



Missouri

DEPARTMENT OF ELEMENTARY & SECONDARY

EDUCATION™

End-of-Course Assessments

Guide to Interpreting Results 2022–2023

Algebra I
Algebra II
Geometry
English I
English II
Biology
Physical Science
Personal Finance
Government
American History

Version 1



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2.0 Change Log

Date Updated	Description	Version
2/2023	Initial Posting	1

3.0 Educational Assessment: A Primary Tool

Assessment, or testing, fulfills a vital role in today's educational environment. As a primary tool for educators and policymakers, assessment is used for many important purposes. Educators use assessment results to help improve teaching and learning and to evaluate programs and schools. Assessment is also used to generate the data upon which policy decisions are made. Because of the important place it occupies in education, assessment is a foundation activity in every school, district, and state. It is vital to foster innovation, achieve higher standards, and attain educational excellence.

The End-of-Course (EOC) Assessments are based on the Missouri Learning Standards (MLS). When the content associated with a particular course is covered, the associated EOC Assessment can be administered regardless of student grade level. EOC Assessment items are aligned with the Missouri Learning Standards, which are available on the DESE website (<http://dese.mo.gov/college-career-readiness/curriculum/missouri-learning-standards>). The responsibility and authority for testing students belongs to the school district. The Missouri Department of Elementary and Secondary Education (DESE) uses the information obtained through the EOC Assessments to monitor the progress of Missouri's students in meeting the state standards, to inform the public and the state legislature about students' performance, and to help make informed decisions about educational issues. In May 2016, the Missouri State Board of Education approved a schedule for implementing assessments aligned to the newly adopted expectations. Initial operational administration of new English language arts and mathematics assessments took place in the 2017–2018 school year, followed by science in 2018–2019. Due to the 2020 cancellation of state assessments due to COVID-19, the first operational year for social studies was moved to 2020–2021.

The Missouri Assessment Program (MAP) End-of-Course reports provide useful information for determining the performance of students in a particular school and classroom. For example, these reports can help identify students who are below proficiency in a particular test area so that a course of action may be determined that will meet the students' specific needs. Additionally, districts may use locally designed assessments aligned to the Missouri Learning Standards to provide more detailed information for each student in specific test areas.

Students who are taking a course in which the Personal Finance competencies are embedded are required to take the Personal Finance assessment. For students who are enrolled in a stand-alone Personal Finance course, the assessment is optional. Districts have the flexibility to set their own passing rate for all other students who take the Personal Finance assessment. Districts have the option to allow students to "test out" in order to receive the ½ unit of credit in Personal Finance. To "test out," a student must attain a score of 90% or higher on the Personal Finance assessment.

Raw Score Rosters are available for Personal Finance within five business days of the district testing. Scale Scores and Performance Levels are not provided for Personal Finance.

3.1 Scale Scores

Questar Assessment uses the students' correct responses and points earned to derive the EOC scale score. Students receive an EOC scale score when they have a valid attempt for any assessment other than Personal Finance. For Algebra I, Algebra II, Geometry, English I, English II, Biology, Physical Science, Government, and American History, EOC scale scores have values starting at 325 with 400 as the threshold of the proficient performance level. Currently, no maximum scale score has been established in order to monitor the possibility of growth. The EOC scale score determines the student's performance level.

3.2 Performance Levels

Student performance is reported in terms of four performance levels that describe a pathway to proficiency, and these performance levels are outlined on the following pages. Each performance level represents standards of performance for each assessed content area; performance levels describe what students can do in terms of the content and skills on the assessment. Panels comprised of Missouri educators, school administrators, postsecondary faculty, and community business members determined the performance level cut scores. These scores are a means of comparing test results with standards of academic performance.

3.3 Standard Error of Measurement

No test provides a perfect measure of a student's ability. This situation is expected because all tests have a known Standard Error of Measurement (SEM). The SEM reports the amount of variability that can be expected in a student's test score due to the inherent imprecision of the test. In other words, the SEM represents a range of scale scores in which the student's score would likely fall if the student took the same test again.

4.0 Missouri Learning Standards

MO EOC items are aligned with the Missouri Learning Standards. The Missouri Learning Standards are grouped by content and course.

4.1 English I MLS Strands

In English I, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Reading Literary Texts
2. Reading Informational Texts
3. Writing

4.2 English II MLS Strands

In English II, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Reading Literary Texts
2. Reading Informational Texts
3. Writing

4.3 Algebra I MLS Strands

In Algebra I, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Algebra
2. Functions
3. Number/Quantity and Statistics

4.4 Algebra II MLS Strands

In Algebra II, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Algebra
2. Functions
3. Number/Quantity and Statistics

4.5 Geometry MLS Strands

In Geometry, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Congruence/Similarity, Coordinate Geometry, and Circles
2. Geometric Measurement and Modeling
3. Statistics and Probability

4.6 Biology MLS Strands

In Biology, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. From Molecules to Organisms: Structure and Process
2. Ecosystems: Interactions, Energy, and Dynamics
3. Heredity: Inheritance and Variation of Traits
4. Biological Evolution: Unity and Diversity
5. Earth and Human Activity

4.7 Physical Science MLS Strands

In Physical Science, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Matter and Its Interactions
2. Motion and Stability: Forces and Interactions
3. Energy
4. Earth and the Universe

4.8 Government MLS Stands

In Government, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Tools of Social Science Inquiry
2. Historical Foundations
3. Structure of Government
4. Government in Action

4.9 American History MLS Strands

In American History, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Tools of Social Science Inquiry
2. Re-Emerging America
3. Emerging Globally
4. The Great Depression and WWII
5. The American Stage
6. Contemporary America

4.10 Personal Finance MLS Strands

In Personal Finance, students in Missouri public schools will acquire a solid foundation which includes knowledge and proficiency in

