



# *Alaska*

## Comprehensive System of Student Assessment (CSSA)

### **Guide to Test Interpretation for the Grade 4 Science Standards Based Assessment**



**For Teachers and Staff**

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**Spring 2015**

# Introduction

This Guide to Test Interpretation provides an overview of reporting for the Alaska Grade 4 Science Standards Based Assessment (SBA). It is intended to help educators interpret test report data in order to better meet the needs of individual students and the district as a whole. The following information is included in this guide:

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# ***Explanation of Examinations and Scoring***

## **The Purpose of Testing**

The purpose of the Standards Based Assessment (SBA) is to (a) determine on a statewide basis the extent to which students are meeting statewide performance standards; (b) produce statewide information that enables sound decision making by policy makers, parents, educators, and the public; and (c) provide a focus in order to improve instruction [4 AAC 06.700].

The Alaska Standards Based Assessment (SBA) is the result of intense effort and collaboration among teachers, administrators, and the Alaska State Board of Education. The proficient score on the examination was designed to reflect what students should know as a result of their public school experience.

## **How Results are Measured**

Students are tested on the Alaska Performance Standards/Grade Level Expectations (PSGLEs) in science. The PSGLEs are aligned to the Alaska Content Standards and are statements that define what all students should know and be able to do at the end of a given grade level. Each Performance Standard/Grade Level Expectation is meant to further define a content standard. Alaska teachers developed the PSGLEs for Alaska students. For detailed information on the standards, please access the Department of Education & Early Development (EED) publication, *Alaska Standards: Content and Performance Standards for Alaska Students* available on the EED website at: <http://education.alaska.gov/standards/>.

## **The Purpose and Usefulness of Raw Scores and Scale Scores**

### ***Raw Score***

The primary indicator of performance on the science SBA is the raw score. A raw score is reported for each examinee in science. The raw score is the number of multiple-choice items answered correctly plus the number of points earned on short- and extended-response items on the science SBA. By itself, the raw score has limited utility; it can only be interpreted in reference to the total number of items on the science SBA. Raw scores cannot be compared across tests or administrations.

### ***Scale Score***

Since a given raw score may not represent the same skill level on every test form, all statewide assessment score reports include scale scores. Scale scores are statistical conversions of raw scores that adjust for slight shifts in item difficulties and permit valid comparison across all test administrations within a particular subject. The scale score range for the science SBA is from a minimum of 100 to a maximum of 600.

When new test forms are developed, the new items will require slightly different levels of subject-area skill to answer correctly. This depends on the difficulty of the specific questions used on each form. To be fair to students, to permit valid comparison of test scores across administrations, and to maintain a consistent passing score, the skills represented by each score point must remain consistent from year to year.

As noted previously, scale scores adjust for slight shifts in underlying difficulty levels at each score point and provide valid points of comparison across all test administrations within a particular grade and subject. With scale scores, schools can compare the demonstrated knowledge and ability of different cohorts across years. Comparing scale scores on the assessments can help schools determine the impact of instruction and curriculum.

### ***Scale Score Interpretations and Limitations***

The scale scores associated with the science SBA are not equated with other grade 4 SBA examinations, even though they share a common scale score range. Therefore, interpretation of individual score differences between the assessments is inappropriate.

## ***Components of the Science SBA***

The science SBA was developed from a variety of written sources, and assesses the students' skills in the areas of: inquiry, technology, nature of science, physical science, life science, and earth science. The science SBA contains multiple-choice questions with four possible answer choices. These answers are machine-scored. Short- and extended-response questions allow students the opportunity to create a response to meaningful situations to demonstrate their knowledge and skill. Responses are scored by professional staff experienced in providing reliable and consistent hand scoring. Questions requiring a written response allow for full or partial credit.

## Frequently Asked Questions

Subject/Standard		Points Possible*	Points Earned*	Scale Score Earned*
Science		62	62	600
A, E-G	Inquiry and Nature of Science	20	20	600
B	Concepts of Physical Science	14	14	600
C	Concepts of Life Science	16	16	535
D	Concepts of Earth Science	12	12	534

\* This illustration is not based on the current administration.

### Question:

In 8<sup>th</sup> grade science, the maximum *overall* scale score is 600. However, the four maximum subject/standard scale scores are 600, 600, 535, and 534. How can these four numbers combine into a higher number (600) than two of the four numbers?

