that can form a new substance.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core idea Structure and Properties of Matter, these students are likely able to answer a question such as "What are some examples of changes in weight?" These students can likely recognize examples of properties such as color, hardness, reflectivity, electrical conductivity, and thermal conductivity. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

## Grade 5 Earth and Space Reporting Category

By the end of grade 5 students develop understanding of key concepts that help them make sense of earth and space science. The concepts build upon students' science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are four core ideas: 1) Weather and Climate, 2) Earth's Systems: Processes that Shape the Earth, 3) Earth's Systems, and 4) Space Systems: Stars and the Solar System. While the performance expectations in grades 3–5 earth and space science link particular practices with specific core ideas, classroom instructional should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrates some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core idea Space Systems: Stars and the Solar System, these students are likely able to answer a question such as "Why is there a seasonal appearance of some stars in the night sky?" These students understand how to demonstrate patterns related to the length and direction of shadows on Earth and the day/night cycle. In addition, these students can construct an argument related to the idea that gravitational force exerted by Earth on objects is directed toward the center of the Earth.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.

Achievement Examples: for the core idea Space Systems: Stars and the Solar System, these students are likely able to demonstrate a working understanding of patterns related to the appearance of the Moon. These students can likely make predictions of how gravitational force, exerted by Earth, can affect objects.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core idea Space Systems: Stars and the Solar System, these students are likely able to answer a question such as "What causes the daily changes in length and direction of shadows in Earth?" These students can use data to recognize examples of changes in the day/night cycle. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

## Grade 8

The performance expectations for grades 6–8 blend core ideas with science and engineering practices and crosscutting concepts to support students in developing useable knowledge that can be applied between life science, physical science, and earth and space science. Practices are the actions that students are engaged in as they actively learn. The Science and Engineering Practices include asking questions and defining problems, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using Mathematics and computational thinking, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information.

### Grade 8 Life Science Reporting Category

By the end of grade 8 students develop understanding of key concepts that help them make sense of life science. The concepts build upon students' science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are five core ideas: 1) Structure, Function, and Information Processing, 2) Matter and Energy in Organisms and Ecosystems, 3) Interdependent Relationships in Ecosystems, 4) Growth, Development, and Reproduction of Organisms, and 5) Natural Selection and Adaptations. While the performance expectations in grades 6–8 life science link particular practices with specific core ideas, classroom instruction should include the use of many practices underlying the performance expectations. The concepts and practices in the performance expectations are based on the grade-band endpoints described in *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (National Research Council, 2012).

**Students achieving 3 stars** meet the performance standards and demonstrate some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core idea Interdependent Relationships in Ecosystems, these students are likely able to answer the question: "How do organisms interact with other organisms in the physical environment to obtain matter and energy?" They can construct explanations for the interactions in ecosystems and the scientific, economic, and social justifications used in making decisions about maintaining biodiversity in ecosystems. Students can use models, construct evidence-based explanations, and use argumentation from evidence.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.



Achievement Examples: for the core idea Interdependent Relationships in Ecosystems, these students are typically able to understand that organisms and populations of organisms are dependent on their environmental interactions both with other organisms and with nonliving factors. They also understand the limits of resources influence the growth of organisms and populations, which may result in competition for those limited resources. Crosscutting concepts of matter and energy, systems and system models, and cause and effect are used by students to support understanding the phenomena they study.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core idea Interdependent Relationships in Ecosystems, these students are likely able to ask and partially answer a question such as: “How does an organism interact with its physical environment to obtain matter and energy?” These students can apply given explanations to phenomena but need more support in developing their own explanations related to constructing arguments help make sense of matter and energy within an ecosystem. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

### **Grade 8 Physical Science Reporting Category**

By the end of grade 8 students develop understanding of key concepts that help them make sense of physical science. The concepts build upon students’ science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are five core ideas: 1) Structure and Properties of Matter, 2) Chemical Reactions, 3) Forces and Interactions, 4) Energy, and 5) Waves and Electromagnetic Radiation. While the performance expectations in grades 6–8 physical science link particular practices with specific core ideas, classroom instructional should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrates some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core idea Chemical Reactions, these students are likely able to answer a question such as “What happens when new materials are formed? What stays the same and what changes?” by building understanding of what occurs at the atomic and molecular scale during chemical reactions. In addition, these students can develop and use models to demonstrate that chemical reactions involve regrouping of atoms to form new substances, and that atoms rearrange during chemical reactions.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.

Achievement Examples: for the core idea Chemical Reactions, these students are likely able to understand parts of the design and the process of optimization in engineering to chemical reaction systems. These students can also partially analyze and interpret data sets while recognizing patterns related to chemical reactions.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core idea Chemical Reactions, these students are likely able to answer a question such as “What are some examples of evidence that a new material has been formed?” These students can likely recognize existing design solutions to a given problem. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

### **Grade 8 Earth and Space Reporting Category**

By the end of grade 8 students develop understanding of key concepts that help them make sense of earth and space science. The concepts build upon students’ science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are six core ideas: 1) Space Systems, 2) History of Earth, 3) Earth’s Interior Systems, 4) Earth’s Surface Systems, 5) Weather and Climate, and 6) Human Impacts. While the performance expectations in grades 6–8 earth and space science link particular practices with specific core ideas, classroom instructional should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrates some mastery of the knowledge and skills on a range of complex grade-level content.

