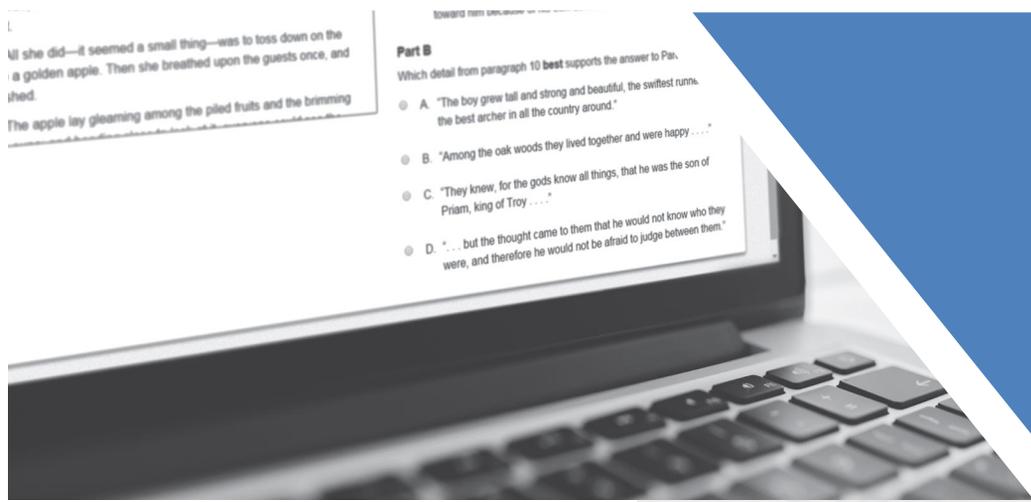


# Spring 2023



# MCAP Science (MISA) Score Interpretation Guide for Parents

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## **1.0 General Information for Parents and Educators**

### **1.1 Background**

The Maryland Comprehensive Assessment Program (MCAP) will provide students, parents, educators and the community with better student information at a faster pace. The goal remains the same: to gather information that helps Maryland schools strengthen our instruction and improve student performance so that our graduates are ready to move into the workforce or a postsecondary institution.

### **1.2 MCAP Science (MISA) Assessments**

The primary purpose of MCAP is to provide high-quality assessments to measure students' progress toward college and career readiness.

The MCAP Science (MISA) assessments were administered in either computer-based or paper-based format. The tests assessed student mastery of the three dimensions necessary to understand science: Disciplinary Core Ideas (DCI), Science and Engineering Practices (SEP), and Crosscutting Concepts (CCC). Students demonstrated their mastery by interacting with a stimulus such as a video, chart, or diagram, and then responding to several items supported by the stimulus.

### **1.3 Confidentiality of Reporting Results**

Individual student performance results on the MCAP are confidential and may be released only in accordance with the Family Educational Rights and Privacy Act of 1974 (20 U.S.C. Section 1232g). Aggregated student performance data are made available to the public and do not contain the names of individual students or teachers.

### **1.4 Purpose of this Guide**

This guide provides information on the individual student reports, school reports, and Local Education Agency (LEA) reports provided for MCAP results. Section 2.0, which outlines and explains elements of the individual student report, may be shared with parents. This section will help parents understand their child's test results. Section 3.0 outlines and explains elements of the school and LEA reports. Individual state policies and calculations for accountability reporting may differ from the policies and calculations used for assessment reports.

Sample reports included in this guide are for illustration purposes only. They are provided to show the basic layout of the reports and the information they provide. Sample reports do not include actual data from any test administration.

## **2.0 Understanding the MCAP Individual Student Report (ISR)**

### **2.1 Types of Scores on the MCAP ISR**

Student performance on the MCAP Science assessment is described on the individual student report using scale scores, performance levels, and subclaim performance indicators. State, LEA, and school average results are included in relevant sections of the report to help parents understand how their child's performance compares to that of other students. In some instances, a note will appear in place of average results for a school and/or LEA. This indicates that there are too few students to maintain student privacy and therefore results are not reported.

