Missouri DEPARTMENT OF ELEMENTARY & SECONDARY EDUCATION™

State Assessment Update

October 23, 2018

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EDUCATION

SHOW-ME SUCCESS

Our Vision

Missouri public schools:
the best choice … the best results!

Our Mission

The Missouri Department of Elementary and Secondary Education's mission is to guarantee the superior preparation and performance of every child in school and in life.

Our Goal

All Missouri students will graduate ready for success.

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What do business and industry experts tell us about how well high school graduates are prepared to enter the workforce?

Are Missouri Students Prepared for the Workforce?

	Yes	Neutral	No
K-12	15%	39%	44%

"I've talked to numerous other business people in the last month, and there's no one to hire. ***People are unqualified****…"*

- CEO, General Construction Contracting

MISSOURI CHAMBER OF COMMERCE AND INDUSTRY

Source: 2015 Gallup Missouri 2030 Interviews

Attributes Employers Seek in Candidates

Attribute	% of respondents
Leadership	80.1%
Ability to work on a team	78.9%
Communication skills (written)	70.2%
Problem-solving skills	70.2%
Communication skills (verbal)	68.9%
Strong work ethic	68.9%
Initiative	65.8%
Analytical/quantitative skills	62.7%
Flexibility / adaptability	60.9%
Technical skills	59.6%
Interpersonal skills (relates well to others)	58.4%
Computer skills	55.3%
	Job Outlook 2016, National Association of Colleges and Employers

What do higher education results tell us about how well high school graduates are prepared to enter college?

Missouri Public High School Graduate Enrollment in Remedial Classes in Public Post-Secondary Institutions

	Fall 2013	Fall 2014	Fall 2015	Fall 2016	Fall 2017
TOTAL	**35.6%**	**30.8%**	**28.2%**	**26.8%**	**22.8%**
Math	30.1%	26.2%	23.8%	21.5%	17.6%
English	15.5%	12.3%	10.0%	11.4%	10.1%
Reading	9.7%	7.6%	6.1%	6.6%	6.0%

Missouri Coordinating Board for Higher Education, March 8, 2018

Missouri Public High School Graduate 6-Year Completion Rate (Fall 2011 – Spring 2017)

	# Students	Completed Associates Degree	Completed Bachelor's Degree	Completed Graduate Degree	Total Completions
TOTAL	**23,429**	**16.8%**	**35.8**	**2.2%**	**48.9%**
African American	2,431	6.3%	21.8%	0.6%	27.4%
Caucasian	17,834	19.3%	36.0%	2.0%	51.0%
Hispanic	341	19.9%	27.5%	0.8%	42.2%
Asian / Pacific Islander	391	11.0%	45.5%	4.6%	53.7%

Missouri Coordinating Board for Higher Education, March 8, 2018

ACT College Benchmarks

- 68,424 graduates (100%) of public school graduating class of 2018 took the ACT
  - 19% met all four ACT College Readiness Benchmarks
  - 53% met the ACT English College Readiness Benchmark
  - 38% met the ACT Reading College Readiness Benchmark
  - 30% met the ACT Math College Readiness Benchmark
  - 29% met the ACT Science College Readiness Benchmark

Section 160.526, RSMo

1. In establishing, evaluating, modifying and revising the academic performance standards and learning standards and the statewide assessment system…the State Board of Education shall consider the work that has been done by

- other states
- recognized regional and national experts
- professional education discipline-based associations
- other professional education associations
- the Department of Higher Education's curriculum alignment initiative
- any work in the public domain

Section 160.526, RSMo

2. The State Board of Education shall by contract enlist the assistance of such national experts to receive reports, advice and counsel on a regular basis pertaining to the validity and reliability of the statewide assessment system. The reports from such experts shall be received by the State Board of Education.

Section 160.522, RSMo.

School accountability report card for each school district, purpose — standard form, contents — distribution of report card information. — 1. The department of elementary and secondary education shall produce or cause to be produced, at least annually, a school accountability report card for each public school district, each public school building in a school district, and each charter school in the state. The report card shall be designed to satisfy state and federal requirements for the disclosure of statistics about students, staff, finances, academic achievement, and other indicators. The purpose of the report card shall be to provide educational statistics and accountability information for parents, taxpayers, school personnel, legislators, and the print and broadcast news media in a standardized, easily accessible form.