1. Financial Decision Making/Earning Income
2. Buying Goods and Services
3. Savings/Using Credit
4. Protecting and Insuring/Financial Investing

5.0 Performance-Level Descriptors

In addition to the Reporting Performance Level Descriptors (PLDs) below, DESE offers expanded Range PLDs on their website. You can find them for each content area at the bottom of the End-of-Course assessment page: <https://dese.mo.gov/quality-schools/assessment/end-course>

5.1 Algebra I Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri Algebra I End-of-Course Assessment demonstrate advanced proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: justify understanding of the properties of rational exponents as an extension of the properties of integer exponents; critique the reasoning of others' representation when solving problems involving expressions with rational exponents or radicals; critique the validity of conjectures about a data set in various forms; discuss possible associations and trends in data. They analyze and manipulate the structure of polynomials and exponentials; evaluate the structure of expressions and equations to determine the optimal method of solving or creating equivalent expressions; analyze and interpret constraints in the context of the solutions to model a mathematical or real-world problem that may limit possible solutions. They connect mathematical ideas and real-world situations through modeling of arithmetic on polynomials.

Scale Score: 409 and higher

Proficient: Students performing at the Proficient level on the Missouri Algebra I End-of-Course Assessment demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: add, subtract, and multiply multivariable polynomials; divide polynomials by monomials; rewrite expressions with rational exponents or radicals using the properties of exponents; reason abstractly and contextually when solving multi-step problems involving quantities. They explain the steps in solving an inequality; solve quadratic equations using various methods; select and use appropriate strategies to solve a system of equations; interpret parameters of exponential functions; translate between different but equivalent forms of quadratic functions; compare properties of two functions given different representations. They construct quadratic and exponential functions given multiple representations; compare, interpret, and analyze sets of data using statistical measures or graphs; recognize the presence and effects of outliers.

Scale Score: 400–408

Basic: Students performing at the Basic level on the Missouri Algebra I End-of-Course Assessment demonstrate partial proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: identify key terms in expressions and equations; use mathematical models; factor a simple ($a=1$) quadratic expression; rewrite expressions with rational exponents or radicals using the properties of exponents. They explain the steps in solving an equation; solve a system of linear equations algebraically; solve a system of linear and quadratic equations graphically; graph the solution of a linear inequality in two variables. They create and graph linear equations and inequalities; graph exponential and quadratic equations in two variables. They understand the domain

and range values of a function corresponding to (x, y) values on the Cartesian coordinate plane. They recognize and distinguish between situations that can be modeled with linear or exponential functions; write explicit functions that generate arithmetic and geometric sequences. **Scale Score: 389–399**

Below Basic: Students performing at the Below Basic level on the Missouri Algebra I End-of-Course Assessment do not yet demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: identify parts of an expression to write it in standard form; identify equivalent radicals and rational exponent expressions and add and subtract polynomials; multiply a single-variable monomial and a single-variable polynomial. They use given expressions and equations to solve problems; use conversion rates within a system to solve problems involving multiple quantities. They graph linear equations in two variables; graph exponential equations in two variables where the lead coefficient is 1. They construct linear functions; calculate terms of a given sequence; evaluate a given function for a specified value in the domain; calculate the average rate (slope) of change in a linear situation given two data points. They calculate statistical measures of center and spread for a given data set. **Scale Score: 325–388**

5.2 Algebra II Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri Algebra II End-of-Course Assessment demonstrate advanced proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: analyze extraneous solutions applied to the Fundamental Theorem of Algebra, determine logarithmic scale in the context of a situation, and identify decisions and strategies using data, probability concepts, and mathematical relationships of functions to make a connection to real-world situations. They use quantitative reasoning, recognize and use counterexamples to justify conclusions, construct viable arguments to justify the advantages of a particular method over another, and evaluate reports by analyzing the statistics, including bias and validity of resources. **Scale Score: 411 and higher**

Proficient: Students performing at the Proficient level on the Missouri Algebra II End-of-Course Assessment demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: simplify expressions and solve equations involving rational exponents and/or radicals; evaluate logarithmic expressions; solve logarithmic and exponential equations; solve problems requiring computing with complex numbers; understand the Fundamental Theorem of Algebra. They create new functions using the four arithmetic operations, including composition and inverses of functions considering the effects on the domain and range, and use them to solve applications of quadratic and exponential function modeling problems; solve non-linear equations and inequalities, including absolute value. They make inferences and justify conclusions from sample surveys and experiments; justify the importance of randomization in survey studies; analyze whether a given data set fits a normal distribution using its mean and standard deviation. **Scale Score: 400–410**

Basic: Students performing at the Basic level on the Missouri Algebra II End-of-Course Assessment demonstrate partial proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: create new functions using the operations of addition, subtraction, and multiplication; identify the effects of single transformations in various functions; identify which model would best represent a given situation; identify key characteristics of polynomial functions. They solve problems involving the addition and subtraction of complex numbers; use powers and roots to include rational exponents; translate between radical and exponential forms of expressions. They solve equations & inequalities, including absolute value; solve rational equations; solve systems that include nonlinear equations and inequalities (linear to quadratic); solve quadratic equations in one variable that result in purely imaginary solutions. They determine whether a model fits a data set; recognize how the relative size of a sample affects the margin of error. **Scale Score: 388–399**

Below Basic: Students performing at the Below Basic level on the Missouri Algebra II End-of-Course Assessment do not yet demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: understand the definition of a complex number and logarithms based on properties of exponents. They identify the zeros of a polynomial in a completely factored polynomial; identify single transformations performed on various functions; identify which model (linear, quadratic, or exponential) would best represent a given situation graphically. They solve a linear system of equations; solve linear inequalities; solve exponential equations that do not require logarithms and graph functions. They distinguish between normal distributions and other types of distributions; define a margin of error. **Scale Score: 325–387**

5.3 Geometry Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri Geometry End-of-Course Assessment demonstrate advanced proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: apply geometric method to create and solve design mathematical modeling problems given constraints; determine flaws in reasoning used to solve probability problems in context; analyze others' geometric theorems and properties of rigid motions, lines, angles, triangles, and parallelograms when solving problems; determine the validity of geometric arguments and revise invalid geometric arguments. They articulate reasoning to prove that all circles are similar through similarity transformations and their properties; provide an informal argument for a formula related to the volume of a cylinder, pyramid, or cone; critique volume formulas to solve mathematical and contextual problems that involve cylinders.