Achievement Examples: for the core ideas Earth’s Interior and Surface Systems, these students are likely able to answer a question such as “What are the causes and the outcomes of the cycling of water through Earth’s systems?” These students understand how Earth’s geosystems operate by modeling the flow of energy and cycling of matter within and among different systems. In addition, these students can investigate the controlling properties of important materials and construct explanations based on the analysis of real geoscience data.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some grade-level content.

Achievement Examples: for the core ideas Earth’s Interior and Surface Systems, these students are likely able to demonstrate a working understanding on ways that geoscience processes provide resources needed by society but also cause natural hazards that present risks to society; both involve technological challenges, for the identification and development of resources and for the mitigation of hazards.

**Students achieving 1 star** may partially meet the performance standards but need support to master the knowledge and skills of current grade-level content.

Achievement Examples: for the core ideas Earth’s Interior and Surface Systems, these students are likely able to answer a question such as “What causes the cycling of water through Earth’s systems?” These students can recognize examples of how the flow of energy and cycling of matter can impact Earth’s geosystems. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

## High School

The performance expectations for high school life science blend core ideas with science and engineering practices and crosscutting concepts to support students in developing useable knowledge that can be applied across both life science and physical science. Practices are the actions that students are engaged in as they actively learn. The Science and Engineering Practices include asking questions and defining problems, developing and using models, planning and carrying out investigations, analyzing and interpreting data, using Mathematics and computational thinking, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information.

### Grade 10 Life Science Reporting Category

By the end of grade 10 students develop understanding of key concepts that help them make sense of life science. The concepts build upon students' science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are five core ideas: 1) Structure and Function, 2) Inheritance and Variation of Traits, 3) Matter and Energy in Organisms and Ecosystems, 4) Interdependent Relationships in Ecosystems, and 5) Natural Selection and Evolution. While the performance expectations in high school life science link particular practices with specific core ideas, classroom instruction should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrate some mastery of the knowledge and skills on a range of complex high school content.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are likely able to answer questions such as: "How do organisms obtain and use energy they need to live and grow?" and "How do matter and energy move through ecosystems?" They can construct explanations of the role of energy in the cycling of matter in organisms and ecosystems. They can apply mathematical concepts to develop evidence to support explanations of the interactions of photosynthesis and cellular respiration and develop models to communicate these explanations.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some high school content.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are typically able to relate their understanding of the tentative nature of science to how explanations may change based on new evidence. Students understand organisms' interactions with each other and their physical environment, how organisms obtain resources and change the environment, and how changes to the environment can affect organisms and/or ecosystems. In addition, students can utilize the crosscutting concepts of Matter and Energy and Systems and System Models to make some sense of ecosystem dynamics.

**Students achieving 1 star** may partially meet the performance standards but need support to master the blending of knowledge and skills at the high school level.

Achievement Examples: for the core idea Matter and Energy in Organisms and Ecosystems, these students are likely able to ask and partially answer questions such as: “How do organisms obtain the energy they need to live and grow? and “Do matter and energy move through ecosystems?” These students can use given models but need more support in developing models that represent the use of systems and system models to make sense of ecosystem dynamics. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

### **Grade 10 Physical Science Reporting Category**

By the end of grade 10 students develop understanding of key concepts that help them make sense of physical science. The concepts build upon students’ science knowledge and skills related to three, interrelated categories: core ideas, science and engineering practices, and crosscutting concepts. There are five core ideas: 1) Structure and Properties of Matter, 2) Chemical Reactions, 3) Forces and Interactions, 4) Energy, and 5) Waves and Electromagnetic Radiation. While the performance expectations in high school physical science link particular practices with specific core ideas, classroom instructional should include the use of many practices underlying the performance expectations.

**Students achieving 3 stars** meet the performance standards and demonstrates some mastery of the knowledge and skills on a range of complex high school content.

Achievement Examples: for the core idea Energy, these students are likely able to answer a question such as “How is energy transferred and conserved?” These students understand energy as a quantitative property of a system that depends on the motion and interactions of matter and radiation within that system. In addition, these students understand that the total change of energy in any system is always equal to the total energy transferred into or out of the system and they can develop and use models representing energy at both the macroscopic scale and the atomic scale.

**Students achieving 2 stars** partially meet the performance standards and may have gaps in knowledge and skills but are approaching mastery of some high school content.

Achievement Examples: for the core idea Energy, these students are likely able to demonstrate a working understanding of engineering principles when they analyze the design of technological devices and/or determine beneficial refinements. Possible devices include: Rube Goldberg machines, wind turbines, solar cells, solar ovens, and generators.

**Students achieving 1 star** may partially meet the performance standards but need support to master the blending of knowledge and skills at the high school level.

Achievement Examples: for the core idea Energy, these students are likely able to answer a question such as “What are some examples of energy transfer?” These students can recognize various forms of energy. Instructional supports that include a blending of practices, core ideas, and crosscutting concepts are recommended.