#### **2.1.1 Scale Score**

A scale score is a numerical value that summarizes student performance. Not all students respond to the same set of test items, so each student's raw score (actual points earned on test items) is adjusted for the slight differences in difficulty among the various forms and administrations of the test. The resulting scale score allows for an accurate comparison across test forms and administration years within a grade. For example, a student who earns an overall scale score of 750 on one form of the grade 5 science assessment would be expected to earn an overall score of 750 on any other form of the grade 5 science assessment. Furthermore, the student's overall scale score and level of mastery of concepts and skills would be comparable to a student who took the same assessment the previous year or the following year.

#### **2.1.2 Performance Level**

Each performance level is a broad, categorical level defined by a student's overall scale score and is used to report overall student performance by describing how well students met the expectations for their grade level/course. Each performance level is defined by a range of overall scale scores for the assessment. There are four performance levels for the MCAP:

- Level 4: Distinguished Learner
- Level 3: Proficient Learner
- Level 2: Developing Learner
- Level 1: Beginning Learner

Students performing at levels 3 and 4 have demonstrated readiness for the next grade level/course, and ultimately, are likely on track for college and careers. Additional information pertaining to the test performance levels can be found in Appendix A.

#### **2.1.3 Dimensions of Science Performance Indicators**

Mastery of the dimensions of science is reported using graphical representations which indicate how the student performed relative to the overall performance of students who were proficient or developing learners for the content area.

Performance is reported using categories rather than scale scores or performance levels. The three categories are: Distinguished or Proficient Learners, Developing Learners, and Beginning Learners.

#### **2.1.4 Sample of Science (MISA) ISR**

# Science Assessment Report, 2022-2023

This report shows whether FIRSTNAME met grade band expectations in science and is on track for the next grade band. The items on the assessment measure your child's understanding of concepts and practices in science and require critical thinking to find solutions to problems. The Maryland Integrated Science Assessment (MISA) is one of several ways to help families and teachers understand how well your child is acquiring science concepts and practices.

## How Can You Use This Report? **C**

Ask your child's teachers:

- What do you see as my child's strengths and areas for improvement in science?
- How can these assessment results be used to help my child make progress in science?

To learn more about the Maryland Science Program visit <http://marylandpublicschools.org/about/Pages/DCAA/Science/index.aspx>.

For Practice Tests visit Test Preparation on <http://support.mdassessments.com>.

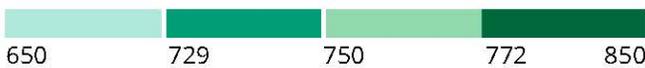
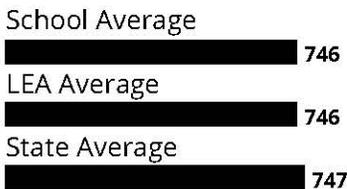
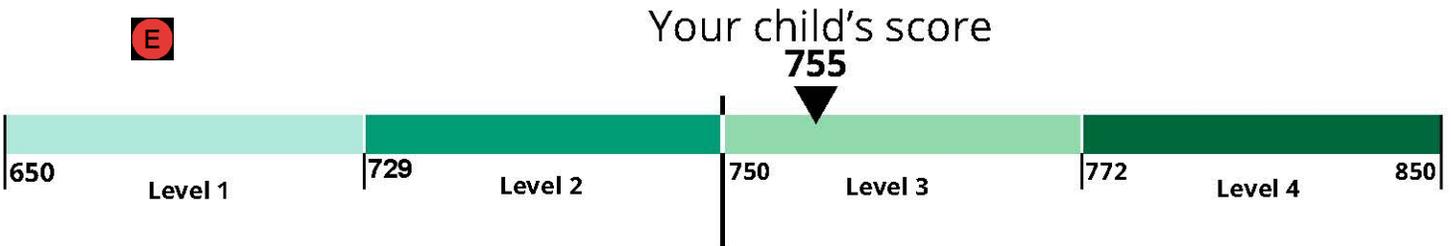
## How Did FIRSTNAME Perform Overall?