### Answer:

It is necessary to understand the relationship between raw scores and scale scores to appreciate the seeming anomaly.

#### *Range:*

Two things, the number of items and the difficulty of the items that make up a standard, determine the *range* of possible scale scores.

- The longer the test, the wider the range of scale scores.
- The easier the test, the lower the maximum scale score.
- For any given person, the raw score for the total test is the sum of the raw scores for the standards, BUT the total scale score is not the sum, nor the average of the standard scale scores.
- There is no mathematical relationship between the average of the scale scores for the standards and the average overall scale score.

***Impact of hard and easy items:***

The relationship between raw scores and scale scores is designed to eliminate the effect of taking a hard test or an easy test, or the fact that the items from one standard may be easier than the items from another standard.

- Students would need fewer correct responses on a “harder” standard to achieve the same scale score they would get by having more correct responses on an “easier” standard.

**OR**

- Answering 70% of the items correctly on a “harder” standard represents a higher level of ability than answering 70% of the items correctly on an “easier” standard.
- The raw score to scale score conversion levels the playing field, removing the impact of harder items or easier items in a given standard.
- The total test scale score is not a simple average of the standard scale scores.
  - The relationship is much too complex to be described by an average that ignores the number of items in each test and the average difficulty of the items making up that standard.

**Question:**

Is it possible for a student to answer all of the items correctly in a standard and not get the highest possible scale score (600)?

**Answer:**

Yes.

- A perfect score in a standard with easier items will translate into a lower scale score than a perfect score in a standard with harder items.
  - Both maximum scores may be less than the maximum score for the overall test.
    - This is due to the distribution of item difficulties and the number of items.
    - It is easier to answer 11 of 11 items correctly in a single standard than it is to answer 64 of 64 items correctly on the entire test.
      - The scale score for answering all of the items correctly on a standard will necessarily represent less ability than answering all of the items correctly on the overall test.
      - Although the scale score span goes from 100 to 600, it does not mean it is possible to get the highest or lowest scale score on every standard or even the overall test.

## Using Results

The science SBA results and reports provide useful information for determining the performance of students in your school and classroom. This guide will also help you prepare for questions from parents, students, and other members of the education community regarding the science SBA results.

Each report is designed to clearly present the information most useful to you and to parents and students. The audience and student populations for each of the science SBA reports are listed below.

### Science SBA Report Information

Report
<b>For Schools—Teachers and Administrators</b>
Guide to Test Interpretation for Teachers and Staff
Guide to Test Interpretation for Parents and Students
Student Reports
School Student Roster
School Summary Report
School Subpopulation Summary Report
<b>For Districts</b>
Guide to Test Interpretation for Teachers and Staff
Guide to Test Interpretation for Parents and Students
Student Reports
School Student Rosters
School Summary Reports
School Subpopulation Summary Report
District School Roster
District Subpopulation Summary Report
File Layout for Student Data File
Student Data File
File Layout for Abbreviated Student Data File
Abbreviated Student Data File

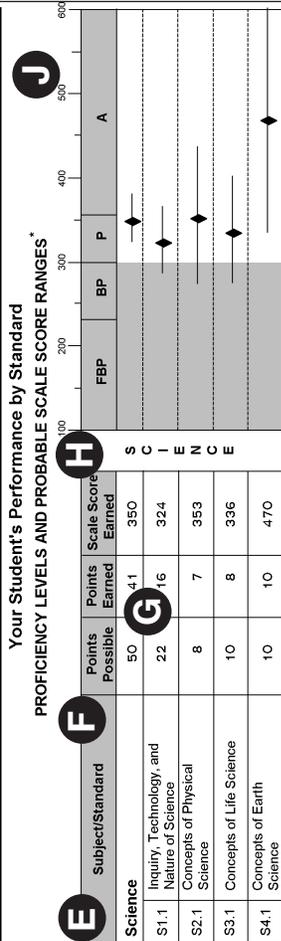
# Sample Reports

## Student Report

### ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA) SCIENCE STANDARDS BASED ASSESSMENT (SBA) STUDENT REPORT 2015 SPRING



STUDENT NAME : LAST NAME, FIRST NAME MIDDLE NAME DISTRICT : ALASKA DISTRICT GRADE : 04  
 BIRTHDATE : 99/89/9999 SCHOOL : ALASKA ELEMENTARY SCHOOL STATE ID NUMBER : 9999999999  
 DISTRICT ID NUMBER : 999999999



**STANDARDS SKILL PERFORMANCE**

This report provides a record of Your Student's test results on the science SBA.