Scale Score: 414 and higher

Proficient: Students performing at the Proficient level on the Missouri Geometry End-of-Course Assessment demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: describe and apply the properties of segments and angles formed by chords of circles; explain relationships between the tangent and the radius; construct an inscribed and circumscribed circle of a triangle. They derive the equation of a circle with a given center and radius using the Pythagorean Theorem. They solve mathematical and contextual problems that involve the volume of composite figures. They find areas of regular polygons; use modeling with geometric methods and real-world situations such as density to solve problems involving area, volume, and design problems; calculate probabilities for events, including independent, conditional, and joint probabilities. **Scale Score: 400–413**

Basic: Students performing at the Basic level on the Missouri Geometry End-of-Course Assessment demonstrate partial proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: identify key components from the equation of a circle; identify equations of lines as parallel, perpendicular, or neither; determine coordinates of the midpoint of a line segment. They apply properties and theorems of angles, segments, and arcs in circles to solve problems. They solve mathematical and contextual problems that involve the volume of cylinders, pyramids, cones, and spheres; use permutations and combinations to solve problems; construct a two-way frequency table with given data using appropriate categories; calculate relative frequencies from a two-way table. **Scale Score: 387–399**

Below Basic: Students performing at the Below Basic level on the Missouri Geometry End-of-Course Assessment do not yet demonstrate proficiency in the knowledge and skills identified in the Missouri Learning Standards. The students are able to: identify translations in the coordinate plane; perform reflections and rotations; define lines of symmetry; identify basic geometric constructions; determine line distance along a line and distance around a circular arc; analyze transformation relationships in simple geometric figures; define the parts of a right triangle; identify an inscribed angle, radius, and chords of a circle; identify arcs, sectors, tangents, and secants of a circle. They define an angle, a circle, a perpendicular line, a line segment, and a ray based on undefined notions of a point; solve problems involving the area and circumference of a circle; find slope and distance between two points. **Scale Score: 325–386**

5.4 English I Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri English I End-of-Course Assessment consistently and independently demonstrate a thorough command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills completely and thoroughly in reading processes, in responding to both literary and informational texts in a variety of media, in writing effectively, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Proficient level, students performing at the Advanced level use a range of strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate a thorough understanding of craft and structure and consistently apply different strategies for accessing and summarizing information. They demonstrate an effective and thorough ability to organize and develop writing and exhibit an adequate command of the conventions of English. They employ effective listening/speaking skills. **Scale Score: 415 and higher**

Proficient: Students performing at the Proficient level on the Missouri English I End-of-Course Assessment independently demonstrate an adequate command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills adequately in reading processes, in responding to both literary and informational texts in a variety of media, in writing, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Basic level, students performing at the Proficient level use a range of strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate an understanding of craft and structure and apply strategies for accessing and summarizing information. They demonstrate an adequate ability to organize and develop writing and exhibit an adequate command of the conventions of English. They employ effective listening/speaking skills. **Scale Score: 400–414**

Basic: Students performing at the Basic level on the Missouri English I End-of-Course Assessment independently demonstrate a partial or uneven command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills inconsistently in reading processes, in responding to both literary and informational texts in a variety of media, in writing, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Below Basic level, students performing at the Basic level use some strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate a partial understanding of craft and structure and inconsistently apply strategies for accessing and summarizing information. They demonstrate an inconsistent ability to organize and/or develop writing and command of the conventions of English. They demonstrate emerging listening/speaking skills. **Scale Score: 384–399**

Below Basic: Students performing at the Below Basic level on the Missouri English I End-of-Course Assessment independently demonstrate a minimal command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills at a foundational level in reading processes, in responding to literary and informational texts in a variety of media, in writing, and in listening/speaking. Students performing at the Below Basic level exhibit few strategies to comprehend, interpret, analyze, and synthesize grade-appropriate texts; they demonstrate little understanding of craft and structure and apply few strategies for accessing and/or summarizing information. They demonstrate rudimentary organization, development, and/or command of the conventions of English. They demonstrate emerging listening/speaking skills. **Scale Score: 325–383**

5.5 English II Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri English II End-of-Course Assessment consistently and independently demonstrate a thorough command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills completely and thoroughly in reading processes, in responding to both literary and informational texts in a variety of media, in writing effectively, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Proficient level, students performing at the Advanced level use a range of strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate a thorough understanding of craft and structure and consistently apply different strategies for accessing and summarizing information. They demonstrate an effective and thorough ability to research, organize, and develop writing and exhibit an adequate command of the conventions of English. They employ effective listening/speaking skills.