Missouri Assessment Program
Establishing Performance Levels and Cut Scores

for English Language Arts and Mathematics Assessments

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Assessment in Missouri

Federal Legislation

Board of Education

State Legislature

1993 — Outstanding Schools Act (Missouri) requires development of standards and a system to measure student progress

1997 — Missouri Assessment Program (MAP)

2001 — Federal Elementary and Secondary Education Act (ESEA) reauthorized under No Child Left Behind (NCLB) increases testing requirements

2004 — Grade-Level Expectations (GLEs) developed with Missouri educators

2005 — Grade-Level Assessments

2007 — End-of-Course high school assessment plan approved by Missouri State Board of Education

Course-Level Expectations (CLEs) developed with Missouri educators

2009 — End-of-Course Assessments (EOC)

2010 — Missouri adopts the Common Core State Standards for English Language Arts and Mathematics

2015 — New Mathematics and English Language Arts MAP Grade-Level and EOC (Grade-Level items provided by SBAC)

2015 — Missouri statute requires withdrawal from SBAC, creation of new academic standards and development of new assessments

2016 — Federal Elementary and Secondary Education Act (ESEA) reauthorized under the Every Student Succeeds Act (ESSA)

2016 — Missouri Learning Standards: Grade- and Course-Level Expectations in English Language Arts, Mathematics, Science and Social Studies approved by Missouri State Board of Education

New Grade-Level Assessments in Mathematics and English Language Arts

2018 — New Grade-Level and EOC Assessments in Mathematics and English Language Arts

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"Bookmark Process" for Setting Cut Scores on Missouri Assessments

- 1997 Math grades 4, 8, 10
- 1998 Communication Arts grades 3, 7, 11
- 1998 Science grades 3, 7, 10
- 1999 Social Studies grades 4, 8, 11
- 2005 Math grades 3-8 and 10
- 2005 Communication Arts grades 3-8 and 11
- 2008 Science grades 5 and 8
- 2015 Science grades 5 and 8
- 2016 Math grades 3-8
- 2016 Communication Arts grades 3-8
- *Smarter Balanced Assessment Consortium also used the bookmark process to set cut scores on its English Language Arts and Math assessments which were used by Missouri in 2014-15.