**Proficiency Levels**  
 The science SBA is designed to measure knowledge and skills against state standards. Scores on these tests are grouped into four proficiency levels. The scores on each test are converted into a scale score range. Each level with each level shows characteristics of the proficiency level. Levels can be found at <http://education.alaska.gov>.

**Scale Score**  
 The scale score earned by the student determines the student's performance level of proficient or not proficient. The scale score is converted into a scale score range. For each subject, the chart displays where the proficient cut score lies within the possible scale score range (100 - 600). Scores in the shaded area indicate not proficient, whereas scores in the non-shaded area indicate proficient.

**Skills Performance**  
 Science is composed of different skills. The chart on the right shows how your student did on these skills.

**Interpretation of Chart**  
 Scale scores are represented by the diamond (♦). For each subject, the chart displays where the proficient cut score lies within the possible scale score range (100 - 600). Scores in the shaded area indicate not proficient, whereas scores in the non-shaded area indicate proficient.

For example, Your Student's scale score in Science is 350. Note that the diamond representing this score falls in the Proficient scale score range. If your student were to take a similar test multiple times, the range of these scores would fall between 321 and 379 (as represented by the line) 80% of the time.

**Alaska's Science Proficiency Level Descriptors – 4th Grade**

Proficiency Level	Science	Scale Score Ranges
Advanced	The student displays a highly developed conceptual understanding by designing simple investigations and incorporating the processes of science; explaining technological, local, and historical connections to science; measuring and explaining the characteristics of matter including the phase changes caused by heating and cooling; providing detailed explanations of past and present organisms and comparing their links to the Alaska environment; explaining and modeling the rock cycle and cycles caused by the changing positions of the Sun and Earth; explaining causes of surface changes on Earth; and explaining and modeling that objects in the universe can be observed and described by their properties, locations, and movements.	Science 357 and Above
Proficient	The student demonstrates a basic conceptual understanding by applying the processes of science during simple investigations; demonstrating connections between science and technological, local, and historical perspectives; identifying and comparing the characteristics of matter including phase changes caused by heating and cooling; explaining past and present organisms and their Alaska environment; describing simple processes of the rock cycle and cycles caused by the changing positions of the Sun and Earth; identifying the causes of surface changes on Earth; and recognizing that objects in the universe can be observed and described by their properties, locations, and movements.	Science 300 - 356
Below Proficient	The student shows a fundamental understanding by recognizing the processes of science during simple investigations; exploring technological, local, and historical connections to science; describing the characteristics of matter including phase changes caused by heating and cooling; identifying past and present organisms and recognizing how they are linked to their Alaska environment; recognizing weathering as part of the rock cycle; connecting daily cycles to seasonal activities; naming causes of surface changes on Earth; and recognizing that objects in the universe can be observed and described by their properties, locations, and movements.	Science 233 - 299
Far Below Proficient	There is a significant need for additional instructional opportunities to achieve the proficient level.	Science 232 and Below

\* Proficiency Level: A = Advanced, P = Proficient, BP = Below Proficient, FBP = Far Below Proficient 99 - 999999 99/99/99 99 : 99

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

## Student Report (continued)

- A** Presents student demographics.
- B** Indicates the student's scale score and proficiency level in science. In order to be considered proficient, the student must score at or above the Alaska Proficient Scale Score.
- C** Describes the proficiency levels reported in section B. Scores on the science SBA are grouped into four proficiency levels.
- D** Describes the scale scores reported in section B. The scale score earned by the student determines the student's performance level of advanced, proficient, below proficient, or far below proficient on the science SBA. The points earned are converted into a scale score that takes into consideration the fact that some items that make up a standard on the test are more difficult than others. Therefore, a student can earn the same raw score on two standards and end up with two different scale scores. For this reason, you cannot divide the points earned by the points possible for a standard to derive the scale score.
- E** Lists the Performance Standard categories.
- F** Lists the total points possible for the Performance Standard categories.
- G** Lists the points earned by the student for the Performance Standards on the science SBA. Points earned are not valid for comparisons across grades, and/or standards. The same raw score on two standards usually results in two different scale scores depending on the number of questions and the difficulty of the questions. For this reason, you cannot divide the points earned by the points possible to determine meaningful percentages.
- H** Lists the scale score equivalent for points earned.
- I** Explains the information found in the probable scale score range chart (J).
- J** Graphically illustrates the student's scale score (◆), the student's 80% confidence interval for Performance Standards and total test, and the proficiency cut score for the total test.
- K** Describes the skills necessary for a student to be proficient, along with the range of scale scores associated with each level.

ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA)  
 SCIENCE STANDARDS BASED ASSESSMENT (SBA)  
 SCHOOL STUDENT ROSTER  
 2015 SPRING

DISTRICT : ALASKA DISTRICT  
 SCHOOL : ALASKA ELEMENTARY SCHOOL  
 GROUP : ALASKA GROUP

PAGE : 1  
 GRADE : 04

**STUDENT SCALE SCORE INFORMATION**

This report includes summary information for each student within a school.  
 The report lists students alphabetically.

Proficiency Level Range	Science					Proficiency Level <sup>1</sup>	Overall	S1.1 Inquiry, Technology, and Nature of Science	S2.1 Concepts of Physical Science	S3.1 Concepts of Life Science	S4.1 Concepts of Earth Science
	A	B	C	D	E						
Advanced >356							296	298	300	299	299
Proficient 300-356							319	318	337	327	318
Below Proficient 233-299							302	301	344	294	301
Far Below Proficient <233							325	361	305	378	258
<b>State Average Scale Score</b>							337	269	235	224	174
<b>District Average Scale Score</b>							305	289	305	287	468
<b>School Average Scale Score</b>							325	341	358	325	283
STUDENT'S LAST, FIRST MIDDLE						P	394	341	436	455	393
STUDENT'S LAST, FIRST MIDDLE						BP	248	244	235	255	258
STUDENT'S LAST, FIRST MIDDLE						P	264	269	363	235	233
STUDENT'S LAST, FIRST MIDDLE						P	430	464	358	375	468
STUDENT'S LAST, FIRST MIDDLE						A	197	190	235	194	174
STUDENT'S LAST, FIRST MIDDLE						FBP	226	244	202	194	233
STUDENT'S LAST, FIRST MIDDLE						FBP					
STUDENT'S LAST, FIRST MIDDLE						FBP					

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<sup>1</sup>Proficiency Level: A = Advanced, P = Proficient, BP = Below Proficient, FBP = Far Below Proficient, ABS = Absent, INV = Invalid, MOD = Modified Administration, NOA = Not Attempted, PRF = Parent Refusal, SKF = Student Refusal, SUS = Suspension

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

## School Student Roster (continued)

This report includes summary information for each student within a school. The report lists students alphabetically by ascending grade.

- A** Indicates the proficient scale scores for the science SBA.
- B** Indicates the average scale score on the science SBA, as well as the average scale score by Performance Standard category for the state, district, and school. It also lists the proficiency level and scale scores in science for each student reported to the school.
- C** Indicates the state average scale scores for the science SBA and Performance Standards.
- D** Indicates the district average scale scores for the science SBA and Performance Standards.
- E** Indicates the school average scale scores for the science SBA and Performance Standards.
- F** Indicates the proficiency level and scale score by test and Performance Standard for each student reported to the school. This section may also indicate why a student did not receive a score.
  - ABS = absent
  - INV = invalid
  - MOD = modified examination\*
  - NOA = test not attempted
  - PRF = parent refusal
  - SRF = student refusal
  - SUS = suspension

**\*Students with disabilities cannot be denied the modification(s) their IEP teams have documented, but students can refuse the modification(s). NOTE: Modified tests are invalid and will not be scored.**

ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA)  
 SCIENCE STANDARDS BASED ASSESSMENT (SBA)  
 SCHOOL SUMMARY REPORT  
 2015 SPRING



DISTRICT : ALASKA DISTRICT  
 SCHOOL : ALASKA ELEMENTARY SCHOOL

PAGE : 1  
 GRADE : 04

**PERFORMANCE SUMMARY**

This report provides an analysis of group standards mastery using the average scale score obtained for each reportable standard and details the percent of students in each proficiency level.

