



Minnesota Assessments and Benchmark Data

Kendra Olsen | Outreach Specialist- Statewide Testing

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Today's Agenda

- 1:30 – 2:15: Purpose of MCA, Scale Scores, and Assessment Data Resources
- 2:15 – 2:35: Benchmark Report Overview, Interpret Overall Data
- 2:35 – 3:05: Work time on Benchmark Data Analysis Handout, Formative assessments, and Learning Target Alignment with ALDs & Test Specs
- 3:05 - 3:15: Closing, share out from work time

Outcomes of today's session

By the end of this presentation, you will be able to...

- Better understand the purpose of the MCA and what it was designed to do
- Analyze the Benchmark Reports and use them as *one* piece of evidence when making decisions about curriculum and instruction

High Expectations for Teaching and Learning

- The knowledge and skills students need for career and college continues to evolve.
- Historically, when learning outcomes and curriculum are loosely defined, many children do not have access to rigorous curricula.
- Children of color, American Indian students, and students from low-income families have been the most disadvantaged by a lack of access to rigorous curricula.



High Expectations for Teaching and Learning (2)

- By defining the knowledge, skills, and abilities *all* students are expected to achieve, the [Minnesota Academic Standards](#) provide the basis for educational equity across the state.
- The standards outline broad statements about student learning, they are not a curriculum.
- **School districts determine *how* their students will meet these standards by developing courses, curriculum, and instructional materials.**





Ten Minnesota Commitments to Equity

1. Prioritize equity.

2. Start from within.

3. Measure what matters.

4. Go local.

5. Follow the money.

6. Start early.

7. Monitor implementation of standards.

8. Value people.

9. Improve conditions for learning.

10. Give students options.

How does Minnesota measure student access to rigorous curricula?

Minnesota Assessments

Standards-Based
Accountability Assessments

English Language Proficiency
Accountability Assessments

MCA

MTAS

ACCESS for ELLs

**Alternate
ACCESS for ELLs**

Subjects assessed in Minnesota Statewide

All public school students are assessed in the following subjects:

Subject area	When are they tested?
Reading	Grades 3-8, 10
Mathematics	Grades 3-8, 11
Science	Grades 5, 8, and once in high school

Minnesota Assessments: Designed from the Standards

This is the “series number”

Test Names	Standards	Year Adopted
Reading MCA-III and MTAS	Minnesota K–12 Academic Standards in English Language Arts	2010
Mathematics MCA-III and MTAS	Minnesota K–12 Academic Standards in Mathematics	2007
Science MCA-III and MTAS	Minnesota K–12 Academic Standards in Science	2009
ACCESS and Alternate ACCESS for ELLS	WIDA English Language Development Standards	2011

Purpose of the MCA

Turn and talk:

1. What was the MCA designed to do, and how should it be used when making decisions about students?
2. What was the MCA NOT designed to do?



What the MCA is designed to do

The MCA provides:

- A snapshot of student achievement toward the standards at state, district, and building levels.
- Valuable information for families about their child's academic achievement.
- Important data for teachers, schools, and districts to help guide instruction and evaluate program effectiveness.



What the MCA is designed to do

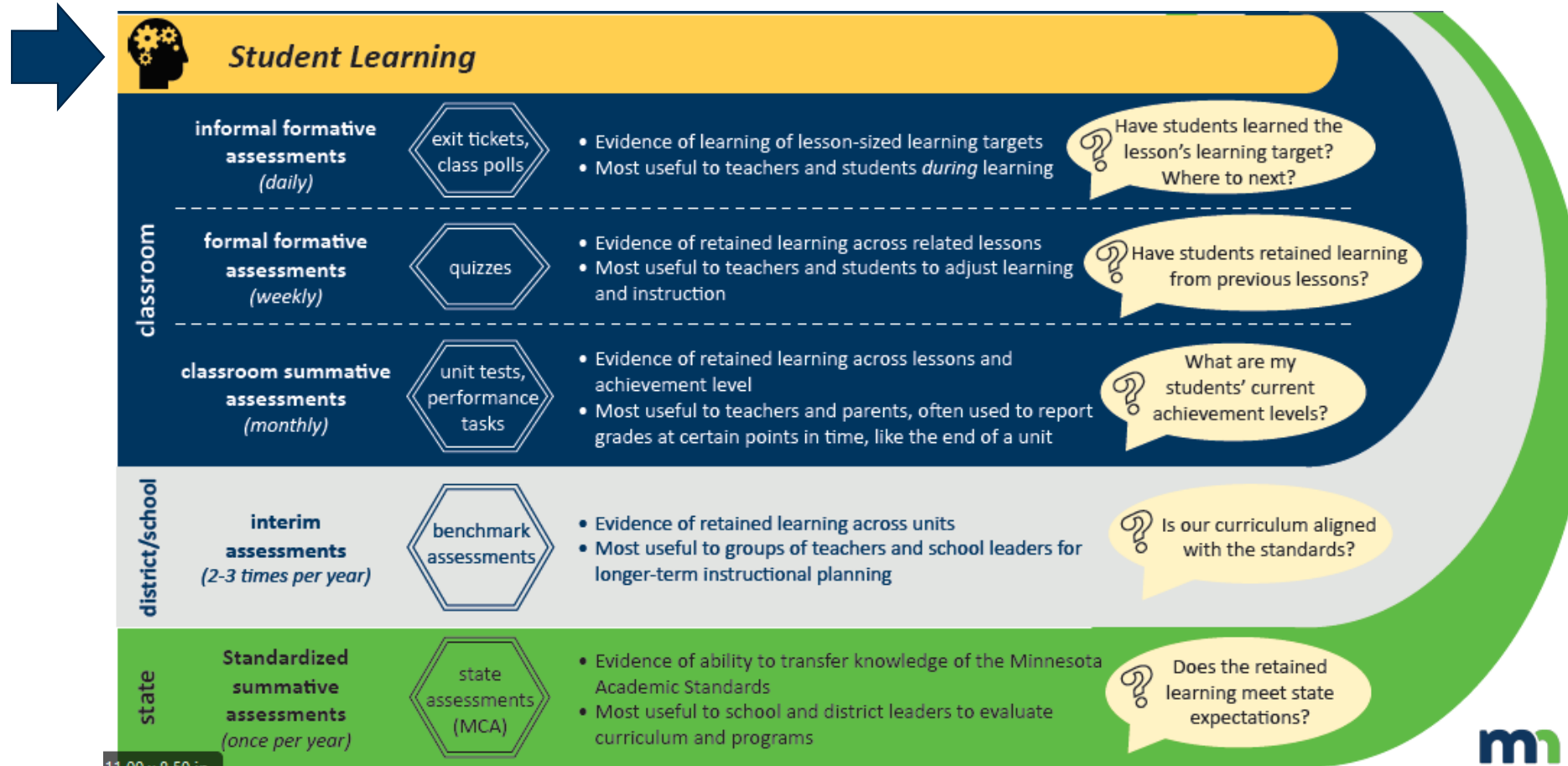
The MCA provides:

- A snapshot of student achievement toward the standards at state, district, and building levels.
 - Valuable information for families about their child's academic achievement.
 - Important data for teachers, schools, and districts to help guide instruction and evaluate program effectiveness.
- The MCA is a “summative assessment,” meaning it measures what students are expected to know and do at specific grade levels and in specific content areas.

A Comparison of Assessment Types

Type	Examples & Frequency	Evidence Produced	Level of Impact	Used by
Formative	<ul style="list-style-type: none">• Daily Checks for Understanding• Weekly Quizzes	<ul style="list-style-type: none">• Lesson sized learning targets• Retained learning across lessons and achievement level	Used to make immediate decisions about what students currently know, and where to go next	<ul style="list-style-type: none">• Students• Teachers in classroom
Interim	Midterm Exams that occur 2-3 times per year	Cumulative, longer-term learning retention	Evaluate curriculum effectiveness and used for macro-level planning	<ul style="list-style-type: none">• Groups of Teachers• School Leaders
Summative	<ul style="list-style-type: none">• Unit Tests or Performance Tasks• State Tests (MCA)	Proficiency of learning compared to the Minnesota Academic Standards and Achievement Level Descriptors	Used for accountability and evaluation of curriculum in regards to the standards	<ul style="list-style-type: none">• Groups of Teachers• School, District Leaders• Policy Makers

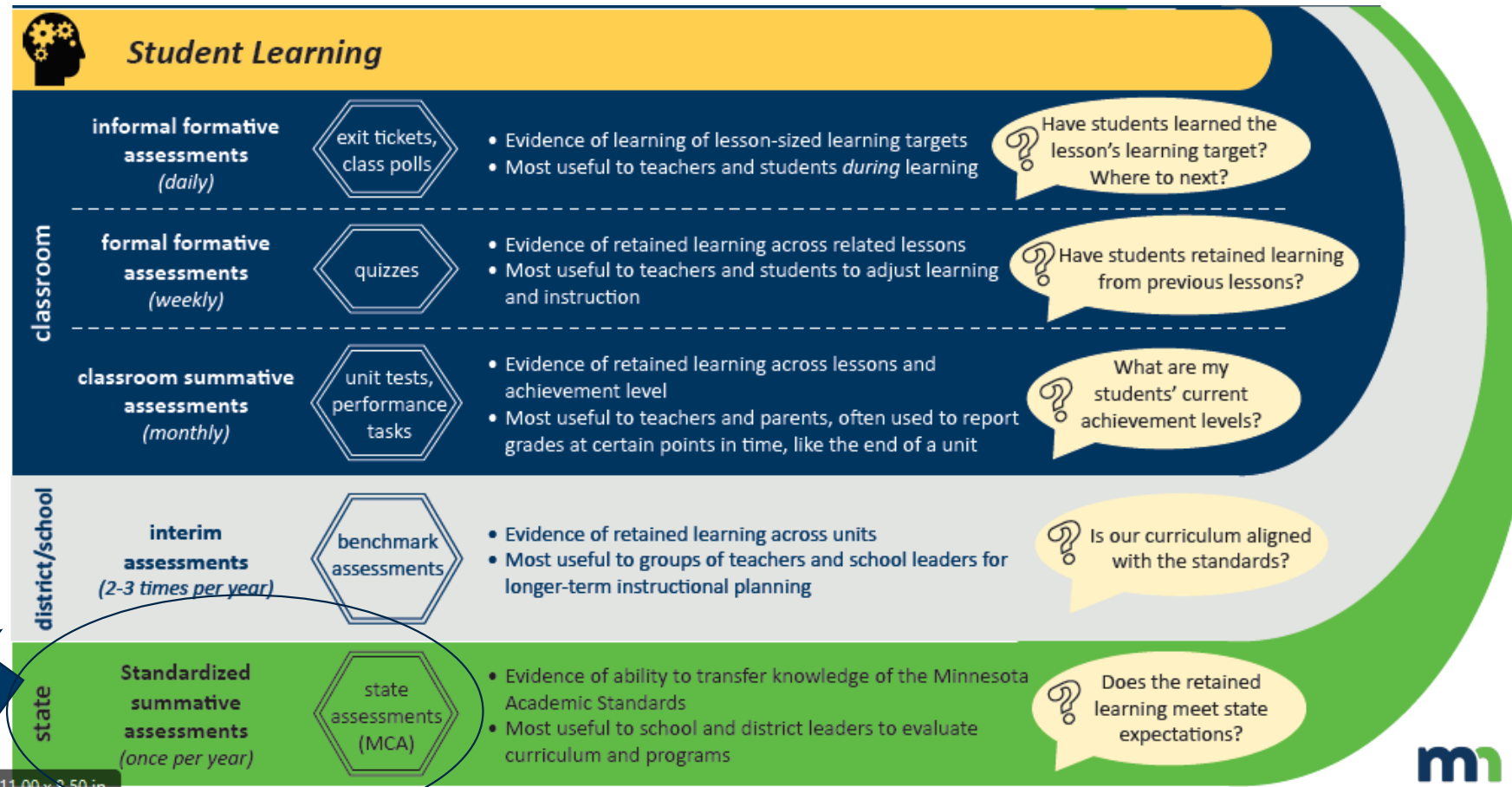
Which assessment type has the greatest impact on student learning?