Scale Score: 420 and higher

Proficient: Students performing at the Proficient level on the Missouri English II End-of-Course Assessment independently demonstrate an adequate command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills adequately in reading processes, in responding to both literary and informational texts in a variety of media, in writing, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Basic level, students performing at the Proficient level use a range of strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate an understanding of craft and structure and apply strategies for accessing and summarizing information. They demonstrate an adequate ability to research, organize, and develop writing and exhibit an adequate command of the conventions of English. They employ effective listening/speaking skills. **Scale Score: 400–419**

Basic: Students performing at the Basic level on the Missouri English II End-of-Course Assessment independently demonstrate a partial or uneven command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills inconsistently in reading processes, in responding to both literary and informational texts in a variety of media, in writing, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Below Basic level, students performing at the Basic level use some strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; they demonstrate a partial understanding of craft and structure and inconsistently apply strategies for accessing and summarizing information. They demonstrate an inconsistent ability to research, organize, and/or develop writing and command of the conventions of English. They demonstrate emerging listening/speaking skills. **Scale Score: 384–399**

Below Basic: Students performing at the Below Basic level on the Missouri English II End-of-Course Assessment independently demonstrate a minimal command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills at a foundational level in reading processes, in responding to literary and informational texts in a variety of media, in writing, and in listening/speaking. Students performing at the Below Basic level exhibit few strategies to comprehend, interpret, analyze, and synthesize grade-appropriate texts; they demonstrate little understanding of craft and structure and apply few strategies for accessing and/or summarizing information. They demonstrate rudimentary research, organization, development, and/or command of the conventions of English. They demonstrate emerging listening/speaking skills.

Scale Score: 325–383

5.6 Biology Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri Biology End-of-Course Assessment effectively, consistently, and appropriately apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They use information to evaluate patterns in data and revise models that support scientific claims, explain relationships among variables, and predict based on scientific principles and reasoning how the variables will change over time. They revise the design of investigations in order to collect data that can describe quantitative relationships among variables. They analyze patterns in data to determine which solution best meets the criteria and constraints of a problem. They use data, mathematical and computational thinking, and scientific principles to construct explanations of scientific processes and arguments about stability and change within systems. **Scale Score: 411 and higher**

Proficient: Students performing at the Proficient level on the Missouri Biology End-of-Course Assessment effectively apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They develop models and use information and patterns in data to support scientific arguments, describe relationships among variables, and predict how the variables will change over time. They plan investigations to determine proportional relationships among variables. They analyze patterns in data to evaluate how well a solution meets the criteria and constraints of a problem. They use data, mathematical and computational thinking, and scientific principles to construct explanations of scientific processes and arguments about how systems and system parts will change over time. **Scale Score: 400–410**

Basic: Students performing at the Basic level on the Missouri Biology End-of-Course Assessment apply, with support, science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They use models, information, and patterns in data to support scientific arguments, identify the relationship between two variables, and make predictions about how changes to one variable will affect other variables. They describe the data to collect in an investigation in order to identify proportional relationships among variables. They use patterns in data to identify a solution that meets given criteria and constraints of a problem. They use data, basic algebraic thinking, and scientific principles to support explanations of scientific processes and arguments about how systems and system parts will change over time. **Scale Score: 381–399**

Below Basic: Students performing at the Below Basic level on the Missouri Biology End-of-Course Assessment seldom apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They occasionally identify models, information, and patterns in data to describe relationships between two variables and make predictions about how changes to one variable will affect other variables. They infrequently recognize trends in the data collected during an investigation in order to identify relationships among variables. They can sometimes use patterns in data to identify a solution to a problem. They occasionally use data and basic algebraic thinking to explain how systems and system parts will change over time. **Scale Score: 325–380**

5.7 Physical Science Performance-Level Descriptors

Advanced: Students performing at the Advanced level on the Missouri Physical Science End-of-Course Assessment effectively, consistently, and appropriately apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They use information to evaluate patterns in data and revise models that support scientific claims, explain relationships among variables, and predict based on scientific principles and reasoning how the variables will change over time. They revise the design of investigations in order to collect data that can describe quantitative relationships among variables. They analyze patterns in data to determine which solution best meets the criteria and constraints of a problem. They use data, mathematical and computational thinking, and scientific principles to construct explanations of scientific processes and arguments about stability and change within systems. **Scale Score: 417 and higher**

Proficient: Students performing at the Proficient level on the Missouri Physical Science End-of-Course Assessment effectively apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They develop models and use information and patterns in data to support scientific arguments, describe relationships among variables, and predict how the variables will change over time. They plan investigations to determine proportional relationships among variables. They analyze patterns in data to evaluate how well a solution meets the criteria and constraints of a problem. They use data, mathematical and computational thinking, and scientific principles to construct explanations of scientific processes and arguments about how systems and system parts will change over time. **Scale Score: 400–416**

Basic: Students performing at the Basic level on the Missouri Physical Science End-of-Course Assessment apply, with support, science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They use models, information, and patterns in data to support scientific arguments, identify the relationship between two variables, and make predictions about how changes to one variable will affect other variables. They describe the data to collect in an investigation in order to identify proportional relationships among variables. They use patterns in data to identify a solution that meets given criteria and constraints of a problem. They use data, basic algebraic thinking, and scientific principles to support explanations of scientific processes and arguments about how systems and system parts will change over time. **Scale Score: 382–399**

Below Basic: Students performing at the Below Basic level on the Missouri Physical Science End-of-Course Assessment seldom apply science and engineering practices identified in the Missouri Learning Standards to explain phenomena and design solutions to problems in the natural and the designed world. They occasionally identify models, information, and patterns in data to describe relationships between two variables and make predictions about how changes to one variable will affect other variables. They infrequently recognize trends in the data collected during an investigation in order to identify relationships among variables. They can sometimes use patterns in data to identify a solution to a problem. They occasionally use data and basic algebraic thinking to explain how systems and system parts will change over time. **Scale Score: 325–381**

5.8 Government Performance-Level Descriptors

Advanced: Students performing at the Advanced level are able to consistently and independently demonstrate thorough, appropriate, and effective application of the tools of social science inquiry as identified in the Missouri Learning Standards for American Government. In addition to demonstrating, understanding and applying skills and knowledge at the Proficient level, students performing at the Advanced level consistently demonstrate the ability to: independently evaluate government processes and principles, thoroughly evaluate the roles and responsibilities of citizens and their anticipated effects on government, effectively use evidence to form and support valid social science arguments, and predict and evaluate the effect of government policies on individuals and institutions. Students performing at the Advanced level are well prepared for the next course and meet the standard of college and career ready. **Scale Score: 423 and higher**