**Performance Level 3**

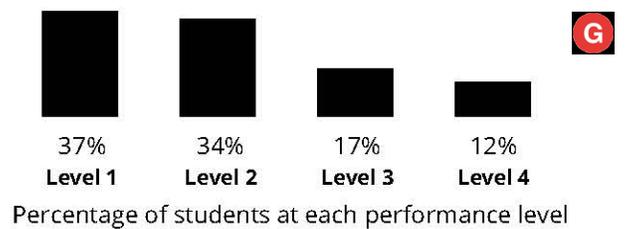
**D**

A description of the Performance Levels can be found on the back of this page.

- Level 4** Distinguished Learner
- Level 3** Proficient Learner
- Level 2** Developing Learner
- Level 1** Beginning Learner



## How Students in Maryland Performed



## How are assessment results used?

Results from the assessment give your child's teacher, school, and school district information about their science performance, and provide you with some insight as to your child's level of learning. These results never stand alone, but can be used with other assessments and class work when gauging student performance.

**C**

# How Did Your Child Perform in the Three Dimensions of Science?

## Disciplinary Core Ideas (DCI)

### Physical Sciences

Your child performed about the same as other **Proficient or Distinguished Learners**. Students demonstrate proficiency by exhibiting an understanding of matter and its interactions, motion and stability, forces and interaction, energy, waves and their applications in technologies for information transfer.

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### Life Science

Your child performed about the same as other **Developing Learners**. Students demonstrate proficiency by exhibiting an understanding of how the structures and processes function from molecules to organisms, the interactions, energy, and dynamics of ecosystems, the inheritance and variation of traits in heredity, and the unity and diversity of biological evolution.

### Earth and Space Sciences

Your child performed about the same as other **Proficient or Distinguished Learners**. Students demonstrate proficiency by exhibiting an understanding of Earth's place in the universe, Earth's systems, and Earth and human activity.

#### LEGEND

Your child performed about the same as:



**Distinguished  
or Proficient  
Learners**



**Developing  
Learners**



**Beginning  
Learners**

I

### Science and Engineering Practices (SEP)

Your child performed about the same as other **Developing Learners**. Students demonstrate proficiency by exhibiting an understanding of the practices scientists and engineers use to investigate theories about the natural world giving them opportunities to immerse themselves in these practices and explore why they are central to science and engineering.

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### Crosscutting Concepts (CCC)

Your child performed about the same as other **Beginning Learners**. Students demonstrate proficiency by exhibiting an understanding of how scientists connect and explain knowledge from various science disciplines and engineering practices into a coherent and scientifically based view of the world.

## Science Performance Level Descriptions

J

**Level 4 Distinguished Learners:** Students who perform at this level demonstrate an effective ability to apply scientific thinking to understand the natural world and apply engineering design to find solutions to problems. Students demonstrate the ability to think critically about the effects of chemical reactions, forces, and energy on the world around them; the ways different organisms and the environment interact; the ways the geosphere, biosphere, and hydrosphere interact; and how engineering design can be a regular part of problem solving. Students apply skills such as asking questions that lead to explanations supported by evidence, using mathematics to analyze data, and applying scientific ideas to develop, test, compare, and improve design solutions.

**Level 3 Proficient Learners:** Students who perform at this level demonstrate the ability to apply scientific thinking to understand the natural world and apply engineering design to find solutions to problems. Students demonstrate the ability to explain the effects of chemical reactions, forces, and energy on the world around them; the ways different organisms and the environment interact; the ways the geosphere, biosphere, and hydrosphere interact; and how engineering design can be a regular part of problem solving. Students use skills such as asking questions that can lead to reasonable predictions, using mathematics to describe data, and applying scientific ideas to evaluate a design solution.