<https://testing123.education.mn.gov/test/assess/formative/>

MCA data should be used alongside formative and interim assessment data when making decision that impact individual students.

The MCA is the furthest away from impacting student learning

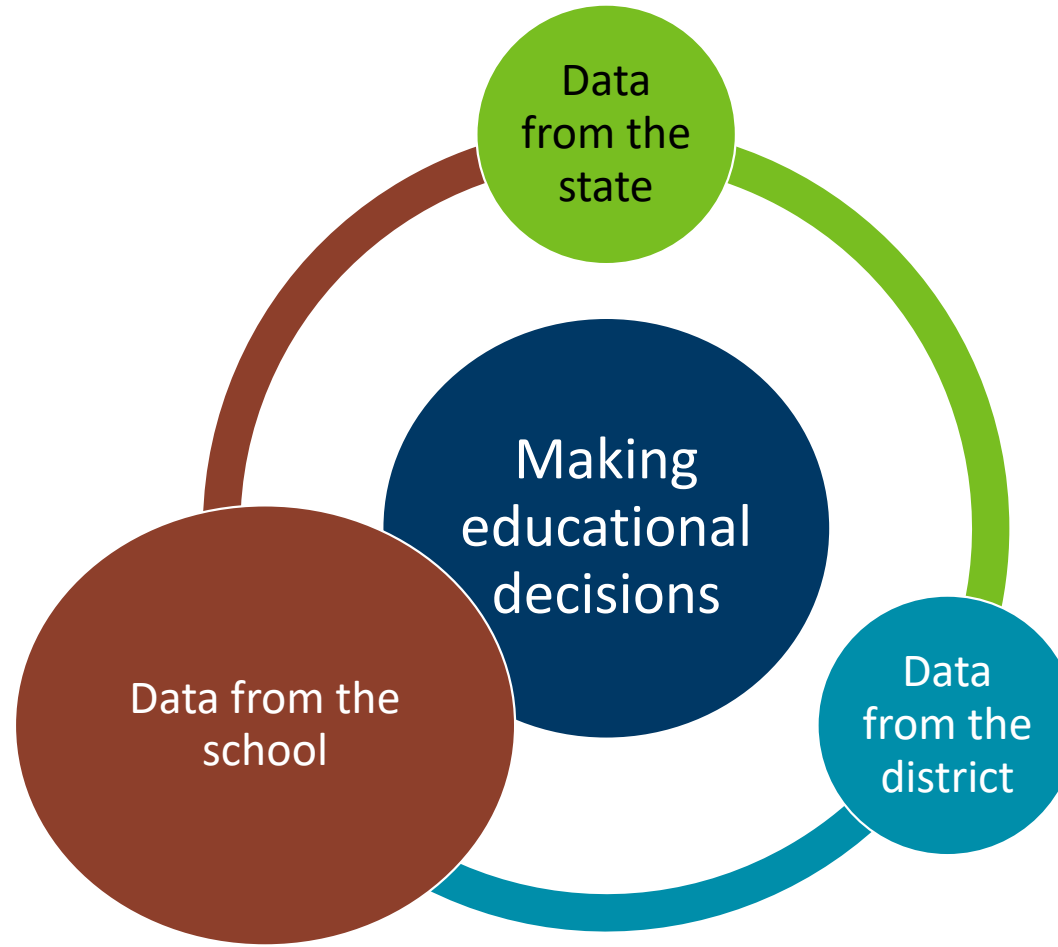


The MCA was NOT designed for...

MCA results should NOT be used as the only evidence to guide decisions like:

- Course placement
- Teacher performance reviews
- Charter school authorizer decisions
- Individual student growth
- Individual student grades reported on a report card

Minnesota Assessment Data: One Component



How should MCA Scores be Interpreted?

CAT Item Bank

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Scale Score Definitions

Theta (θ)

The estimate of “ability” (performance)
Theta range for Minnesota Assessments [-3 to 3]

Scale Score (SS)

The theta/ability estimate is transformed into the scale score via transformation
MCA-III scale scores are from X01-X99 (X = grade)

Achievement Level Descriptors (ALDs)

Describes the level of student achievement (Does not meet standards, Partially Meets Standards, Meets Standards, Exceeds Standards)

Scale Scores and ALDs

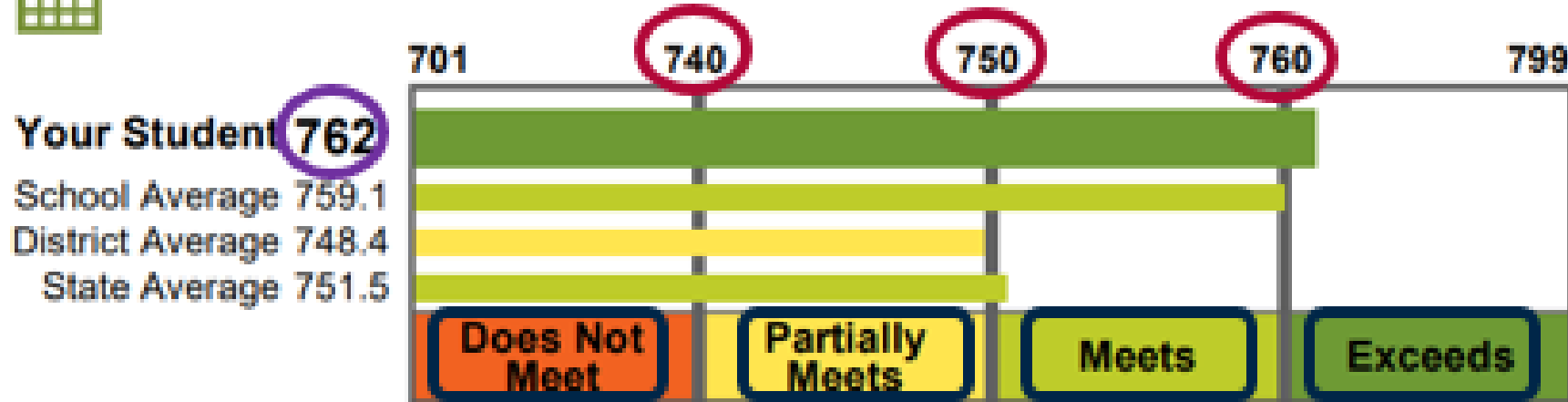
(Individual Student Report – ISR)