## **Further Information**

Please refer to the *K–12 Science Standards for Alaska* which are based on the National Research Council's *A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (2012). Also, there are example Achievement Level Descriptors (ALDs) that describe what a typical student scoring at each achievement level can do. A student would not necessarily demonstrate all the example knowledge and skills listed for a particular achievement level on a particular test to score at that level.

[K–12 Science Standards for Alaska](#)

[A Framework for K–12 Science Education: Practices, Crosscutting Concepts, and Core Ideas](#)

[Alaska Achievement Level Descriptors](#)

## Reporting Scores for Groups of Students

To show how students are performing at the school, district, and state levels, Individual Student Reports display a horizontal gray bar with the median scale score displayed within the bar.

School Summary Reports and District Summary Reports display both the median and the mean scale scores for each grouping of students.

### Use of Median

The **median** is the middle number in an ordered list of numbers. Half of the scores are above the median score and half of the scores are below the median. The median is a way to describe the midpoint score in a group of scores. Unlike the mean (sometimes called the average), the median is not affected by scores that are very high or very low when compared to most other scores. Even if there are very high or very low scores that differ largely from most other scores, the median will be in the same position. On the School and District Summary Reports, the red bar represents the lowest possible score to the median at the end (illustrated in [Figure 4](#)).

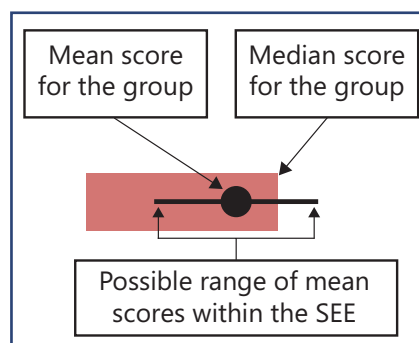
### Use of Mean

The **mean** (sometimes called the average) is calculated by adding the values of a set of scores and dividing by the number of scores in the set. The School and District Summary Reports represent the mean scale score along with the standard error of estimate. The School Summary Report displays the mean for the school, district and state, while the District Summary Report only displays the mean for the district and state.

### Standard Error of Estimate (SEE)

The **standard error of estimate** (SEE), illustrated in [Figure 4](#), provides information about the level of confidence that a sample of students would achieve the same mean score if another sample was tested. The SEE is specific for the particular grade summary group (school, district, or state). The larger the size of the group being reported, the smaller the SEE will be. At the state level, the SEE will be the smallest. When the summary group includes more students, there is greater confidence that the mean score fairly represents the average of all students' scores. On the Summary Reports, the black circle indicates the mean score for that group, and the bars on either side of the black circle represent the possible range of mean scores the group could have received within the SEE.

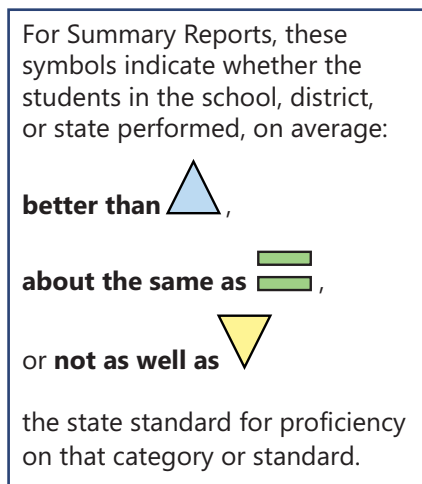
**Figure 4: Mean, Median, and SEE**



## Reporting Categories for Groups of Students

On School and District Summary Reports, performance in each reporting category is reported based on the mean of students' scores in that category at the school, district, or state level. The mean score is compared to the proficient score for the reporting category, within the SEE for the group being reported. Note that the SEE is larger for smaller groups of students; therefore the reported symbol may be different for a small school or district than it would be for a large school or district. For example, a district may be shown as performing *not as well as* the state standard on a particular reporting category, while a very small school in the district with the same mean score may be shown as performing *about the same as* the state standard, due to the difference in the SEE for the small number of students in the school as compared to the district. Performance on the reporting categories, as shown in [Figure 5](#), provides relative information about groups of students to help inform areas where instruction may be improved.

**Figure 5: Summary Reports Performance Results Key**



## Special Circumstances

If a student does not take a test or the test is not scored, school districts document the situation using a Special Circumstances code. Circumstances in which a student does not test would include: absence, extended illness requiring a medical waiver, parent refusal, student refusal, or student transfer. Reasons a student's test was not scored would include security violations or misadministration which resulted in an invalidation. Additionally, if a student does not attempt at least five test items, the assessment is not scored. Special Circumstance codes are listed in [Table 5](#).