	<b>A</b> Proficiency Level Comparison		<b>B</b> Science Performance by Standard				Total	Average	Standard Deviation
	Level 1	Level 2	S.1.1 Inquiry, Technology, and Nature of Science	S.2.1 Concepts of Physical Science	S.3.1 Concepts of Life Science	S.4.1 Concepts of Earth Science			
<b>C</b> Points Possible	22	10	8	10	10	10			
<b>D</b> Average Points Earned	33.5	14	6.5	6.6	6.3	6.3			
<b>E</b> Average Scale Score	302	311	344	294	301	301			
<b>F</b> Average Scale Score	319	318	327	327	318	318			
<b>F</b> Average Scale Score	296	298	300	299	299	299			

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**PROFICIENCY LEVEL SUMMARY**

	<b>G</b> Science					Total	Percent	Number Tested
	Advanced	Proficient	Below Proficient	Far Below Proficient	Not Tested			
<b>School</b>	14	21	20	11	11	66	100.0%	66
<b>District</b>	21.2%	31.8%	30.3%	16.7%	16.7%	628	100.0%	628
<b>State</b>	27.7%	32.2%	30.7%	9.4%	9.4%	8918	100.0%	8918

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

## School Summary Report (continued)

This report provides an analysis of group standards mastery using the average scale score obtained for each reportable standard and details for the percent of students in each proficiency level.

- A** Explains the comparison of proficiency levels.
- B** Lists the total points possible for the science SBA and the Performance Standard categories, as well as the average points earned for the school. It also lists the state, district, and school average scale scores for the science SBA and the Performance Standard categories.
- C** Lists the points possible for the science SBA and Performance Standard categories.
- D** Lists the average points earned and average scale score at the school level for the science SBA and Performance Standard categories.
- E** Lists the average scale score at the district level for the science SBA and Performance Standard categories.
- F** Lists the average scale score at the state level for the science SBA and Performance Standard categories.
- G** Lists the total number and percent of students tested, as well as the number and percent of students who were advanced, proficient, below proficient, and far below proficient in science at the school, district, and state levels.

**Note:** *Students who were coded absent, invalid, modified, parent refusal, student refusal, or suspension, as well as students who did not attempt the test, are not included in the summarization of results for this report.*

# School Subpopulation Summary Report



## ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA) SCIENCE STANDARDS BASED ASSESSMENT (SBA) SCHOOL SUBPOPULATION SUMMARY REPORT 2015 SPRING

**\*\*NOT FOR PUBLIC DISTRIBUTION\*\***

INFORMATION TO PROTECT SMALL NUMBERS OF STUDENTS HAS NOT BEEN SUPPRESSED.  
REPORTING MAY VIOLATE INDIVIDUAL STUDENT CONFIDENTIALITY (FERPA).  
THIS REPORT IS FOR INTERNAL DISTRICT USE ONLY AND FOR REQUIRED NCLB REPORTING PURPOSES.

DISTRICT: ALASKA DISTRICT  
SCHOOL: ALASKA ELEMENTARY SCHOOL

PAGE: 1  
GRADE: 04

### PROFICIENCY LEVEL SUMMARY

This report provides details for the percent of students in each proficiency level.

		Science				
		Total	Advanced	Proficient	Below Proficient	Far Below Proficient
<b>A</b> Non-IEP	Number Tested	57	14	21	16	6
	Percent	100.0%	24.6%	36.8%	28.1%	10.5%
IEP	Number Tested	9	0	0	4	5
	Percent	100.0%	0.0%	0.0%	44.4%	55.6%
Low Income	Number Tested	27	4	9	8	6
	Percent	100.0%	14.8%	33.3%	29.6%	22.2%
Migrant	Number Tested	0	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%	0.0%
Limited English Proficient	Number Tested	0	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%	0.0%
Male	Number Tested	9	9	9	9	7
	Percent	100.0%	26.5%	26.5%	26.5%	20.6%
Female	Number Tested	32	5	12	11	4
	Percent	100.0%	15.6%	37.5%	34.4%	12.5%
African American	Number Tested	0	0	0	0	0
	Percent	0.0%	0.0%	0.0%	0.0%	0.0%
Alaska Native/American Indian	Number Tested	8	1	3	4	0
	Percent	100.0%	12.5%	37.5%	50.0%	0.0%
Asian/Pacific Islander/ Native Hawaiian	Number Tested	1	1	0	0	0
	Percent	100.0%	100.0%	0.0%	0.0%	0.0%
White (Caucasian)	Number Tested	50	11	18	14	7
	Percent	100.0%	22.0%	36.0%	28.0%	14.0%
Hispanic	Number Tested	4	1	0	1	2
	Percent	100.0%	25.0%	0.0%	25.0%	50.0%
Two or more races	Number Tested	3	0	0	2	1
	Percent	100.0%	0.0%	0.0%	33.3%	66.7%

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

This report provides details for the percent of students in each proficiency level in grade 4.