Scale Score (SS)
(theta transformed)

Cut Scores (based on the ALDs)



MATHEMATICS: FIRSTNAME'S OVERALL MCA-III RESULTS



Achievement Levels

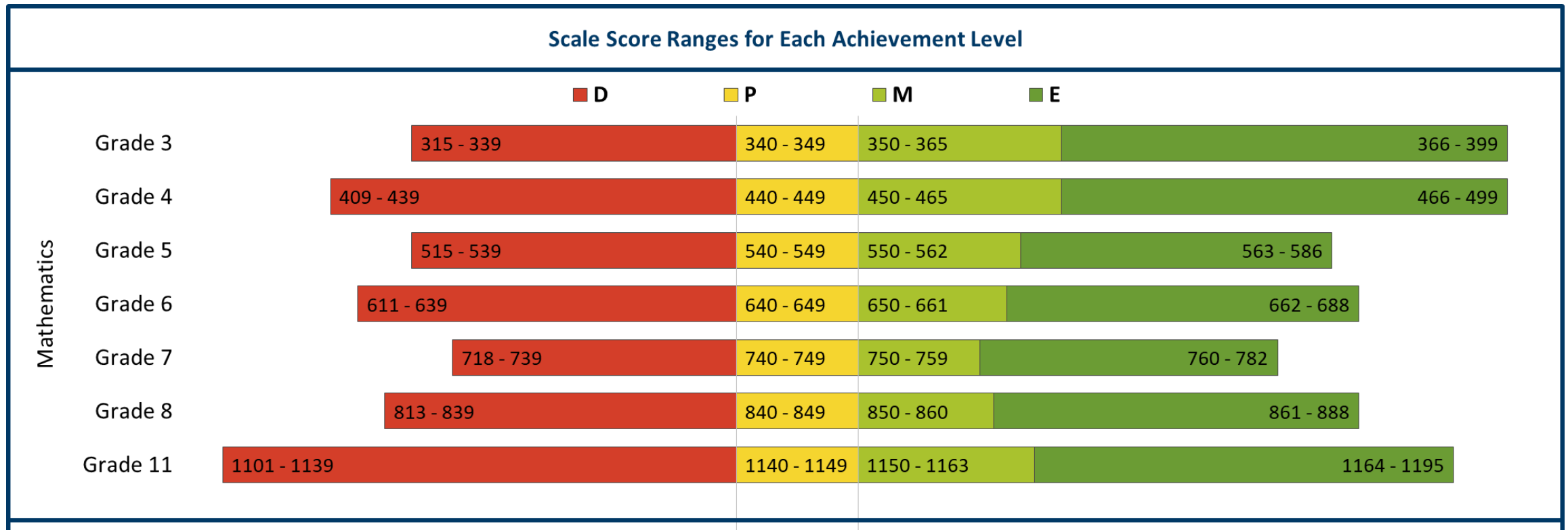
The first digit(s) represent the tested grade.

762

The last two digits represent the score the student earned.

Scale Scores Continued

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Understanding MCA Scale Scores



Scale Scores Continued

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Understanding MCA Scale Scores

Scale Score Ranges for Each Achievement Level				
Reading	Grade 3	301 - 339	340 - 349	350 - 373 374 - 399
	Grade 4	411 - 439	440 - 449	450 - 465 466 - 490
	Grade 5	517 - 539	540 - 549	550 - 566 567 - 591
	Grade 6	606 - 639	640 - 649	650 - 666 667 - 699
	Grade 7	703 - 739	740 - 749	750 - 766 767 - 798
	Grade 8	802 - 839	840 - 849	850 - 866 867 - 898
	Grade 10	1012 - 1039	1040 - 1049	1050 - 1063 1064 - 1094

Appropriate use of Scale Scores

- MCA scale scores are based on grade-level specific content

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Where do Scale Scores Come from?

Appropriate use of Scale Scores

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- In technical terms, this means the scores are not “vertically aligned”

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Where do Scale Scores Come from?

Appropriate use of Scale Scores

- MCA scale scores are based on grade-level specific content
- In technical terms, this means the scores are not “vertically aligned”
- Scale scores should never be compared across the grades for a particular student, especially when determining if a student has no growth, remained the same, or improved.

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Where do Scale Scores Come from?

Appropriate use of Scale Scores

- MCA scale scores are based on grade-level specific content
- In technical terms, this means the scores are not “vertically aligned”
- Scale scores should never be compared across the grades for a particular student, especially when determining if a student has no growth, remained the same, or improved.
- The achievement levels CAN be used to assess whether student growth across grades is demonstrated.

<https://testing123.education.mn.gov/test/analyze/report/> > Resources > Where do Scale Scores Come from?