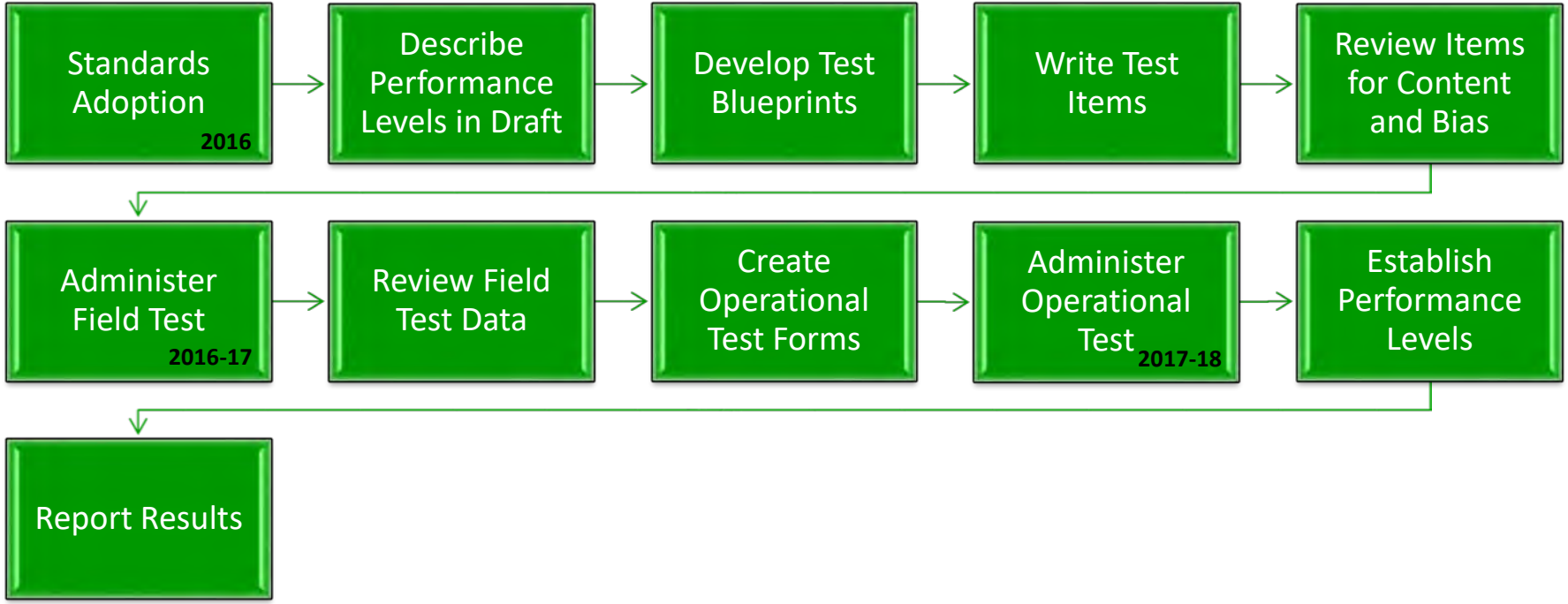
Missouri Assessment Program

Assessment	Authorization
Grade-Level ELA and Mathematics (grades 3-8)	ESSA
Grade-Level Science (grades 5 and 8)	ESSA
EOC Algebra I, Biology, English II	ESSA
EOC American Government	MSIP
EOC Algebra II*, American History, English I, Geometry*, Personal Finance, Physical Science	Optional

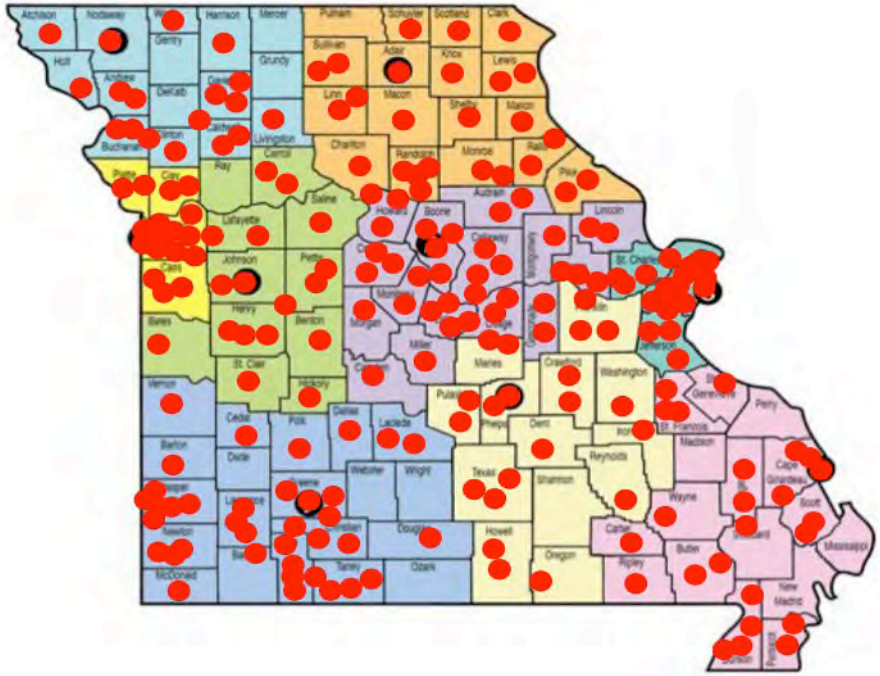
About the MAP Tests

- Students take Grade-Level Assessments in mathematics and English language arts each year in grades 3–8.
- Grade-Level Assessments are administered during the spring testing window.
- Students take Algebra I and English II EOC assessments at the end of instruction.
- EOC assessments are offered in summer, fall and spring testing windows.
- Middle school students who take advanced math courses and take Algebra I, Geometry or Algebra II EOC aren’t required to take the Grade-Level math test that year.
- Scores are expressed in four performance levels: below basic, basic, proficient, advanced.

Building MAP Tests



Building MAP Tests

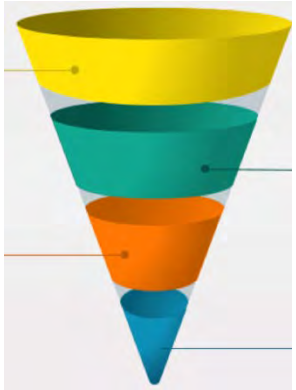


Missouri educators representing 225 Missouri school districts and charter LEAs were involved in the development of the newest MAP tests.

Process for Establishing Performance Levels

Missouri's process is…

- Multi-step *Bookmark Procedure*
- Recognized by the American Educational Research Association, the National Council on Measurement in Education, the US Department of Education
- Widely-used
- Previously employed in Missouri
- Includes these important considerations:
  - Content
  - Policy
  - Measurement science and technical quality



Multi-Step Decision-Making Process

Process for Establishing Performance Levels

End-of-Course Bookmark Workshops
July: Missouri educators make content-based cut score recommendations using information from MAP tests and ACT.

Grade-Level Bookmark Workshops
July: Missouri educators make content-based cut score recommendations using information from MAP tests and NAEP.

Policy Review
August: Policy group considers cut score recommendations, their implications and uses.