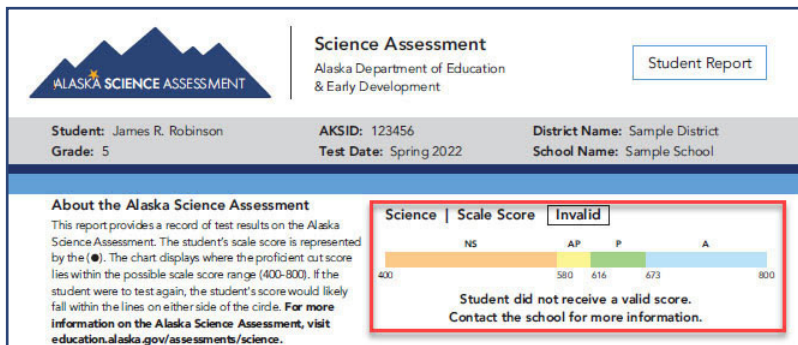
**Table 5: Special Circumstances Codes**

Code	Special Circumstance
ABS	Absent
INV	Invalid
MED	Medical Waiver
NOA	Not Attempted
PRF	Parent Refusal
SRF	Student Refusal
TRN	Transferred

### Individual Student Reports with Special Circumstances

If a student **did not receive a valid score**, an Individual Student Report will be still generated. In these cases, 'Did Not Attempt' or 'Invalid' will display in the scale score box based on the special circumstance code applied, as shown in [Figure 6](#).

**Figure 6: Example of Special Circumstance Code on Individual Student Report**



### Student Roster Reports with Special Circumstances

Students that did not test due to a special circumstance listed above will have a three-character special circumstance code located on the Student Roster Report in the achievement level column, as shown in [Figure 7](#).



**Figure 7: Example of Special Circumstance Codes on Student Roster Reports**

Student Name	AKSID	Scale Score	Achievement Level	Reporting Categories		
				Life Science	Physical Science	Earth and Space Science
StudentLastName StudentFirstName	123456	356	Proficient	■	▲	▼
StudentLastName StudentFirstName	789012	270	Approaching	■	■	▼
StudentLastName StudentFirstName	123456	280	Approaching	▲	▼	■
StudentLastName StudentFirstName	789012		INV			
StudentLastName StudentFirstName	123456	200	Needs Support	▼	▼	■
StudentLastName StudentFirstName	789012	460	Advanced	▲	▲	▲
StudentLastName StudentFirstName	123456		NOA	■	■	■
StudentLastName StudentFirstName	789012	330	Proficient	▲	■	■
StudentLastName StudentFirstName	123456	245	Approaching	■	■	▼
StudentLastName StudentFirstName	789012		PRF	■	■	■

### School or District Summary Reports with Special Circumstances

Special circumstance codes do not appear on School Summary Reports or District Summary Reports.

### Data Privacy

DEED employs suppression rules in public reporting to protect student privacy. Alaska Science Assessment reports have been designed to protect student privacy. Suppression means not showing certain results on a report if an individual student’s results could be identified or inferred. Summary data at the school, district, and/or state level will not be displayed on reports when fewer than five students have tested. On School and District Summary Reports, there are additional suppression rules to guard against reporting assessment data that could be linked to an individual student.

#### Primary Suppression Rules

1. If the number of tested students is less than five, results are suppressed.
2. When the count of tested students is five or higher and:
  - a. All scores fall into only two achievement levels and the number of students in one of those achievement levels is zero, one, or two, percentage ranges (See [Table 6](#)) will be reported for each achievement level instead of actual percentages.

**Table 6: Reporting Percentage Ranges**

<b>Number of students tested</b>	<b>Range displayed for the level with the most students</b>	<b>Range displayed for the other three levels</b>
<b>5–7</b>	≥60%	≤40%
<b>8–9</b>	≥75%	≤25%
<b>10–19</b>	≥80%	≤20%
<b>20–39</b>	≥90%	≤10%
<b>40 or more</b>	≥95%	≤5%

- b. All scores fall into one achievement level, percentage ranges (See [Table 6](#)) will be reported for each achievement level instead of actual percentages.

### **Secondary Data Suppression Guidelines**

Applying the primary suppression rules sometimes creates a situation where the suppressed value may be determined by using the remaining unsuppressed information. The solution to this situation is to apply **secondary suppression**.

Secondary suppression will be applied when a suppressed value can still be determined using the remaining unsuppressed information. Secondary suppression only applies if one school was suppressed because the number of students was less than five (see page 21). If the count of tested students at a school is five or more, but the distribution of students requires the publication of a percentage range instead of an exact percentage, the next smallest school will not be suppressed.

Secondary suppression will be applied to the school-level median scale score on the Individual Student Reports and all applicable school-level information on the Summary Reports.

## Secondary Suppression Example

Table 7 provides an example of secondary suppression applied to a district (District 1) with four schools (Schools A, B, C, and D). An 'X' denotes that primary suppression has been applied at this school and grade level.

Table 7: District 1

Grade	School A	School B	School C	School D	Secondary Suppression needed?
5			X		Yes
8	X		X		No
10					No

For District 1, secondary suppression is necessary in grade 5 because only one school in the district was subject to primary suppression. In the school with the next lowest number of students in grade 5, the rules of secondary suppression will apply. Secondary suppression is not necessary in grade 8 because two schools had suppressed performance following application of the primary suppression rules, and it is not necessary in grade 10 because no schools had data suppressed.

## Downloading Reports

All of the reports can be downloaded from the DRC INSIGHT Portal. Superintendents and District Test Coordinators have access to download all report types (Individual Student Reports, Student Roster Reports, School Summary Reports, and District Summary Reports). Other DRC INSIGHT Portal users have permissions to access reports based on how permissions were set up by the District Test Coordinator (DTC).