New standards are adopted

Test Development Process at MDE

Committees Write Test Specs

Educators Review New Test Questions

Committees Review New Test Questions for Cultural Sensitivity

Students Take Field Test Questions

MDE Calculates Scoring & Equating

Students Take Operational Test

MDE Builds Operational Test

Educators Review Field Test Data

Standard Setting; Achievement Level Cut Scores Determined



MCA Test Structure

Subject and grade level specific Documents
Created from Test Specs and Test Blueprint

Grade Level Assessment Details

Reading	Mathematics	Science
Grade 3	Grade 3	N/A
Grade 4	Grade 4	N/A
Grade 5	Grade 5	Grade 5
Grade 6	Grade 6	N/A
Grade 7	Grade 7	N/A
Grade 8	Grade 8	Grade 8
High School	High School	High School



Test data in the classroom: Assessing, analyzing and taking action

Plan and Teach ▾

1. Assess ▾

2. Analyze ▾

3. Take Action ▾

Standards Based Learning Goals

Success Criteria

MCA Test Structure

MCA Content Resources

Released MCA Questions

ce for Teachers
reliable data use it to eliminate
the classroom instruction. This
e teachers with relevant

<https://testing123.education.mn.gov/test/plan/structure/>

MCA Test Structure- Grade 3 Math Example

Online Adaptive MCA-III Grade 3 Minimum and Maximum Item Counts by Standard

Strand	Range of Items per Strand	Standard	Number of Benchmarks per Standard	Range of Items per Standard
1 - Number & Operation	18-20	3.1.1	5	4-6
		3.1.2	5	8-10
		3.1.3	3	5-7
2 – Algebra	6-8	3.2.1	1	2-3
		3.2.2	2	4-5
3 – Geometry & Measurement	10-13	3.3.1	2	3-4
		3.3.2	3	3-4
		3.3.3	4	4-6
4 – Data Analysis & Probability	6-7	3.4.1	1	6-7

- Information is from test specs
- Useful for planning Scope & Sequence, Pacing Calendars, curriculum alignment, etc.
- Caution: This is only *one* resource, it is not a curriculum.

<https://testing123.education.mn.gov/test/plan/structure/>

Webb's Depth of Knowledge

Level 1	Level 2	Level 3	Level 4
Recall	Skill/Concept	Strategic Thinking	Extended Thinking
A Level 1 item specifies the operation or method of solution and the student is required to carry it out. A well-defined and straight algorithmic procedure is considered to be at this level.	A Level 2 item requires students to choose the operation or method of solution and then solve the problem. These questions are commonly found in textbooks.	A Level 3 item may be solved using routine skills but the student is not cued or prompted as to which skills to use.	Level 4 items are best assessed in the classroom, where the constraints of standardized testing are not a factor.

<https://testing123.education.mn.gov/test/plan/res/index.htm>

MCA Test Structure (2)

Minimum Item Count Targets by DOK level

Grades	Level 1	Level 2	Level 3
3-8, 11	20%	30%	5%

Educator committees use Depth of Knowledge (DOK) levels to assign cognitive difficulty levels to test questions.

<https://testing123.education.mn.gov/test/plan/structure/>

Overview of Reports

Levels of Data - Levels of Use



Overview of Reports

Results file or Report	Level of Data	Format and Purpose	Location	Availability
On-Demand Reports (preliminary results)	Student-level	PDF download, initial roster of all students score and achievement level	PearsonAccess Next > On-Demand Reports	60 minutes after testing
Final Roster Report	Student-level	PDF download, final roster of all students score and achievement level	PearsonAccess Next > Published Reports	Late summer
Individual Student Reports (ISRs)	Student-level	Districts receive paper copies to distribute to parents, PDF available for download	PearsonAccess Next > Published Reports	Late summer
School Student Report (SSR)	Student-level	Excel file download	MDE Data Center > Secure Reports	Late summer
District Student Report (DSR)	Student-level	Excel file download	MDE Data Center > Secure Reports	Late summer
Test Results Summary Files	School and district	Excel file download	MDE Data Center > Secure Reports	Late summer
Benchmark Reports by grade and subject	School and district	PDF download	PearsonAccess Next > Published Reports	Early fall

Accessing Reports from MDE

Minnesota Report Card

- MDE > Data Center> Minnesota Report Card
- Public data at the school, district, and state levels

Public Access

Accountability and Assessment

- MDE Public Files, summary data, suppression rules applied

MDE Secure Reports

- MDE > Data Center>Secure Reports>Assessment Secure Reports

PearsonAccess Next Reports

- PearsonAccess Next > Reports

Historical Reports

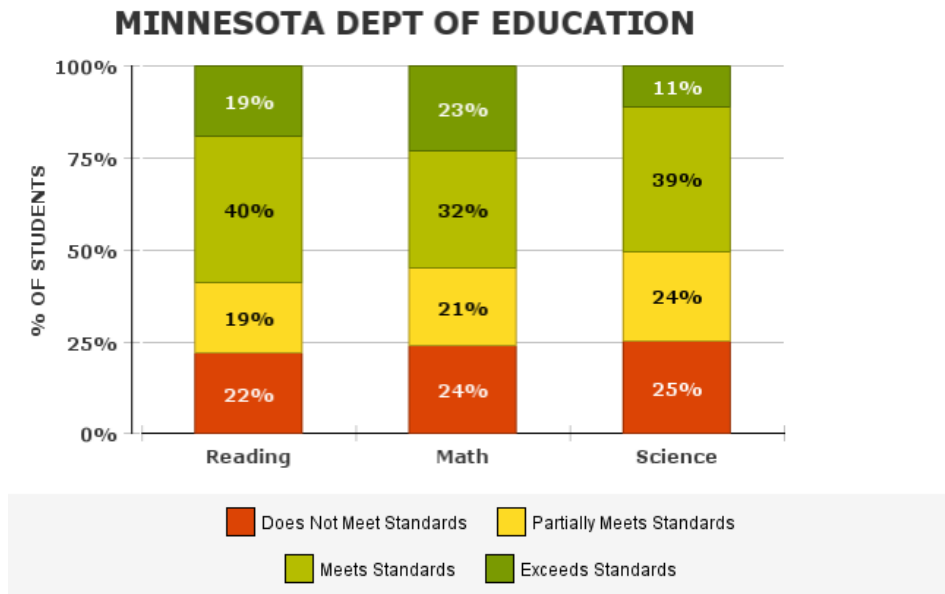
- PA Next > Select Year and Test > Reports > Longitudinal Reports > Organization Name
- Provides assessment history for individual students currently or previously enrolled in the district
- [Historical Student Data User Guide](#)