Technical Advisory Committee Meeting
August: National experts on measurement and assessment review the processes and results to help ensure technical quality.

Process for Establishing Performance Levels

One Hundred Fifty-six (156) Missouri educators engaged in "bookmark" workshops. As workshop panelists, they possessed relevant grade- and content-specific experience. They represented

- various geographic regions of the state;
- rural, urban and suburban schools; and
- the diversity present in Missouri schools.

Process for Establishing Performance Levels

During the workshop, panelists developed cut score recommendations by considering

- the knowledge and skills expected of students in each performance level;
- the student performance expected in each of the MAP assessments; and
- Missouri students' performance on ACT and NAEP.

Process for Establishing Performance Levels

In post-workshop evaluations…

- 151/156 indicated that they understood the purpose of the workshop.
- 99% believed their opinions were considered and valued.
- 98% believed the process would lead to appropriate and defensible cut scores.

Process for Establishing Performance Levels

Policy Review

- A ten-member panel made up of district leaders, building leaders and higher education faculty reviewed the End-of-Course and Grade-Level workshop recommendations.

Technical Advisory Committee Review

- Missouri's group of national experts reviewed the process from planning through implementation. They critiqued plans, observed the bookmark workshops, facilitated the policy review, and provided an analysis of the process employed for establishing performance levels.

Performance Level Descriptors

PLDs outline the knowledge and skills embedded in the Missouri Learning Standards expected at each performance level. PLDs…

- relate to the MLS expectations in each content area and grade or course;
- differ from grade to grade and course to course; and
- contain high level descriptions and more specific content-based descriptions at the content strand level.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
High Level	Do not yet demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. The students need substantial academic support to be prepared for the next grade level or course and to be on track for college and career readiness.	Demonstrate partial proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. The students need additional academic support to ensure success in the next grade level or course and to be on track for college and career readiness.	Demonstrate proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations, and uses clear and precise language when communicating mathematical understanding. The students are prepared for the next grade level or course and are on track for college and career readiness.	Demonstrate advanced proficiency in the knowledge and skills necessary at this grade level/course of learning, as specified in content expectations. The students are well prepared for the next grade level or course and are well prepared for college and career readiness.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
Operations and Algebraic Thinking	Solves given single-step problems by adding, subtracting and multiplying; Identifies factors and multiples of given whole numbers; Identifies the next number or shape in a pattern.	Solves given problems involving the four operations; Solves division problems with remainders; Creates factor pairs of a given number; Identifies prime and composite numbers; Creates multiples of a given number; Describes patterns.	Uses estimation to determine reasonableness when solving multi-step problems that involve unknowns and the four operations; Interprets remainders in the context of division problems and justifies the solution; Assess if a number is prime or composite by modeling using all factor pairs where possible; Recognizes the relationship that a whole number is a multiple of each of its factors; Generates patterns and express the rule to describe a pattern; Looks for and makes use of structure and repeated reasoning when solving multiplicative comparisons problems.	Constructs viable arguments to justify relationships between multiplicative and additive comparison problems; Assesses the reasonableness of solutions in multiple ways; Reasons that composite numbers are built from the products of prime numbers; Analyzes patterns through repeated reasoning.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
Number and Operations in Base Ten	Compares two whole numbers; Rounds whole numbers to the hundreds place using a given visual model; Uses place value to read and write numbers up to one million; Adds and subtracts multi-digit whole numbers; Calculates products of whole numbers.	Compares two whole numbers using symbols; Rounds whole numbers up to six digits to the thousands place; Adds and subtracts multi-digit whole numbers using properties; Calculates products and quotients involving whole numbers.	Explains the directional characteristics of place value within one million (a digit represents ten times what it would represent the place to the right); Reasons both contextually and abstractly when comparing and rounding whole numbers up to one million; Solves problems involving products and quotients of whole numbers using strategies based on properties and estimation; Uses multiple representations and analyzes the reasoning of others when adding and subtracting whole numbers.	Reasons abstractly and quantitatively when explaining the structure of place value in relation to solving problems involving the four operations and comparing multi-digit whole numbers.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
Number and Operations in Fractions	Compares fractions with the same numerator or denominator; Identifies multiple forms of fraction and decimal equivalency; Identifies fractional equivalence when given visual models (limit to halves, thirds, fourths, sixths, and eighths).	Compares fractional and decimal quantities using models; Reads and writes multiple forms of fraction and decimal equivalency; Recognizes and generates fractional equivalence; Finds sums and differences of fractions with like denominators when given a model; Decomposes fractions based on unit fractions; Multiplies fractions by whole numbers (limit to halves, thirds, fourths, sixths, eighths, fifths and tenths).	Makes sense of the relationship between fraction and decimal equivalency; Compares and justifies fractional and decimal quantities; Generates and explains fractional equivalence; Solves problems by adding and subtracting fractions and mixed numbers with like denominators and uses modeling to justify the sums and differences; Solves problems by multiplying a fraction by a whole number using mathematical models (limit to halves, thirds, fourths, sixths, eighths, tenths, twelfths and hundredths).	Constructs arguments and critiques reasoning while making connections between models and equations when adding and subtracting fractions and mixed numbers, and when multiplying a fraction by a whole number; Attends to precision when justifying the reasonableness of a result or comparison.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
Geometry and Measurement	Solves one-step problems with measurement units; Estimates the relative sizes of measurement units; Compare rectangles that have equal perimeters but different areas, or rectangles that have equal areas but different perimeters; Recognizes angles; Identifies two- dimensional shapes; Recognizes shapes with symmetry.	Solves one step measurement problems using the appropriate tool; Converts units of measurement using visual models; Solves problems involving area and perimeter of rectangles using visual models; Estimates angle measurements; Classifies two-dimensional shapes based on their sides; Identifies lines of symmetry.	Justifies answers using the appropriate tool to solve problems in measurement using the four operations; Solves measurement conversion problems based on reasoning; Solves problems by applying formulas of area and perimeter of rectangles in context; Uses tools strategically to draw and measure angles; Classifies two dimensional shapes based on their sides and angles; Constructs lines of symmetry for a two-dimensional shape.	Reasons abstractly and quantitatively to find missing side lengths with a given area and perimeter; Interprets the reasons for converting measurement units; Models with mathematics to justify the classification of shapes.