To access reports, log into the [DRC INSIGHT Portal](#) and open the *My Applications* menu bar and click *Report Delivery*. Select *View Reports* and make the proper selections in the dropdown fields (some fields will pre-populate). Then select *Show Reports* and two action buttons will appear to *Open PDF* or *Save PDF*.

# Appendices

## A. Alaska Science Assessment Sample Reports

**Appendix A:**  
**Alaska Science Assessment Sample Reports**

# Sample Reports

## Alaska Science Assessment Individual Student Report



### Science Assessment

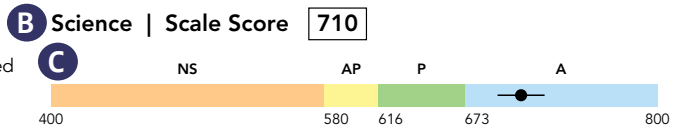
Alaska Department of Education & Early Development

Student Report

<b>Student:</b> James R. Robinson	<b>A</b>	<b>AKSID:</b> 123456	<b>District Name:</b> Sample District
<b>Grade:</b> 5		<b>Test Date:</b> Spring 2023	<b>School Name:</b> 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. **For more information on the Alaska Science Assessment, visit [education.alaska.gov/assessments/science](https://education.alaska.gov/assessments/science).**



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

### E Comparison to State, District, and School Performance

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

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

### 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.

For more information on grade-specific achievement level summaries, visit [education.alaska.gov/assessments/achievement](https://education.alaska.gov/assessments/achievement) or scan the QR code



## Alaska Science Assessment Individual Student Report (continued)

- A** This section presents student, school, and district information. Note that this report is confidential and not for distribution to anyone not authorized to have access to the information.
- B** The number in the box indicates the student's scale scores. *Please note:* If the student did not attempt the test or if the student did not receive a valid score, an Individual Student Report will be generated. In these cases, 'Did Not Attempt' or 'Invalid' will display in the Scale Score box based on the special circumstance code applied. See page 19 for more information about special circumstance codes.
- 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 sides 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). See page 7 for more information on the SEM.
- D** This section describes the student's achievement level determined by the scale score reported in **B**. See page 6 for more information about achievement levels.
- E** This section shows the student's scale score and how it compares to the median scores at the school, district, and state levels. See page 18 for more information about use of the median. If one of the horizontal bars for the school or district is replaced with a statement about student privacy, see the Data Privacy section on page 21 of this guide.
- 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. See page 8 of this guide for more information on student performance on reporting categories.
- G** This section shows the Performance Results Key, which provides the meaning of the number of stars that appear in the Reporting Category section.
- 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. For more information on grade-specific achievement level summaries, please follow the URL or scan the QR code on the bottom of the Individual Student Report.

# Alaska Science Assessment Student Roster Report



## Science Assessment

Alaska Department of Education  
& Early Development

Student Roster Report

**Grade:** 5 **A** **District Name:** Sample District  
**Test Date:** Spring 2023 **School Name:** Sample School

Student Name	AKSID	C Scale Score	D Achievement Level	E Reporting Categories		
				Life Science	Physical Science	Earth and Space Science
StudentLastName StudentFirstName <b>B</b>	123456	650	Proficient	≡	△	▽
StudentLastName StudentFirstName	789012	570	Needs Support	≡	≡	▽
StudentLastName StudentFirstName	123456	580	Approaching Proficient	△	▽	≡
StudentLastName StudentFirstName	789012		INV			
StudentLastName StudentFirstName	123456	400	Needs Support	▽	▽	≡
StudentLastName StudentFirstName	789012	673	Advanced	△	△	△
StudentLastName StudentFirstName	123456		NOA	■	■	■
StudentLastName StudentFirstName	789012	630	Proficient	△	≡	≡
StudentLastName StudentFirstName	123456	579	Needs Support	≡	≡	▽
StudentLastName StudentFirstName	789012		PRF	■	■	■
StudentLastName StudentFirstName	123456	656	Proficient	≡	△	▽
StudentLastName StudentFirstName	789012	572	Needs Support	≡	≡	▽
StudentLastName StudentFirstName	123456	585	Approaching Proficient	△	▽	≡
StudentLastName StudentFirstName	789012		INV			
StudentLastName StudentFirstName	123456	500	Needs Support	▽	▽	≡
StudentLastName StudentFirstName	789012	676	Advanced	△	△	△
StudentLastName StudentFirstName	123456		MED	■	■	■
StudentLastName StudentFirstName	789012	644	Proficient	△	≡	≡
StudentLastName StudentFirstName	123456	594	Approaching Proficient	≡	≡	▽
StudentLastName StudentFirstName	789012		PRF	■	■	■

**G Achievement Levels**  
**Advanced** = 673-800  
**Proficient** = 616-672  
**Approaching Proficient** = 580-615  
**Needs Support** = 400-579

**H Special Circumstance Codes**  
**ABS:** Absent  
**INV:** Invalid  
**TRN:** Transferred  
**NOA:** Not Attempted  
**MED:** Medical Waiver  
**PRF:** Parent Refusal  
**SRF:** Student Refusal