The screenshot displays the PearsonAccessnext Minnesota interface. At the top, there's a header with 'PearsonAccessnext' and 'Minnesota'. Below this is a 'Tasks for Students' section with a button for 'View Historical Student Data'. The main content area is divided into 'STUDENTS' and 'ASSESSMENTS'. Under 'STUDENTS', a list shows 'ANDERSON, CONTROL J (5555000000380)' selected. Under 'ASSESSMENTS', a table lists various tests for Anderson, Control J, including MTAS 2018, MTAS 2016, MCA 2017, and OLPA 2016-2017. The MTAS 2018 entry is expanded, showing 'Test Details' and 'Performance Details'.

Administration	Organization Name	Subject	Grade	Score	Achievement Level
MTAS 2018	CFL ELEMENTARY 101 (5555-09-101)	Reading	06	210	Exceeds Standards
Test Details					
District: CFL CONTROL DISTRICT 5555 (5555-09-000)					
Total Points Earned: 27		Total Points Possible: 27			
Performance Details					
				Points Earned	Points Possible
		Extended Standard 1		6	6
		Extended Standard 2		9	9
		Extended Standard 3		9	9
		Extended Standard 4		3	3
MTAS 2016	CFL ELEMENTARY 101 (5555-09-101)	Math	06	204	Exceeds Standards
MCA 2017	CFL ELEMENTARY 101 (5555-09-101)	Math	06	NA	Not Attempted
OLPA 2016-2017	CFL ELEMENTARY 101 (5555-09-101)	Math	06	186	Does Not Meet Standards

Longitudinal Reports

- PA Next > Select Year and Test > Reports > Longitudinal Reports > Organization Name
- Provide a graphical display of historical results to compare across years, schools, and student groups
- Overall and average scale score, achievement level, strand performance detail and student groups



Benchmark Report Overview

Objectives of the Benchmark Reports:

- A “System Check” for districts and schools
 - *How well are our systems servicing student learning?*
- Provide information about school or district performance on each benchmark that can more easily be connected back to the Minnesota academic standards.

What are benchmarks?

The purpose of benchmarks is to provide details about "the academic knowledge and skills that schools must offer and students must achieve to satisfactorily complete" the standards (Minn. Stat. § 120B.023 (2008)).

Benchmarks are intended to "inform and guide parents, teachers, school districts and other interested persons and for use in developing tests consistent with the benchmarks" (Minn. Stat. § 120B.023 (2008)).

What are benchmarks?

- Each of the Minnesota Academic Standards are divided into benchmarks.
- Each item on the MCA is aligned to an appropriate benchmark.
- Some benchmarks are not assessed on the MCA in a given year, and some can be assessed only in the classroom and not on a standardized assessment.
- However, all tests meet the required “blueprints,” or requirements, specified in the test specifications.

1. Overall School/District Performance

- Number of all students tested with valid and reportable scores
- Percent of students at each achievement level
- Percent proficient is total “Meets” and “Exceeds”

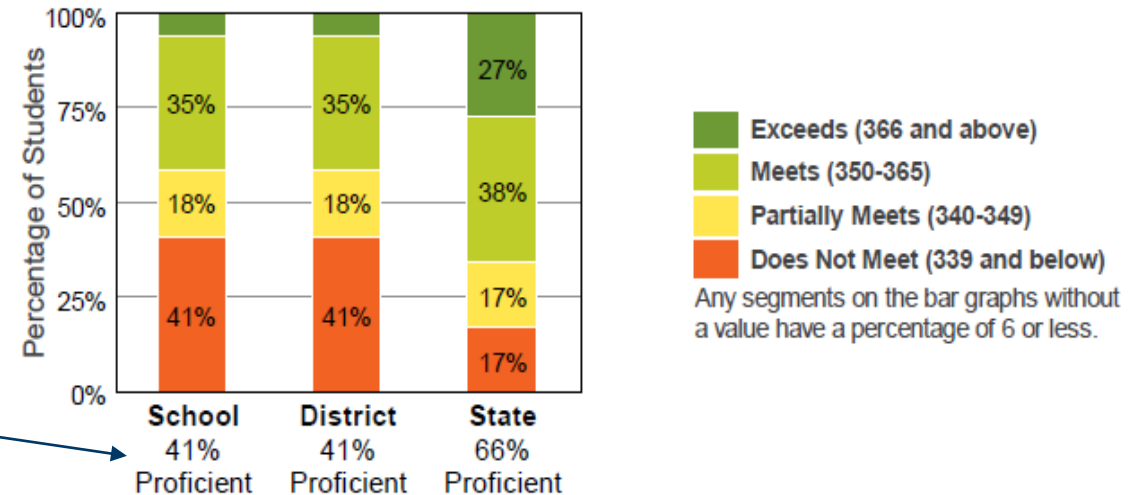
SPRING 2019 GRADE 3 MATHEMATICS MCA-III

New report design for 2019! View the [Mathematics Benchmark Report "How To" Quick Guide](#) for information about how you can use this report. (PearsonAccess Next > Reporting Resources > Additional Reporting Resources)