Proficient: Students performing at the Proficient level are able to independently demonstrate appropriate application of the tools of social science inquiry as identified in the Missouri Learning Standards for American Government. In addition to demonstrating, understanding and applying skills and knowledge at the Basic level, students performing at the Proficient level adequately demonstrate the ability to: analyze government processes and principles, analyze the roles and responsibilities of citizens and their effects on government, use evidence to form and support valid social science arguments and analyze the effect of government policies on individuals and institutions. Students performing at the Proficient level are prepared for the next course and are on track for college and career readiness. **Scale Score: 400–422**

Basic: Students performing at the Basic level are able, with support, to apply the tools of social science inquiry identified in the Missouri Learning Standards for American Government. In addition to demonstrating, understanding and applying skills and knowledge at Below Basic level, students performing at the Basic level are able to explain government processes and principles, explain the roles and responsibilities of citizens and their effects on government, explain evidence that supports a social science argument, and explain the effects of government policies on individuals and institutions. Students performing at the Basic level need additional support to ensure success in the next course and to be on track for college and career readiness. **Scale Score: 375–399**

Below Basic: Students performing at the Below Basic level seldom apply the tools of social science inquiry identified in the Missouri Learning Standards for American Government. Students performing at the Below Basic level minimally identify government processes and principles, identify the roles and responsibilities of citizens and their effect on government, identify evidence that supports social science arguments and identify the effects of government policies on individuals and institutions. Students performing at the Below Basic level need substantial academic support to be prepared for the next course and be on track for college and career readiness. **Scale Score: 325–374**

5.9 American History Performance-Level Descriptors

Advanced: Students performing at the Advanced level are able to consistently and independently demonstrate thorough, appropriate, and effective application of the tools of social science inquiry as identified in the Missouri Learning Standards for American History. Students performing at the Advanced level consistently incorporate all strands of social studies in the context of American history from Reconstruction to the present. In addition to demonstrating, understanding and applying skills and knowledge at the Proficient level, students performing at the Advanced level consistently demonstrate the ability to: independently evaluate continuity and change in history, predict and evaluate the consequences of major historical, political, economic, social and demographic trends, effectively use evidence to form and support valid social science arguments and use complex historical understanding to make connections with modern events. Students performing at the Advanced level are well prepared for the next course and meet the standard of college and career ready. **Scale Score: 422 and higher**

Proficient: Students performing at the Proficient level are able to independently demonstrate appropriate application of the tools of social science inquiry as identified in the Missouri Learning Standards for American History. Students performing at the Proficient level incorporate strands of social studies in the context of American history from Reconstruction to the present. In addition to demonstrating, understanding and applying skills and knowledge at the Basic level, students performing at the Proficient level consistently demonstrate the ability to: analyze continuity and change in history, analyze the consequences of major historical, political, economic, social and demographic trends, use evidence to form and support valid social science arguments and apply historical understanding to make connections with modern events. Students performing at the Proficient level are on track for the next course and meet the standard of college and career ready. **Scale Score: 400–421**

Basic: Students performing at the Basic level are able, with support, to apply the tools of social science inquiry as identified in the Missouri Learning Standards for American History. Students performing at the Basic level incorporate some strands of social studies in the context of American history from Reconstruction to the present. In addition to demonstrating, understanding and applying skills and knowledge at the Below Basic level, students performing at the Basic level consistently demonstrate the ability to: explain continuity and change in history, explain the consequences of major historical, political, economic, social and demographic trends, explain evidence that supports social science arguments and connect historical understanding with modern events. Students performing at the Basic level need additional support to ensure success in the next course and to be on track for college and career readiness. **Scale Score: 371–399**

Below Basic: Students performing at the Below Basic level seldom apply the tools of social science inquiry as identified in the Missouri Learning Standards for American History. Students performing at the Below Basic level struggle to incorporate strands of social studies in the context of American history from Reconstruction to the present. Students performing at the Below Basic level minimally demonstrate the ability to: identify continuity and change in history, identify the consequences of major historical, political, economic, social and demographic trends, identify evidence that supports social science arguments and identify links between historical understanding and modern events. Students performing at the Below Basic level need substantial academic support to be prepared for the next course and be on track for college and career readiness. **Scale Score: 325–370**

6.0 Sample Reports

6.1 Individual Student Report

The Individual Student Report (ISR) provides information about performance on the End-of-Course Assessment, describing the results in terms of four levels of performance in a content area. It is used for measuring and reflecting an individual student's mastery toward postsecondary readiness for a content area. It is used as a point of reference in instructional planning during a parent/teacher conference and for permanent record keeping. Other sources of information should be used along with this report when determining the student's areas of strength or need.

Performance-level scores describe what students can do in terms of the Course-Level Expectations for the content and skills assessed by the End-of-Course Assessment. Students in the Proficient or Advanced levels have met the standard. Students in the Below Basic or Basic levels need to work on the skills described for their level in Section 5.0 Performance-Level Descriptors, as well as on skills in the next higher level.

ISRs can be exported from Nextera Admin. They can be retrieved by class, school, or district levels. For Spring 2023, ISRs become available following the close of the statewide testing window. Review the *Test Coordinator's Manual* for instructions on how to retrieve ISRs and other reports.

