Understanding Scores on the Spring 2022 Maine Science Assessment

Introduction

The purpose of this document is to help you understand the scores for the Spring 2022 Maine Science Assessment that you currently can view in MAARS (Maine's Assessment and Accountability Reporting System). This document also provides some insight into the scoring that happens "behind the scenes." As we move forward for Spring 2023, the Maine Department of Education is working to refine these score reports and increase clarity.

Reporting Categories: Achievement Levels

On the Maine Science Assessment, each student's scaled score is aligned with one of the following four achievement levels:

Above State Expectations The student's work demonstrates a thorough understanding of essential concepts in science, including the ability to make multiple connections among central ideas. The student's responses demonstrate the ability to synthesize information, analyze and solve difficult problems, and explain complex concepts using evidence and proper terminology to support and communicate logical conclusions.
At State Expectations The student's work demonstrates an adequate understanding of essential concepts in science, including the ability to make connections among central ideas. The student's responses demonstrate the ability to analyze and solve routine problems and explain central concepts with sufficient clarity and accuracy to demonstrate general understanding.
Below State Expectations The student's work demonstrates an incomplete understanding of essential concepts in science and inconsistent connections among central ideas. The student's responses demonstrate some ability to analyze and solve problems, but the quality of responses is inconsistent. Explanation of concepts may be incomplete or unclear.
Well Below State Expectations The student's work demonstrates a minimal understanding of essential concepts in science. The student's responses demonstrate minimal ability to solve problems. Explanations are illogical, incomplete, or missing connections among central ideas. There are multiple inaccuracies.

Three-Dimensional Nature of the Next Generation Science Standards

The Next Generation Science Standards consist of disciplinary core ideas, science and engineering practices (SEPs), and cross-cutting concepts (CCCs).

Questions on the Maine Science Assessment must align to at least one discipline (e.g., Life Sciences, Physical Sciences, Earth and Space Sciences).

In addition, questions may align to an SEP and/or CCC.

Raw scores are reported in MAARS for SEPs but not for CCCs.

Below is a fictional example of a four-question assessment, showing the alignment of each question to a discipline, SEP, and CCC.

Question Number	**Possible Points by Discipline**	**Possible Points by SEP**	**Possible Points by CCC** (not reported)
1	1	N/A (no SEP aligned to this question)	1
2	2	2	2
3	1	1	N/A (no CCC aligned to this question)
4	1	N/A (no SEP aligned to this question)	N/A (no CCC aligned to this question)
Maximum Raw Score Points	**5**		

- Question 1 is a one-point question aligned to a discipline (required) and CCC but not with an SEP.
- Question 2 is a two-point question aligned to a discipline (required), SEP, and CCC.
- Question 3 is a one-point question aligned to a discipline (required) and SEP but not with a CCC.
- Question 4 is a one-point question aligned to a discipline (required) but not an SEP or CCC.

A student's raw score represents the total number of points earned for correct answers to questions, considering both one- and two-point questions.

The scaled score is computed from the raw score, adjusting for the difficulty of questions. Please note that although you can view the discipline and SEP raw subscores in MAARS, **only the overall scaled score is reported, not the overall raw score**.

Grade 5

Achievement Level Cut Scores

A student's raw score represents the total number of points earned for correct answers to questions, considering both one- and two-point questions.

The scaled score is computed from the raw score, adjusting for the difficulty of questions. Only the overall scaled score is reported in MAARS, not the overall raw score.

Achievement Level	Raw Score	Scaled Score
Well Below State Expectations	0-17	6-33
Below State Expectations	18-25	34-39
At State Expectations	26-33	40-46
Above State Expectations	34-45	47-80

Subscores: Disciplines

The scores shown in the table are raw scores. The sum of the points possible for each discipline equals the maximum raw score for that grade level.

Discipline	Points Possible
Structure and Properties of Matter	13
Matter and Energy in Organisms and Ecosystems	13
Earth Systems and Space Systems: Stars and the Solar System	19
Maximum Possible Raw Score	**45**

Subscores: Science & Engineering Practices

Due to the multidimensional nature of the Next Generation Science Standards, most questions also align to science and engineering practices. The scores shown in the table are raw scores.

Science & Engineering Practice	Points Possible
Investigate	13
Evaluate	15
Reason Scientifically	14

Only discipline subscores are used to determine the overall raw score, overall scaled score, and achievement level.

Grade 8

Achievement Level Cut Scores

A student's raw score represents the total number of points earned for correct answers to questions, considering both one- and two-point questions.

The scaled score is computed from the raw score, adjusting for the difficulty of questions. Only the overall scaled score is reported in MAARS, not the overall raw score.

Achievement Level	Raw Score	Scaled Score
Well Below State Expectations	0-16	3-33
Below State Expectations	17-20	34-39
At State Expectations	21-33	41-59
Above State Expectations	34-50	61-90

Subscores: Disciplines

The scores shown in the table are raw scores. The sum of the points possible for each discipline equals the maximum raw score for that grade level.

Discipline	Points Possible
Physical Sciences	16
Life Sciences	18
Earth & Space Sciences	16
Maximum Possible Raw Score	**50**

Subscores: Science & Engineering Practices

Due to the multidimensional nature of the Next Generation Science Standards, most questions also align to science and engineering practices. The scores shown in the table are raw scores.

Science & Engineering Practice	Points Possible
Investigate	15
Evaluate	15
Reason Scientifically	15

Only discipline subscores are used to determine the overall raw score, overall scaled score, and achievement level.

High School

Achievement Level Cut Scores

A student's raw score represents the total number of points earned for correct answers to questions, considering both one- and two-point questions.

The scaled score is computed from the raw score, adjusting for the difficulty of questions. Only the overall scaled score is reported in MAARS, not the overall raw score.

Achievement Level	Raw Score	Scaled Score
Well Below State Expectations	0-21	4-34
Below State Expectations	22-28	35-39
At State Expectations	29-41	40-49
Above State Expectations	42-55	50-90

Subscores: Disciplines

The scores shown in the table are raw scores. The sum of the points possible for each discipline equals the maximum raw score for that grade level.

Discipline	Points Possible
Physical Sciences	20
Life Sciences	17
Earth & Space Sciences	18
Maximum Possible Raw Score	**55**

Subscores: Science & Engineering Practices

Due to the multidimensional nature of the Next Generation Science Standards, most questions also align to science and engineering practices. The scores shown in the table are raw scores.

Science & Engineering Practice	Points Possible
Investigate	16
Evaluate	18
Reason Scientifically	16

Only discipline subscores are used to determine the overall raw score, overall scaled score, and achievement level.