Performance Level Descriptor Example: Grade 4 Mathematics

	Below Basic	Basic	Proficient	Advanced
Data and Statistics	Recognizes the appropriate line plot or frequency table that represents a set of given data; Compare quantities in a bar or picture graph.	Creates line plot or frequency table to represent data in whole-number units; Solves problems involving addition and subtraction using bar or picture graphs.	Reasons abstractly and quantitatively to analyze data in multiple representations; Creates line plots and frequency tables to represent measurement data; Solves addition and subtraction problems involving interpretation of data.	Critiques the reasoning of others when representing and using data to make decisions.

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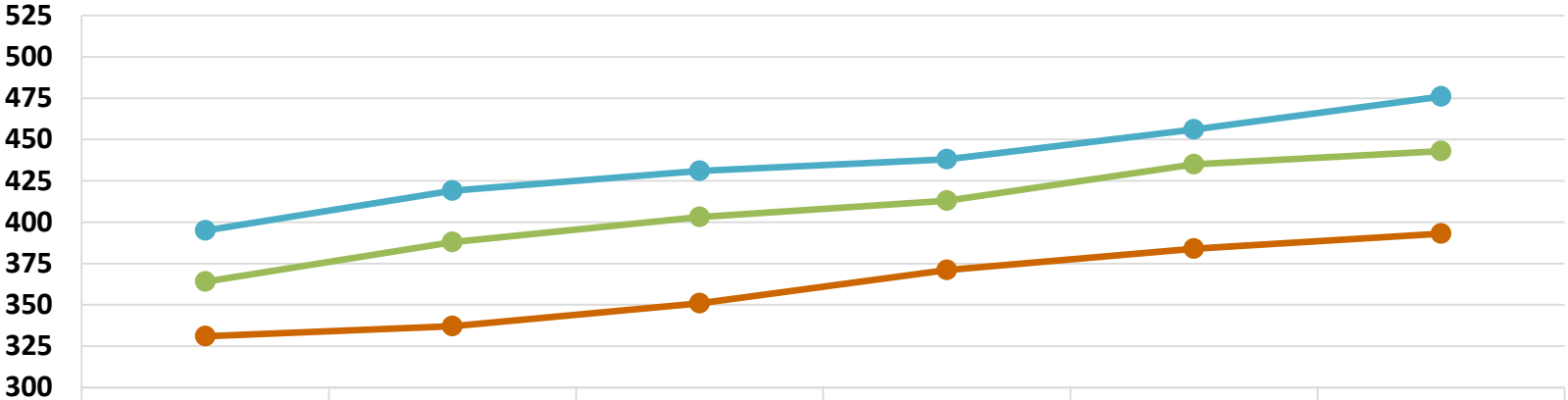
2017-18