The next pages include a sample of the Individual Student Report. The following areas on the sample have been identified to better explain the results that are being reported:

- [A] The heading of the Individual Student Report includes the content area for the results being presented. A separate report is produced for each content area tested.
- [B] The Student Information section contains the biographic data for the individual student taking the assessment. Identifying information for the MOSIS ID, date of birth, grade, test date, district, and school are listed.
- [C] The narrative describes the student performance characteristics corresponding to the level of performance obtained. The text is specific to the content area tested. At the bottom of the page is the URL, which provides additional information for all of the performance levels for the content area.
- [D] The individual student's results are presented numerically as a three-digit scale score with the standard error (SE). An accompanying bar graph illustrates the performance level obtained by the student. Performance levels (whether Advanced, Proficient, Basic, or Below Basic) are based on the scale score ranges listed beneath this section.

[E] The mean scale scores for the student's building and district are displayed in the two rows below the student's individual results. The mean scale score, with an associated SE, and the bar graph provide a way to view the individual's results in contrast to the group's results for the content area during the same test period.

[F] For English I, English II, and Algebra I, MetaMetrics provides a Lexile/Quantile score based on the student's scale score. Page two of the ISR provides the Lexile/Quantile score as well as support resources for administrators and teachers.

A

Sarah's Overall Results

ADVANCED

Name: Sarah Johnson
 MOSIS: 999999999
 Birth Date: mm-dd-yyyy
 Grade: 11

B

Test Date: 2023 Spring EOC
 Testing District: MISSOURI SCHOOL DISTRICT
 Testing School: MISSOURI SCHOOL

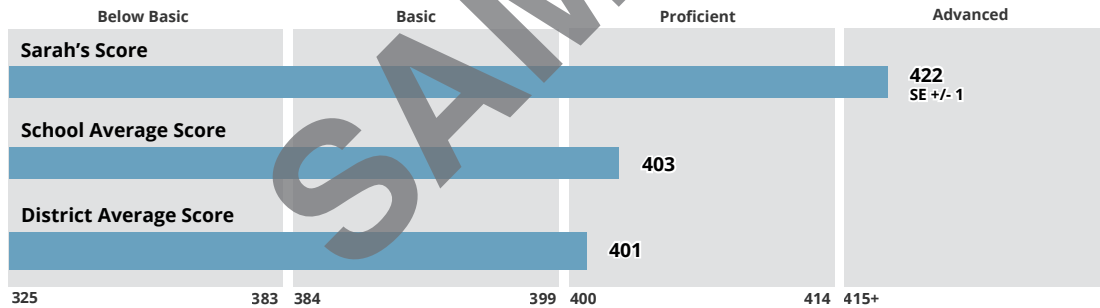
Sarah's Performance Level: Advanced

Students performing at the Advanced level on the Missouri English II End-of-Course Assessment consistently and independently demonstrate a thorough command of the skills and processes identified in the Missouri Learning Standards. They demonstrate these skills completely and thoroughly in reading processes, in responding to both literary and informational texts in a variety of media, in writing effectively, and in listening/speaking. In addition to demonstrating, understanding, and applying the skills at the Proficient level, students performing at the Advanced level use a range of strategies to comprehend, interpret, analyze, and synthesize a variety of grade-appropriate texts; demonstrate a thorough understanding of craft and structure; and consistently apply different strategies for accessing and summarizing information. They demonstrate an effective and thorough ability to research, organize, and develop writing and exhibit an adequate command of the conventions of English. They employ effective listening/speaking skills.

C

D

E



Below Basic 325-383	Basic 384-399	Proficient 400-414	Advanced 415+
Students demonstrate little understanding of the skills and processes identified in the Course Level Expectations for English II.	Students demonstrate an incomplete understanding of the skills and processes identified in the Course Level Expectations for English II.	Students demonstrate an understanding of the skills and processes identified in the Course Level Expectations for English II.	Students demonstrate a thorough understanding of the skills and processes identified in the Course Level Expectations for English II.

For more information about performance levels, please visit the following web site:
<http://dese.mo.gov/college-career-readiness/assessment/end-course>

Figure 6.1

The Lexile® Framework for Reading is a scientific approach that places both the reader and text on the same developmental scale, making it easy to connect your child with books targeted to their reading ability.

F

Lexile Measure

1510L

For more information, and to search for books by Lexile Measure, visit www.Lexile.com

Visit <https://hub.lexile.com/> (Lexile & Quantile Hub) for additional MetaMetrics Lexile and Quantile tools, resources, and support.

The Lexile Growth Planner offers a snapshot of a student's progress toward college and career readiness. With the Lexile® and Quantile® Growth Planners, you can see the Lexile level and/or Quantile level associated with entry-level reading and/or math demands of hundreds of careers to inform goal setting.

For more information about Lexile Growth Planner, visit hub.lexile.com/lexile-growth-planner

Figure 6.1 cont'd

6.2 Student Score Label

The Student Score Label provides a summary of a student's results on the End-of-Course Assessment. A separate label is produced for each content area tested. The individual label provides the student's biographic data, scale score, and performance level. The labels have adhesive backing so that they can be easily transferred onto the student record folders.

A sample label is shown below.

[A] The top right side of the label shows the content area tested.

[B] The student's name and identifying information are provided on the left side of the label.

[C] The student's scale score and performance level are provided on the bottom right side of the label.