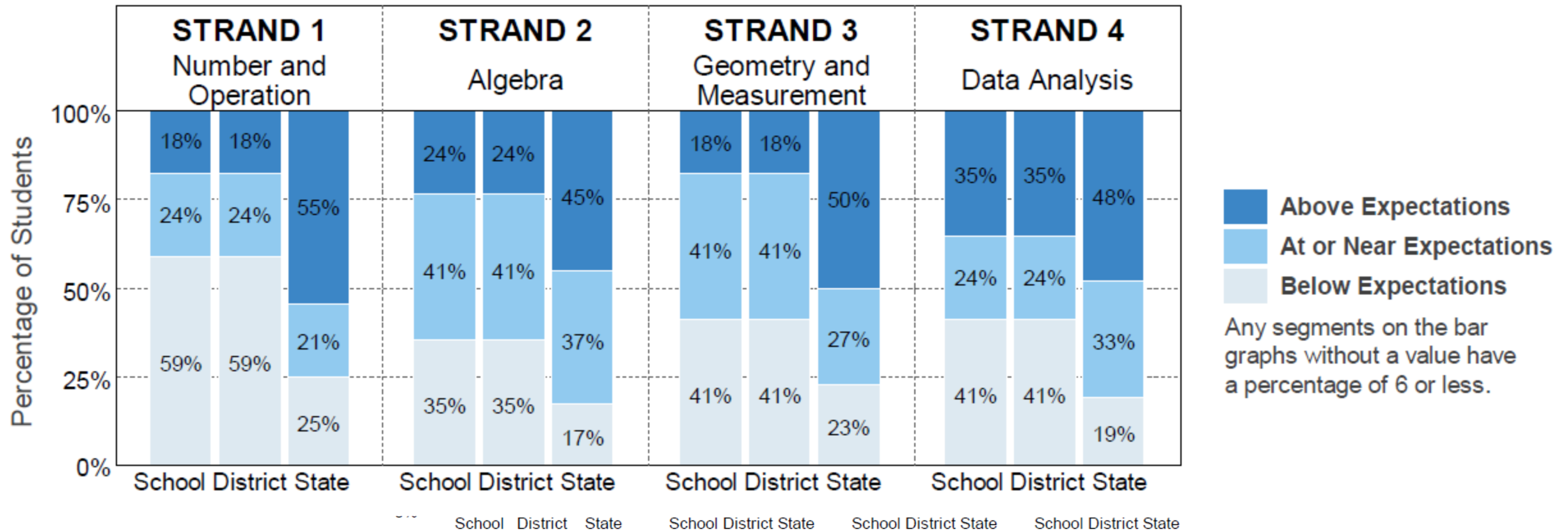
GRADE 3 MATHEMATICS PERFORMANCE

Number of grade 3 students in Mathematics with valid scores for your school: 17

The graph shows the percentage of students in each achievement level for your school, district, and the state for the grade 3 Mathematics MCA-III. The percent proficient under each bar in the graph is the percentage of students in the "Meets" and "Exceeds" achievement levels.



2. School/District Performance



- Expectation is defined as performance on each strand/substrand compared to “Meets” level cut score

3. Benchmark Performance Symbols

Performance Symbols are determined by calculating:


- *average student performance on test questions aligned to each benchmark*


Compared to:


- *the “Meets” achievement level cut score **expected performance***


GRADE 3 MATHEMATICS PERFORMANCE BY BENCHMARK

School performance on each benchmark is compared at the "Meets" achievement level cut score. Performance on each benchmark is calculated by comparing school performance on a benchmark to the expected performance on a benchmark that would be achieved at the "Meets" achievement level cut score.



 School performance on this benchmark is **less than** the "Meets" achievement level.

 School performance on this benchmark is **similar to** the "Meets" achievement level.

 School performance on this benchmark is **greater than** the "Meets" achievement level.

 less than 20 student responses on a benchmark

STRAND 1: NUMBER AND OPERATION

Compared to "Meets" Achievement Level	Benchmark
	Standard 3.1.2 Add and subtract multi-digit whole numbers; represent multiplication and division in various ways; solve real-world and mathematical problems using arithmetic.
★	3.1.2.1 Add and subtract multi-digit numbers, using efficient and generalizable procedures based on knowledge of place value, including standard algorithms.
	3.1.2.2 Use addition and subtraction to solve real-world and mathematical problems involving whole numbers. Use various strategies, including the relationship between addition and subtraction, the use of technology, and the context of the problem to assess the reasonableness of results. For example: The calculation $117 - 83 = 34$ can be checked by adding 83 and 34.
★	3.1.2.3 Represent multiplication facts by using a variety of approaches, such as repeated addition, equal-sized groups, arrays, area models, equal jumps on a number line and skip counting. Represent division facts by using a variety of approaches, such as repeated subtraction, equal sharing and forming equal groups. Recognize the relationship between multiplication and division.
	3.1.2.4 Solve real-world and mathematical problems involving multiplication and division, including both "how many in each group" and "how many groups" division problems. For example: You have 27 people and 9 tables. If each table seats the same number of people, how many people will you put at each table? Another example: If you have 27 people and tables that will hold 9 people, how many tables will you need?

Caveats to keep in mind

The performance symbols only compare to the Meets cut score, not a *partial* or *exceeds* cut score like the scale scores calculated at the student level.

The calculation for the overall performance (calculate individual student scores first and then aggregate to the organization level) and benchmark (only calculated at the organization level) are different, so benchmark performance indicators and overall achievement levels are not directly comparable.



School performance on this benchmark is less than the "Meets" achievement level.



School performance on this benchmark is similar to the "Meets" achievement level.



School performance on this benchmark is greater than the "Meets" achievement level.

Cautions with interpretation

- Benchmark performance indicators and symbols **do not** correspond to overall achievement or performance levels because they are calculated differently.

Does Not Meet the Standards	Partially Meets the Standards	Meets the Standards	Exceeds the Standards
Students at this level succeed at few of the most fundamental skills for the Minnesota K-12 Academic Standards.	Students at this level partially meet the subject's skills for the Minnesota K-12 Academic Standards.	Students at this level meet the subject's skills for the Minnesota K-12 Academic Standards.	Students at this level exceed the subject's skills for the Minnesota K-12 Academic Standards.

- The color/shape of each marker does not reflect benchmark difficulty.