**F Performance Results Key**  
 Your student  
 △ *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*



## Alaska Science Assessment Student Roster Report (continued)

- A** This section presents school and district information. Note that this report is confidential and not for distribution to anyone not authorized to have access to the information.
- B** This section shows students at the tested grade level within the school, sorted alphabetically by last name. The Alaska Student ID number is also included.
- C** This section shows the student's scale score. Students that have a blank in this column did not take the assessment due to a special circumstance.
- D** This section indicates the achievement level earned by the student. If a student has a blank scale score, this column will include the special circumstance code that indicates the reason. Further information regarding achievement levels and special circumstances codes can be found by **G**, **H**, and on pages 6 and 19 of this guide.
- E** This section indicates the reporting categories tested for this grade level, as well as a symbol representing each student's performance in that reporting category. Further information regarding reporting category symbols and numbers can be found in **F** and on page 19 of this guide.
- F** This section shows the Performance Results Key, which provides the meaning of each of the four symbols used to report the student performance.
- G** This section shows the four achievement levels that can be earned on the Alaska Science Assessment, as well as the score ranges for each achievement level at this grade level.
- H** This section shows special circumstances codes that may indicate why a student did not receive a scale score. More information on special circumstances codes can be found on page 19 of this guide.

# Alaska Science Assessment School Summary Report

**Science Assessment**  
Alaska Department of Education & Early Development

School Summary Report

District Name: District Name      Subject: Science  
School Name: School Name 1      Test Date: Spring 2023

### Achievement Level Summary

Group	# Tested	% in Each Level			
School	999	39.1	10.2	29.1	30.6
District	9,999	26.1	8.2	25.3	40.4
State	99,999	26.1	35.2	30.3	8.4

### Achievement Level Summary | By Grade

Grade	Group	# Tested	% in Each Level			
5	School	95	45.8	5.1	45.1	0
	District	9,999	27.1	10.2	17.3	45.4
	State	99,999	39.1	11.2	22.3	39.4
8	School	0	N/A			
	District	0	N/A			
	State	99,999	39.1	11.2	12.3	39.4
10	School	4	Data not shown to protect student privacy			
	District	9,999	30.1	9.2	16.3	44.4
	State	99,999	28.1	32.2	22.3	17.4

Needs Support    Approaching Proficient    Proficient    Advanced

Page 1

Achievement Level Summary by Grade

Median and Mean Scale Scores by Grade

Performance by Reporting Category by Grade

Page 2

### Performance Results Key

The school, district, or state

- ▲ did better than the state standard for proficiency
- ▬ did about as well as the state standard for proficiency
- ▼ did not do as well as the state standard for proficiency
- did not attempt any items in this category

Page 3

**THIS PAGE IS INTENTIONALLY BLANK**

# Alaska Science Assessment School Summary Report (continued)



## Science Assessment

Alaska Department of Education  
& Early Development

School Summary Report

**District Name:** District Name  
**School Name:** School Name 1

**A**

**Subject:** Science  
**Test Date:** Spring 2023

### B Achievement Level Summary

Group	# Tested	% in Each Level			
School	999	39.1	10.2	20.3	30.4
District	9,999	26.1	8.2	25.3	40.4
State	99,999	26.1	35.2	30.3	8.4

### D Achievement Level Summary | By Grade

Grade	Group	# Tested	% in Each Level			
5	School	95	≥95	≤5	≤5	≤5
	District	9,999	27.1	10.2	17.3	45.4
	State	99,999	39.1	11.2	12.3	39.4
8	School	0	N/A			
	District	0	N/A			
	State	99,999	39.1	11.2	12.3	39.4
10	School	4	Data not shown to protect student privacy			
	District	9,999	30.1	9.2	16.3	44.4
	State	99,999	28.1	32.2	32.3	7.4

SAMPLE REPORT

**C**

	Needs Support		Approaching Proficient		Proficient		Advanced
--	---------------	--	------------------------	--	------------	--	----------

250075-000001-16523

Page 1

**NOTE:** If N/A is reported on the Summary Report this indicates that no students tested in that particular grade.

## Alaska Science Assessment School Summary Report (continued)

- A** This section presents the school and district information.
- B** This section shows the Achievement Level Summary: the number of students tested within the school, as well as the percentage of students that scored within each achievement level. For comparison, this table also shows the number of students that tested within the district, as well as the full population of students that tested within the state. Additionally, the percentages of students that scored in each achievement level within the district and state are shown to assist with comparison. Note: if the horizontal bar is replaced with a statement about student privacy, or if the data is displayed in ranges instead of a specific percentage, see the Data Privacy section and data suppression rules on pages 21–23 of this guide.
- C** This is the key that shows each color representing each achievement level within the horizontal graphs on page 1 of the School Summary Report.
- D** This section shows the Achievement Level Summary by Grade: the number of students tested within the school broken down by grade level, as well as the percentage of students that scored within each achievement level. Again, district and state percentages are shown for comparison. Note: if the horizontal bar is replaced with a statement about student privacy, or if the data is displayed in ranges instead of a specific percentage, see the Data Privacy section and data suppression rules on pages 21–23 of this guide.