B	LNAME1, FNAME1		<i>Missouri End-of-Course</i>	A
	MOSIS ID:	1234567890	<i>English I</i>	
	School:	Missouri School		
	District:	Missouri District	Scale Score: 404	C
	Test Period:	2023 Spring	Performance Level: Proficient	

Figure 6.2

6.3 Final Roster

Student performance data is provided in a CSV file and can be exported at the class, school, and district levels via the Nextera Reports tab. This roster file includes data elements such as student demographic information and student performance data (Scale Score & Performance Level). The Final Rosters for Spring 2023 are provided following the close of the statewide testing window. Review the *Test Coordinator's Manual* for instructions on how to retrieve Final Rosters and other reports. Roster files include the following:

- District Code
- District Name
- School Code
- School Name
- Grade
- Examiner Name
- Class Name
- State Student ID Number

- Student Last Name
- Student First Name
- Student Middle Initial
- Student Date of Birth
- Administration
- Subject Assessed
- Total Possible Points
- Student Total Points Earned
- Student Percentage Points Earned
- Student Scale Score
- Student Proficiency Classification

6.4 Standards Analysis Summary Report

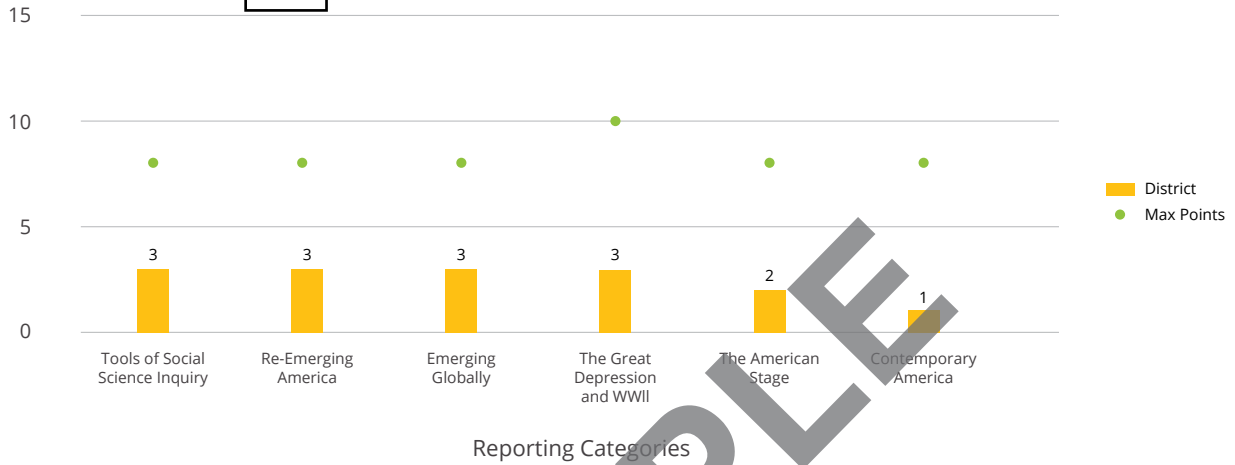
The Standards Analysis Summary Report is intended to provide teachers and administrators with meaningful data to better inform instruction in a timely fashion. The Standards Analysis Summary Report is a picture of class, school, and district performance at a given standard and reporting category. For details about Missouri Learning Standards and Reporting Categories, see the End-of-Course blueprints available on the DESE website: <https://dese.mo.gov/media/pdf/eoc-blueprints>

Like the Preliminary Roster, this report is retrieved via Nextera Admin. For Spring 2023, it will be available 5 business days following the close of the district testing window.

- [A]** The top of the report shows the Class/School/District average score by Reporting Category. The graph displays a class performance as compared to the overall school performance and overall district performance.
- [B]** The bottom of page 1 shows the Class/School average score by Standard. The graph is organized by reporting category and aligns with the data displayed in the graph above and table below.
- [C]** Page 2 shows the data table detailing the average score and metadata for each reporting category and standard. Expand the reporting category by clicking the link to view the corresponding standards.