English Language Arts and Mathematics

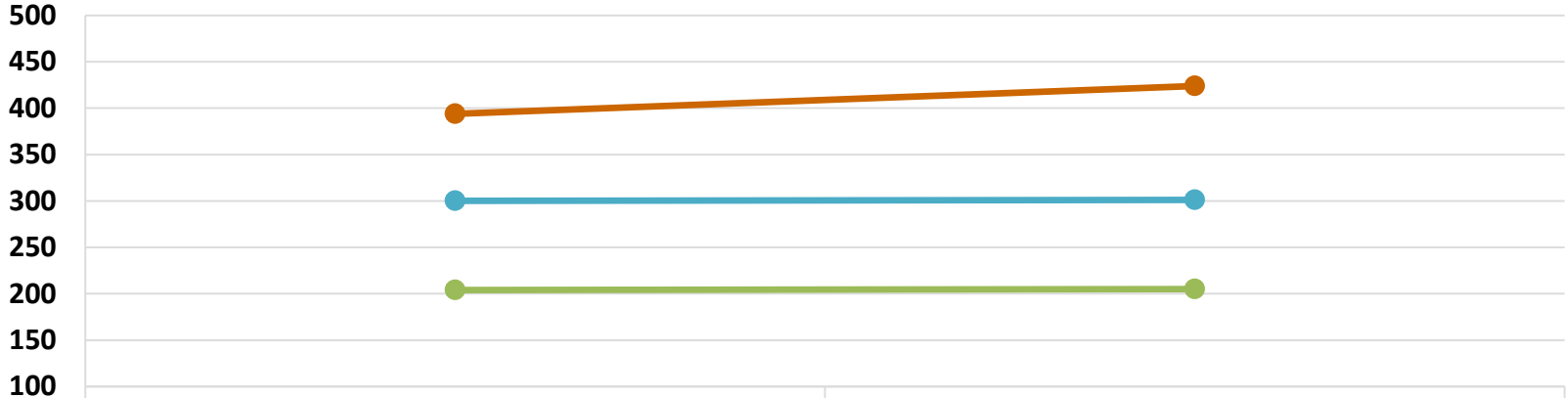
Cut Scores and Impact Data

English Language Arts Grade-Level Cut Scores



	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Basic	331	337	351	371	384	393
Proficient	364	388	403	413	435	443
Advanced	395	419	431	438	456	476

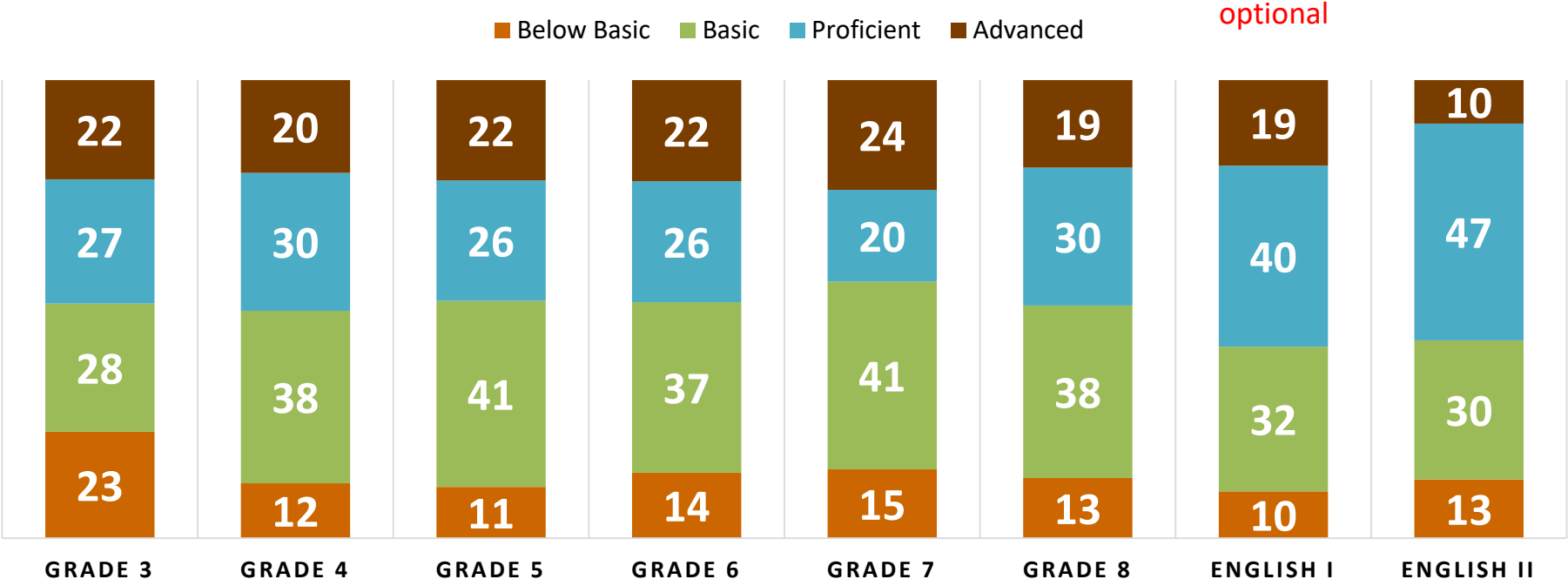
English Language Arts End-of-Course Cut Scores