# Alaska Science Assessment School Summary Report (continued)



School Summary Report

<b>District Name:</b> District Name	<b>Subject:</b> Science
<b>School Name:</b> School Name 1	<b>Test Date:</b> Spring 2023

### Achievement Levels

Overall scores on the Science Assessment are divided into four achievement levels: Needs Support, Approaching Proficient, Proficient, and Advanced.

### Median Scale Scores

The number of students, median scale score, and standard error are reported at the School, District, and State level in the table below. The median is the middle number in an ordered list of numbers. Unlike a mean (average), it is unaffected by very low or very high test scores. The —●— symbol shows the students' scale score where the dark circle is the score. If the students were to test again, the students' scores would likely fall within the lines on either side of the circle. The standard error decreases as the sample size increases.

For more information on the Alaska Science Assessment please visit [education.alaska.gov/assessments/science](http://education.alaska.gov/assessments/science)

### E Median Score Summary — By Grade

Grade	Group	# Tested	Scale Score		400	500	600	700	800
			Median	Mean					
5	School	4	Data not shown to protect student privacy						
	District	9,999	550	555					
	State	99,999	525	535					
8	School	0	N/A	N/A					
	District	0	N/A	N/A					
	State	99,999	560	555					
10	School	999	465	440					
	District	9,999	550	560					
	State	99,999	525	530					

SAMPLE REPORT

## Alaska Science Assessment School Summary Report (continued)

- E** This section shows the Score Summary by Grade, providing the median and mean scores, as well as the standard error of estimate (SEE) for the mean. Data is shown for the school as well as the district and state to assist with comparison. Note: see page 18 of this guide for more information about the median score, mean score, and SEE. Also, if the horizontal bar is replaced with a statement about student privacy, see the Data Privacy section on page 21 of this guide.

# Alaska Science Assessment School Summary Report (continued)



School Summary Report

<b>District Name:</b> District Name	<b>Subject:</b> Science
<b>School Name:</b> School Name 1	<b>Test Date:</b> Spring 2023

## F Performance by Reporting Category

The table below shows how the performance of the school, district, and state compared to the state standard for proficiency on specific areas of the Science Assessment.

Grade	# Tested	Reporting Category	School	District	State
5	999	Life Science	▲	≡	▲
		Physical Science	≡	▲	≡
		Earth and Space Science	▼	≡	▲
8	0	Life Science	N/A	N/A	▲
		Physical Science	N/A	N/A	≡
		Earth and Space Science	N/A	N/A	▲
10	999	Life Science	▲	≡	▲
		Physical Science	≡	▲	≡

SAMPLE REPORT

## G

<b>Performance Results Key</b>	
The school, district, or state	
▲ <i>did better than</i> the state standard for proficiency	▼ <i>did not do as well as</i> the state standard for proficiency
≡ <i>did about as well as</i> the state standard for proficiency	■ <i>did not attempt any items in this category</i>




## Alaska Science Assessment School Summary Report (continued)

- F** This section shows the Performance by Reporting Category, represented by symbols. Information is shown for the school, district, and state. See page 19 for more information about performance by reporting categories for groups of students on the summary reports. Note: if the symbols are replaced with a statement about student privacy, see the Data Privacy section on page 21 of this guide.
- G** This section shows the Performance Results Key, which provides the meaning of each of the four performance symbols.

**NOTE:** *If N/A is reported on the Summary Report this indicates that no students tested in that particular grade.*

# Alaska Science Assessment District Summary Report



**Science Assessment**  
Alaska Department of Education  
& Early Development

District Summary Report

---

District Name: District Name

Subject: Science  
Test Date: Spring 2023

---

### Achievement Level Summary

Group	# Tested	% in Each Level			
District	9,999	26.1	32.2	32.3	8.4
State	99,999	26.1	32.2	32.3	8.4

---

### Achievement Level Summary | By Grade

Grade	Group	# Tested	% in Each Level			
5	District	9,999	27.1	10.2	27.3	45.4
	State	99,999	29.1	11.2	28.3	39.4
8	District	0	N/A			
	State	99,999	28.1	11.2	29.3	39.4
10	District	9,999	30.1	9.2	26.3	44.4
	State	99,999	28.1	32.2	32.3	7.4

Needs Support
  Approaching Proficient
  Proficient
  Advanced

250075-000001-16523 Page 1

- Achievement Level Summary by Grade
- District and State Level Comparisons

- Median and Mean Scale Scores by Grade
- District and State Level Comparisons

Performance by Reporting Category by Grade

Summary Report

---

Approaching

Level in the table unaffected by very the score. If the circle. The standard

Science

for proficiency on

700	800	District	State
		#	Δ
		Δ	■
		■	Δ
		Δ	Δ
		Δ	■
		Δ	Δ
		■	Δ
		Δ	■

**Performance Results Key**

The district or state

Δ did better than the state standard for proficiency    ▽ did not do as well as the state standard for proficiency

■ did about as well as the state standard for proficiency    □ did not attempt any items in this category

250085-000003-16523 Page 3

**THIS PAGE IS INTENTIONALLY BLANK**

# Alaska Science Assessment District Summary Report (continued)



## Science Assessment

Alaska Department of Education  
& Early Development

District Summary Report

**District Name:** District Name

**A**

**Subject:** Science

**Test Date:** Spring 2023

### B Achievement Level Summary

Group	# Tested	% in Each Level			
District	9,999	26.1	8.2	25.3	40.4
State	99,999	26.1	35.2	30.3	8.4