**A** Lists the total number and percent of students tested, as well as the number and percent of students who were advanced, proficient, below proficient, and far below proficient in science in a variety of demographic reporting categories at the school level.

ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA)  
 SCIENCE STANDARDS BASED ASSESSMENT (SBA)  
 DISTRICT SCHOOL ROSTER  
 2015 SPRING



DISTRICT : ALASKA DISTRICT

PAGE : 1  
 GRADE : 04

**SCHOOL SCALE SCORE INFORMATION**

This report includes summary information for each school alphabetically within a district.

Proficiency Level Comparison <b>A</b>		Science <b>B</b>					Overall	Number Tested
The proficiency level scale score ranges were developed for individual student comparisons only. These scale score ranges cannot be applied to the average scale score information for the state, district, or school. The average for a group of scores masks the distribution of scores in that group. A better way to evaluate the performance of a group is to compare the proportion of students in each performance level.		S1.1 Inquiry, Technology, and Nature of Science	S2.1 Concepts of Physical Science	S3.1 Concepts of Life Science	S4.1 Concepts of Earth Science			
<b>State Average Scale Score <b>C</b></b>		298	300	299	299	296	911	
<b>District Average Scale Score <b>D</b></b>		318	337	327	318	319	67	
SCHOOL NAME 1	<b>E</b>	280	283	271	270	277	78	
SCHOOL NAME 2		240	246	227	246	240	42	
SCHOOL NAME 3		55	246	252	257	253	21	
SCHOOL NAME 4		261	263	309	275	280	3	
SCHOOL NAME 5		334	342	310	326	325	95	
SCHOOL NAME 6		327	338	314	316	322	48	
SCHOOL NAME 7		303	315	301	302	301	60	
SCHOOL NAME 8		317	330	323	313	318	62	
SCHOOL NAME 9		316	319	296	306	308	70	
SCHOOL NAME 10		335	339	336	338	334	46	
SCHOOL NAME 11		316	325	320	316	315	60	
SCHOOL NAME 12		280	273	269	254	269	54	

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

## District School Roster (continued)

This report includes summary information for each school alphabetically within a district.

- A** Explains the comparison of proficiency levels.
- B** Indicates the average scale score for the science SBA, as well as the average scale score by Performance Standard category for the state, district, and all schools in the district.
- C** Indicates the number of students tested in the state, as well as the state average scale scores for the science SBA and Performance Standards.
- D** Indicates the number of students tested in the district, as well as the district average scale scores for the science SBA and Performance Standards.
- E** Indicates the number of students tested in each school, as well as the school average scale scores for the science SBA and Performance Standards.

**Note:** *Students who were coded absent, invalid, modified, parent refusal, student refusal, or suspension, as well as students who did not attempt the test, are not included in the summarization of results for this report.*

# District Subpopulation Summary Report



## ALASKA COMPREHENSIVE SYSTEM OF STUDENT ASSESSMENT (CSSA) SCIENCE STANDARDS BASED ASSESSMENT (SBA) DISTRICT SUBPOPULATION SUMMARY REPORT 2015 SPRING

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DISTRICT: ALASKA DISTRICT

PAGE: 1  
GRADE: 04

### PROFICIENCY LEVEL SUMMARY

This report provides details for the percent of students in each proficiency level.