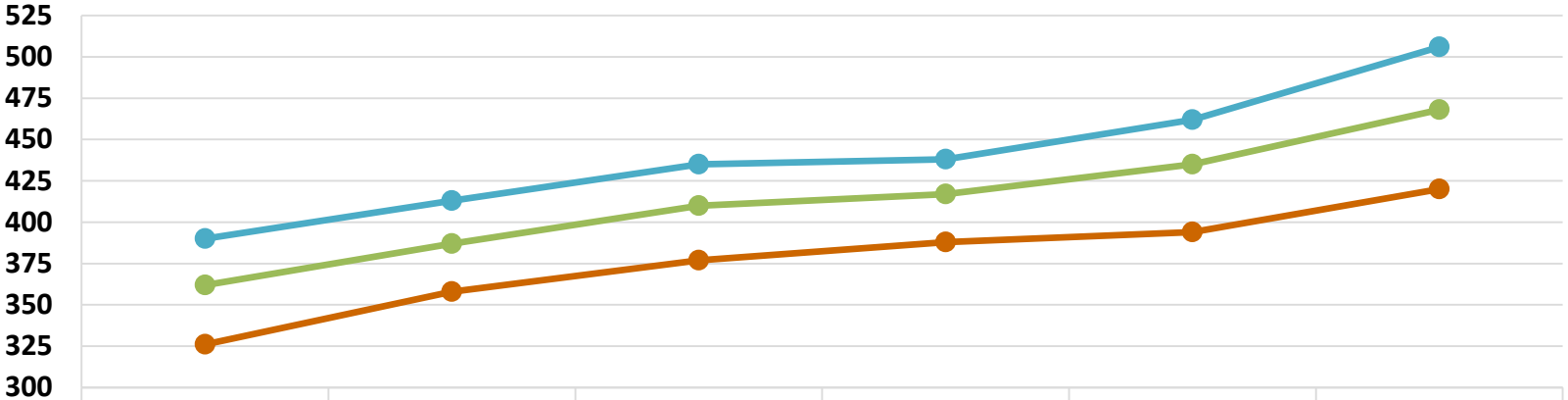
	English I	English II
Basic	204	205
Proficient	300	301
Advanced	394	424