**Level 2 Developing Learners:** Students who perform at this level are approaching the ability to apply scientific thinking to understand the natural world and apply engineering design to find solutions to problems. Students are beginning to demonstrate the ability to describe the effects of chemical reactions, forces, and energy on the world around them; the ways different organisms and the environment interact; the ways the geosphere, biosphere, and hydrosphere interact; and how engineering design can be a regular part of problem solving. Students are beginning to demonstrate skills such as asking questions about changes in an investigation, organizing simple data sets that reveal patterns, and identifying scientific evidence used to support a claim.

**Level 1 Beginning Learners:** Students who perform at this level demonstrate an emerging ability to apply scientific thinking to understand the natural world and engineering design to find solutions to problems. Students are beginning to identify the effects of chemical reactions, forces, and energy on the world around them; the ways different organisms and the environment interact; the ways the geosphere, biosphere, and hydrosphere interact; and how engineering design can be a regular part of problem solving. Students are beginning to develop skills such as asking questions about changes in an investigation, organizing simple data sets that reveal patterns, and identifying scientific evidence used to support a claim.

## 2.1.5 General Description of Individual Student Reports

### A. Identification Information

An Individual Student Report lists the student's name, date of birth, state student ID, grade level when assessed, LEA name, school name, and state. The grade level when assessed is also shown in a box on the left side of the report.

### B. Description of Report

The description of the report provides the grade level/course assessed, content area assessed, and assessment year. It also provides a general overview of the assessment and score report.

### C. How to use the Report

This section provides guidance on how parents can use the report to start a discussion with their child's teacher(s). It is important for parents and educators to have regular check-ins to ensure students are learning the necessary skills to stay on track. Parents can use the information in the report to understand their child's strengths and needs and to work with educators to identify resources to support his or her education.

## 2.1.6 Overall Assessment Scores

### D. Overall Scale Score and Performance Level

This section of the report provides the student's overall scale score and performance level (refer to Section 2.1). Students receive an overall scale score and based on that score, are placed in one of four performance levels, with Level 4 indicating a Distinguished Learner and Level 1 indicating a Beginning Learner.

### E. Graphical Representation of Overall Performance: Overall Scale Score and Performance Level

This graphic provides an illustration of the four performance levels and where the student's overall scale score is positioned along the performance scale. The student's score is indicated by the black triangle positioned along the range of overall scale scores that define each performance level. The ranges of overall scale scores are indicated underneath the graphic. The scale scores needed to reach each performance level vary slightly between grades 5 and 8. Refer to **Appendix A** for the full list of scale score ranges for each performance level.

### F. Average of School, LEA, State

The average overall scale scores of the school, LEA, and state are shown below the overall scale score and performance level graphic. This allows for comparing a student's overall scale score to the average overall scale score of students at the school, LEA, and state level for the same grade level.

### G. Percentage of Students at Each Performance

This section provides a bar graph showing the percentage of students within the state who performed at each of the four performance levels.

## 2.1.7 Performance by Reporting Category

### H. Dimensions of Science Reporting Categories

The report shows the student's performance in for the three dimensions of science: Disciplinary Core Ideas (DCI), Science and Engineering Practices (SEP), and Crosscutting Concepts (CCC). In addition, there are three subcategories in the DCI dimension: Physical Science, Life Science, and Earth and Space Sciences. Each dimension of science is indicated by a large, black header. The DCI subcategories are indicated by a small, black header.

### I. Dimensions of Science Reporting Categories

Student performance for each dimension is marked with a dimension performance indicator.

- **A** completely filled in circle for the specified dimension indicates the student as a “Distinguished Learner” or “Proficient Learner”. Students in this category are likely academically well prepared to engage successfully in further studies in the dimension of science content area and may need instructional enrichment.
- **A** half filled in circle for the specified dimension indicates the student as a “Developing Learner”. Students in this category likely need academic support to engage successfully in further studies in the dimension of science content area.
- **An empty circle** for the specified dimension indicates the student as a “Beginning Learner”. Students in this category are likely not academically well prepared to engage successfully in further students in the dimension of science content area. Such students likely need instructional interventions to increase achievement in the dimension of science content area.

### J. Science Performance Level Descriptions

The report provides the performance level descriptions for the MCAP Science assessment.