		Science				
		Total	Advanced	Proficient	Below Proficient	Far Below Proficient
<b>A</b> Non-IEP	Number Tested	509	158	175	142	34
	Percent	100.0%	31.0%	34.4%	27.7%	6.7%
IEP	Number Tested	119	16	27	51	25
	Percent	100.0%	13.4%	22.7%	42.9%	21.0%
Low Income	Number Tested	289	55	113	104	37
	Percent	100.0%	19.0%	32.2%	36.0%	12.8%
Migrant	Number Tested	28	6	7	8	7
	Percent	100.0%	21.4%	25.0%	28.6%	25.0%
Limited English Proficient	Number Tested	11	0	1	5	5
	Percent	100.0%	0.0%	9.1%	45.5%	45.5%
Male	Number Tested	299	99	96	94	27
	Percent	100.0%	31.3%	30.4%	29.7%	8.8%
Female	Number Tested	312	75	106	99	32
	Percent	100.0%	24.0%	34.0%	31.7%	10.3%
African American	Number Tested	3	1	2	0	0
	Percent	100.0%	33.3%	66.7%	0.0%	0.0%
Alaska Native/American Indian	Number Tested	73	13	22	31	7
	Percent	100.0%	17.8%	30.1%	42.5%	9.6%
Asian/Pacific Islander/ Native Hawaiian	Number Tested	11	4	4	3	0
	Percent	100.0%	36.4%	36.4%	27.3%	0.0%
White (Caucasian)	Number Tested	494	146	159	149	40
	Percent	100.0%	29.6%	32.2%	30.2%	8.1%
Hispanic	Number Tested	21	5	5	5	6
	Percent	100.0%	23.8%	23.8%	23.8%	28.6%
Two or more races	Number Tested	24	4	10	5	5
	Percent	100.0%	16.7%	41.7%	20.8%	20.8%

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\* **SAMPLE REPORT:** This sample report is not based on the current administration.

This report provides details for the percent of students in each proficiency level in grade 4.

- A** Lists the total number and percent of students tested, as well as the number and percent of students who were advanced, proficient, below proficient, and far below proficient in science in a variety of demographic reporting categories at the district level.

# **Science SBA Grade 4 Proficiency Level Descriptors**

## **Advanced Level**

The student

- displays a highly developed conceptual understanding by designing simple investigations and incorporating the processes of science
- explains technological, local, and historical connections to science
- models and explains the characteristics of matter including the phase changes caused by heating and cooling
- provides detailed explanations of past and present organisms and compares their links to the Alaska environment
- explains and models the rock cycle and cycles caused by the changing positions of the Sun and Earth
- explains causes of surface changes on Earth
- explains and models that objects in the universe can be observed and described by their properties, locations, and movements

## **Proficient Level**

The student

- demonstrates a basic conceptual understanding by applying the processes of science during simple investigations
- demonstrates connections between science and technological, local, and historical perspectives
- identifies and compares the characteristics of matter including phase changes caused by heating and cooling
- explains past and present organisms and their Alaska environment
- describes simple processes of the rock cycle and cycles caused by the changing positions of the Sun and Earth
- identifies the causes of surface changes on Earth
- recognizes that objects in the universe can be observed and described by their properties, locations, and movements

## **Science (continued)**

### **Below Proficient Level**

The student

- shows a fundamental understanding by recognizing the processes of science during simple investigations
- explores technological, local, and historical connections to science
- describes the characteristics of matter including phase changes caused by heating and cooling
- identifies past and present organisms and recognizes how they are linked to their Alaska environment
- recognizes weathering as part of the rock cycle
- connects daily cycles to seasonal activities
- names causes of surface changes on Earth
- recognizes that objects in the universe can be observed and described by their properties, locations, and movements

### **Far Below Proficient Level**

There is a significant need for additional instructional opportunities to achieve the proficient level.

# Glossary

## **Constructed-Response Question**

An assessment unit with directions, a question, or a problem that elicits a written, pictorial, or graphic response from a student. Sometimes called an “open-ended” item.

## **Content Standard**

Broad statements of what students should know and be able to do as a result of their public school experience.

## **Forms**

Different versions of a test that measure the same subject area.

## **Item**

One of the assessment units, usually a problem or a question, in a test.

## **Mean**

An average, calculated by adding the values of a set of scores and dividing by the number of scores in the set.

## **Multiple-Choice Question**

A question or incomplete statement that is followed by answer choices, one of which is the correct or best answer.

## **Performance Standard**

A statement that defines what all students should know and be able to do at the end of a given grade level.

## **Proficiency Level**

Category that reflects a range of test scores that represents a student’s current acquired knowledge and skills in the subject area.

## **Scale Score**

Three-digit number that provides a common metric for expressing student performance from different forms.

## **Standard Error of Measurement**

A mathematical calculation that estimates a range within which a student’s “true score” would fall, had that student taken the test numerous times. It is important to understand that all tests have an inherent measurement error because they are a sample of student performance at one particular time.

## **Standardized Test**

A test administered in accordance with explicit directions for uniform administration.