English Language Arts Impact Data

optional

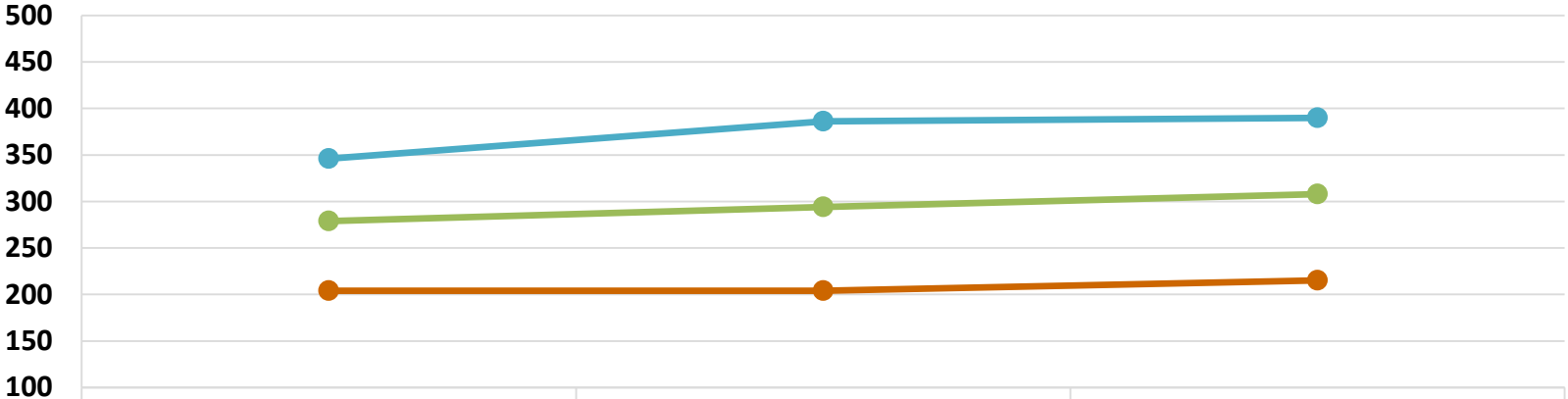


Mathematics Grade-Level Cut Scores



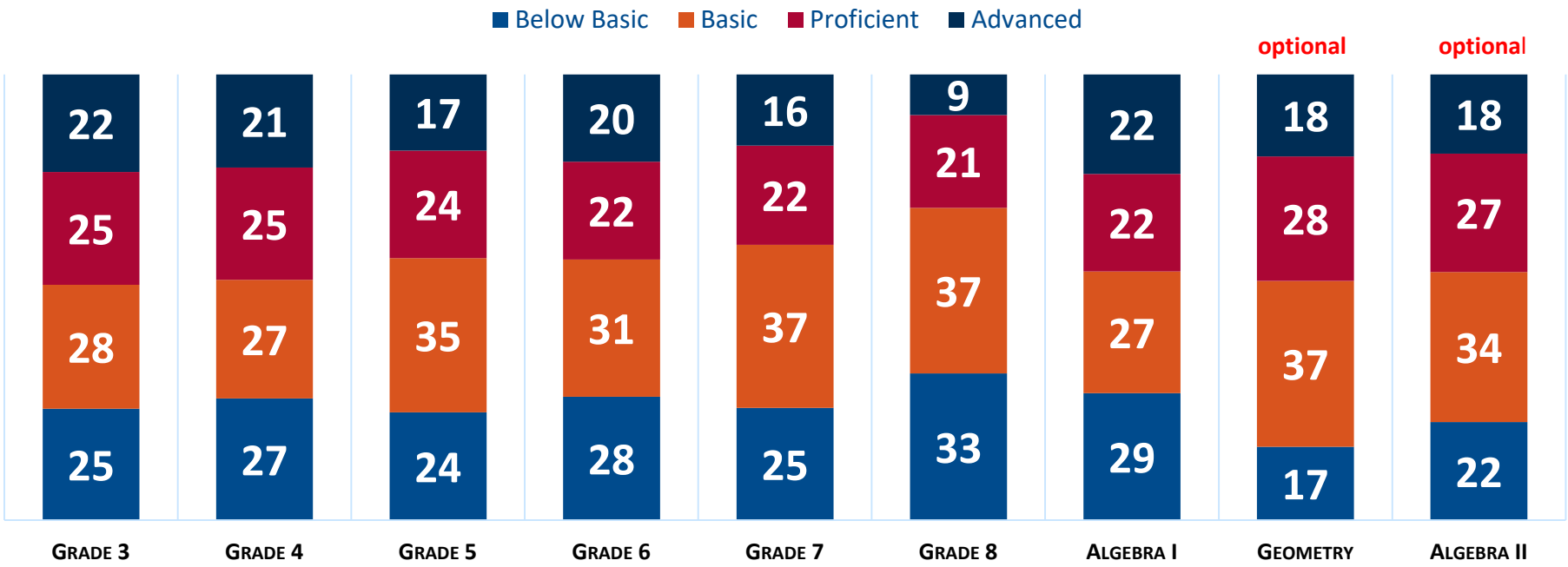
	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8
Basic	326	358	377	388	394	420
Proficient	362	387	410	417	435	468
Advanced	390	413	435	438	462	506

Mathematics End-of-Course Cut Scores



	Algebra I	Geometry	Algebra II
Basic	204	204	215
Proficient	279	294	308
Advanced	346	386	390

Mathematics Impact Data



MSIP 5

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Why do we test?

- **ESSA**
  - *Identification* of *buildings* for improvement
- **MSIP**
  - APR for *classification* of *districts*

Academic and Subgroup Achievement

Percentage of students scoring high or improving on ELA, math, science or social studies

- Exit plan from Hold Harmless also provides a transition for ELA and Math assessments
- Poverty marker remains FRL
- Science scores are unavailable because of 2017-18 field test

Significant Note

- 2017-18 English Language Arts and Mathematics scores will not be used to lower district classification. (Section 161.855, RSMo)

Academic and Subgroup Achievement

- Growth and Progress are immune to scale changes
- Status is measured against targets

Other APR Changes

- Graduation Rate will exclude G03 students
- CCR adjusted for G03
- Attendance: Partial Credit

Blaine Henningsen

Office of College and Career Readiness