A

Average Points Earned by Report Category



B

Average Points Earned by Standards

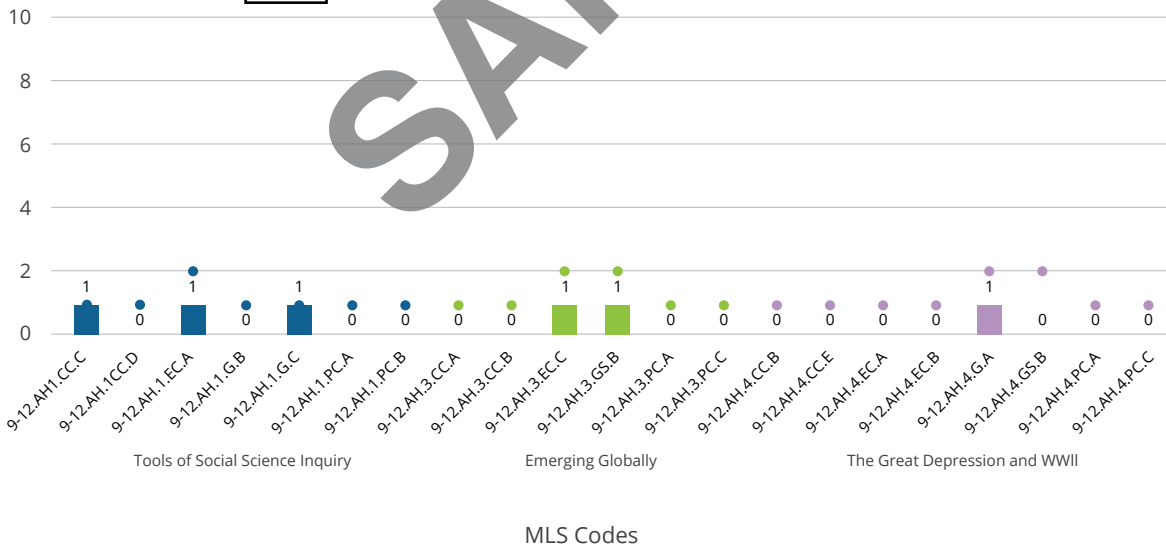


Figure 6.3

C

Report Category	MLS Code	DOK	Item Type	Priority Standard	District Average
Tools of Social Science Inquiry					3
	9-12.AH.1.CC.C	Application	choice	Y	1
	9-12.AH.1.CC.D	Application	choice	Y	0
	9-12.AH.1.EC.A	Strategic Thinking	extendedText	Y	1
	9-12.AH.1.G.B	Application	choice	Y	0
	9-12.AH.1.G.C	Application	choice	Y	1
	9-12.AH.1.PC.A	Strategic Thinking	choice	Y	0
	9-12.AH.1.PC.B	Recall	choice	Y	0
Re-Emerging America					3
Emerging Globally					3
	9-12.AH.3.CC.A	Application	choice	Y	0
	9-12.AH.3.CC.B	Strategic Thinking	choice	Y	0
	9-12.AH.3.EC.C	Application	choice	Y	1
	9-12.AH.3.GS.B	Application	match	Y	1
	9-12.AH.3.PC.A	Strategic Thinking	choice	Y	0
	9-12.AH.3.PC.C	Strategic Thinking	choice	Y	0
The Great Depression and WWII					3
	9-12.AH.4.CC.B	Application	choice	Y	0
	9-12.AH.4.CC.E	Application	choice	Y	0
	9-12.AH.4.EC.A	Recall	choice	Y	0
	9-12.AH.4.EC.B	Application	choice	Y	0
	9-12.AH.4.G.A	Application	choice	Y	1
	9-12.AH.4.GS.B	Application	extendedText	Y	0
	9-12.AH.4.PC.A	Recall	choice	Y	0
	9-12.AH.4.PC.C	Recall	choice	Y	0
The American Stage					2
Contemporary America					1

NOTE: Due to rounding, the average sums by class, school, and district may vary from the summary line values.

Figure 6.3 cont'd

6.5 Preliminary Roster

Preliminary student performance data is provided in a CSV file and can be exported at the class, school, and district levels via the Nextera Reports tab. This roster file includes data elements such as student demographic information, percent of points earned, and points possible. The Preliminary Rosters for Spring 2023 are provided 5 business days following the close of the District testing window. Review the *Test Coordinator's Manual* for instructions on how to retrieve Preliminary Rosters and other reports. Roster files include the following:

- District Code
- District Name
- School Code
- School Name
- Grade
- Examiner Name
- Class Name
- State Student ID Number
- Student Last Name
- Student First Name
- Student Middle Initial
- Student Date of Birth
- Administration
- Subject Assessed
- Student Total Points Possible
- Student Total Points Earned
- Student Percentage Points Earned

6.6 Item Analysis Report Package

The Item Analysis Report Package provides multiple item level data files and reports at the district, school, class, and student levels. The Item Analysis Report Package is intended to provide teachers and administrators a detailed look at item level statistics in order to better inform instruction.

This package of reports is accessible via the Nextera Admin Reports tab by selecting Data Files.

For Spring 2023, the Item Analysis Report Package becomes available following the close of the statewide testing window. The package is provided as zip files and organized by district and school.

Available data files and reports include:

- Expanded Test Map
- Content Reporting Category Data File
- Content Standard Data File
- Content Strand Data File
- Item Analysis Summary Data File
- Item Analysis Summary Data File - Student File
- Content Strand Summary Report
- Item Analysis Summary Report

6.7 Pre-Test Reports

The Pre-Test Report provides information about performance on the End-of-Course Practice Test for a content area. Results can provide educators with important instructional information.

Pre-Test Reports can be exported from Nextera Admin. Pre-Test Reports become available 24 hours after Teacher Scoring is complete. Review the *Test Coordinator's Manual* for instructions on how to retrieve Pre-Test and other reports.

The next pages include a sample of the Pre-Test Report. The following areas on the sample have been identified to better explain the results that are being reported:

- [A] The heading of the Pre-Test Report includes the content area for the results being presented. A separate report is produced for each content area tested.
- [B] The Student Information section contains the biographic data for the individual student taking the assessment. Identifying information for the MOSIS ID, gender, school, district, and test date are listed.
- [C] The numbers of items the student answered correctly and incorrectly are listed.
- [D] The individual student's responses are presented in a table along with a column indicating whether the student responded with the correct answer or not and a column showing the key for each machine-scored item. As noted on the Pre-Test Report, Teacher-scored item results can be downloaded from Nextera Admin in the Test Results file.

B

Name: Sarah A. Johnson
MOSIS: 1234567890
Gender: F
Testing School: MISSOURI SCHOOL (001)
Testing District: MISSOURI SCHOOL DISTRICT (001001)
Test Date: 11-2-2022

C

Sarah's Machine Scored Results	
Number of Items Correct:	17
Number of Items Incorrect:	34

D

Item #	Response	Correct?	Key
1	A	Incorrect	B
2	A	Incorrect	B,C
3	A	Incorrect	B
4	A	Incorrect	B
5	A	Incorrect	B
6	A2,B2,C3	Incorrect	A1,B2,C3
7	A	Incorrect	B
8	A1,B4,C3,D2	Correct	A1,B4,C3,D2
9	A	Correct	A
10	A	Incorrect	B
11	$3x^2-x+2$	Correct	$3x^2-x+2$
12	A	Incorrect	B
13	A	Incorrect	B
14	A	Incorrect	B
15	A,B	Incorrect	A,B,D
16	A	Incorrect	B
17	A	Correct	A
18	A	Incorrect	B
19	A	Correct	A
20	A	Incorrect	B
21	$c=0.025s$	Correct	$c=0.025s$
22	A	Incorrect	B
23	A	Incorrect	B
24	A	Incorrect	B
25	A	Incorrect	B
26	A	Incorrect	B
27	A	Correct	A
28	A	Correct	A
29	A	Incorrect	B
30	A	Correct	A
31	A	Incorrect	B

Note - Teacher Scored items will not show the response, correctness or the key. To see the results of teacher scored items, go to Teacher Scoring portal in Nextera Admin and download the "Test Results" file.

Figure 6.4