### D Achievement Level Summary | By Grade

Grade	Group	# Tested	% in Each Level			
5	District	9,999	27.1	10.2	17.3	45.4
	State	99,999	39.1	11.2	12.3	39.4
8	District	0	N/A			
	State	99,999	39.1	11.2	12.3	39.4
10	District	9,999	30.1	9.2	16.3	44.4
	State	99,999	28.1	32.2	32.3	7.4

SAMPLE REPORT

**C**

Needs Support	Approaching Proficient	Proficient	Advanced
---------------	------------------------	------------	----------

## Alaska Science Assessment District Summary Report (continued)

- A** This section presents the district information.
- B** This section shows the Achievement Level Summary: the number of students tested within the district, as well as the percentage of students that scored within each achievement level. For comparison, this table also shows the full population of students that tested within the state. Additionally, the percentages of students that scored in each achievement level within the state are shown to assist with comparison. Note: if the horizontal bar is replaced with a statement about student privacy, or if the data is displayed in ranges instead of a specific percentage, see the Data Privacy section and data suppression rules on pages 21–23 of this guide.
- C** This is the key that shows each color representing each achievement level within the horizontal graphs on page 1 of the District Summary Report.
- D** This section shows the Achievement Level Summary by Grade: the number of students tested within the district broken down by grade level, as well as the percentage of students that scored within each achievement level. Again, state percentages are shown for comparison. Note: if the horizontal bar is replaced with a statement about student privacy, or if the data is displayed in ranges instead of a specific percentage, see the Data Privacy section and data suppression rules on pages 21–23 of this guide.

# Alaska Science Assessment District Summary Report (continued)



District Summary Report

<b>District Name:</b> District Name	<b>Subject:</b> Science
	<b>Test Date:</b> Spring 2023

### Achievement Levels

Overall scores on the Science Assessment are divided into four achievement levels: Needs Support, Approaching Proficient, Proficient, and Advanced.

### Median Scale Scores

The number of students, median scale score, and standard error are reported at the District and State level in the table below. The median is the middle number in an ordered list of numbers. Unlike a mean (average), it is unaffected by very low or very high test scores. The —●— symbol shows the students’ scale score where the dark circle is the score. If the students were to test again, the students’ scores would likely fall within the lines on either side of the circle. The standard error decreases as the sample size increases.

For more information on the Alaska Science Assessment please visit [education.alaska.gov/assessments/science](http://education.alaska.gov/assessments/science)

### E Median Score Summary — By Grade

Grade	Group	# Tested	Scale Score	
			Median	Mean
5	District	9,999	550	555
	State	99,999	525	535
8	District	0	N/A	N/A
	State	99,999	560	555
10	District	9,999	550	560
	State	99,999	525	530

SAMPLE REPORT

## Alaska Science Assessment District Summary Report (continued)

- E** This section shows the Score Summary by Grade, providing the median and mean scores, as well as the standard error of estimate (SEE) for the mean. Data is shown for the district as well as the state to assist with comparison. Note: see page 18 of this guide for more information about the median score, mean score, and SEE. Also, if the horizontal bar is replaced with a statement about student privacy, see the Data Privacy section on page 21 of this guide.

# Alaska Science Assessment District Summary Report (continued)



District Summary Report

<b>District Name:</b> District Name	<b>Subject:</b> Science
	<b>Test Date:</b> Spring 2023

**F Performance by Reporting Category**

The table below shows how the performance of the district and state compared to the state standard for proficiency on specific areas of the Science Assessment.

Grade	# Tested	Reporting Category	District	State
5	9,999	Life Science	≡	△
		Physical Science	△	≡
		Earth and Space Science	≡	△
8	0	Life Science	N/A	△
		Physical Science	N/A	≡
		Earth and Space Science	N/A	△
10	9,999	Life Science	≡	△
		Physical Science	△	≡

SAMPLE REPORT

**G**

**Performance Results Key**  
 The district or state

△ <i>did better than</i> the state standard for proficiency	▽ <i>did not do as well as</i> the state standard for proficiency
≡ <i>did about as well as</i> the state standard for proficiency	■ <i>did not attempt any items in this category</i>



## Alaska Science Assessment District Summary Report (continued)

- F** This section shows the Performance by Reporting Category, represented by symbols. Information is shown for the district and state. See page 19 for more information about performance by reporting categories for groups of students on the summary reports. Note: if the symbols are replaced with a statement about student privacy, see the Data Privacy section on page 21 of this guide.
- G** This section shows the Performance Results Key, which provides the meaning of each of the four performance symbols.

**NOTE:** *If N/A is reported on the Summary Report this indicates that no students tested in that particular grade.*

**THIS PAGE IS INTENTIONALLY BLANK**

Copyright © 2023 by the Alaska Department of Education & Early Development. Only State of Alaska educators and citizens may copy, download and/or print the document, located online at [education.alaska.gov](http://education.alaska.gov). Any other use or reproduction of this document, in whole or in part, requires written permission of Alaska Department of Education & Early Development and the publisher.



## **Educator Guide to Assessment Reports**

**2023**