School performance on this benchmark is less than the "Meets" achievement level.



School performance on this benchmark is similar to the "Meets" achievement level.



School performance on this benchmark is greater than the "Meets" achievement level.

Resources to use with Reports

Keep these resources open on your computer:

1. [Achievement Level Descriptor Maps](#) (testing123.education.mn.gov > Plan and Teach > Success Criteria)
2. [DOK](#)
3. [MCA test specifications](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Test Specifications)
4. [Released Items and Passage Sets](#) *for Reading and Mathematics only* (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Released items and Passage Sets)

Achievement Level Descriptors (ALDs)

- **ALDs outline the appropriate achievement expectations for each content strand from the Minnesota Academic Standards for every subject and grade level.**

Does Not Meet the Standards	Partially Meets the Standards	Meets the Standards	Exceeds the Standards
Students at this level succeed at few of the most fundamental skills for the Minnesota K-12 Academic Standards.	Students at this level partially meet the subject's skills for the Minnesota K-12 Academic Standards.	Students at this level meet the subject's skills for the Minnesota K-12 Academic Standards.	Students at this level exceed the subject's skills for the Minnesota K-12 Academic Standards.

<https://testing123.education.mn.gov/test/plan/success/> > ALDs

How to Use Report with ALDs

Example Benchmark:



3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.

For example: Parts of a shape ($\frac{3}{4}$ of a pie), parts of a set (3 out of 4 people), and measurements ($\frac{3}{4}$ of an inch).

Test ALD Map:

Strand	Does Not Meet A student at this level of mathematics succeeds at few of the most fundamental mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:	Partially Meets A student at this level of mathematics partially meets the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:	Meets A student at this level of mathematics meets the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated may include:	Exceeds A student at this level of mathematics exceeds the mathematics skills of the Minnesota Academic Standards. Some of the skills demonstrated very consistently may include:
Number & Operation	<ul style="list-style-type: none"> Represents whole numbers with words Adds multi-digit whole numbers Matches fractions with correct area model 	<ul style="list-style-type: none"> Represents whole numbers up to 1,000 using expanded notations Compares whole numbers up to 100,000 Subtracts multi-digit whole numbers without regrouping Knows common multiplication and division facts (2s, 5s, 10s) Writes fractions for a given representation, including number line 	<ul style="list-style-type: none"> Compares and represents whole numbers up to 100,000 Solves real-world and mathematical problems using addition and subtraction Represents multiplication and division in various ways (reference MN Academic Standards 3.1.2.3) Compares and orders fractions with common denominators 	<ul style="list-style-type: none"> Solves real-world and mathematical problems using addition, subtraction, and multiplication Understands that the size of a fractional part is relative to the size of the whole

DOK Resources

Webb's Depth of Knowledge is only one method for understanding but the one used for the MCA-III.

Level 1	Level 2	Level 3	Level 4
Recall	Skill/Concept	Strategic Thinking	Extended Thinking
<p>A Level 1 item specifies the operation or method of solution and the student is required to carry it out. A well-defined and straight algorithmic procedure is considered to be at this level.</p> <p>Items may require a student to:</p> <ul style="list-style-type: none"> recall of information, such as a fact, definition, term or simple procedure perform a simple algorithm or applying a formula 	<p>A Level 2 item requires students to choose the operation or method of solution and then solve the problem. These questions are commonly found in textbooks.</p> <p>Item may require a student to:</p> <ul style="list-style-type: none"> engage in some mental processing beyond a habitual response make some decisions as to how to approach a problem or activity read or interpret information from a graph 	<p>A Level 3 item may be solved using routine skills but the student is not cued or prompted as to which skills to use.</p> <p>Items may require a student to:</p> <ul style="list-style-type: none"> reason, plan or use evidence to solve the problem explain their thinking 	<p>Level 4 items are best assessed in the classroom, where the constraints of standardized testing are not a factor.</p> <p>Items may require a student to:</p> <ul style="list-style-type: none"> engage in complex reasoning, planning, developing and thinking have an extended period of time to answer the item

September 2017

How to Use Report with Released Math and Reading Items

Example Benchmark:



3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.

For example: Parts of a shape ($\frac{3}{4}$ of a pie), parts of a set (3 out of 4 people), and measurements ($\frac{3}{4}$ of an inch).

Search for
benchmark in
Released Items:

<https://testing123.education.mn.gov/test/plan/ques/index.htm>

Subject
Math ▼

Grade
3 ▼

Strand
All Strands ▼

Item Type
All Item Types ▼

DOK Level
All DOK Levels ▼

Calculator Usage
All Calculator Usages ▼

Reset Search

[MDE > Districts, Schools and Educators > Statewide Testing > Released Items and Passage Sets](#)

Released Items and Passage Sets

Released items are items that were previously used on the Minnesota Comprehensive Assessments (MCA).

Educators may choose to use them to better understand how the MCA is aligned to the Minnesota K–12 Academic Standards and how the items are written to reflect the rigor and complexity of these standards. The released content, data table, and rationales can be used by educators to explore examples of questions that evaluate the knowledge and skills expected in the standards.

Because this is a small group of items, not every item type or benchmark is represented. However, they do provide a sampling of how the content standards are assessed on the MCA. To get the most out of the information presented here, please start by reading the [User Guide for Released Items with Data Tables](#).

To select items, use the drop-down menus on the left.

Search:

Sort by ID number, Strand, SSB, Key, Item Type, DOK, or Calculator Usage by selecting the heading below:

ID	Strand	SSB	Key	Item Type	DOK	Calculator Usage
235502	Number & Operation	3.1.1.1	Rubric	TE	II	CL
230020	Number & Operation	3.1.1.5	D	MC	I	CL
235700	Number & Operation	3.1.2.2	183	TE	II	CL
234944	Number & Operation	3.1.3.1	B	MC	I	CL
236083	Number & Operation	3.1.3.2	C	MC	II	CL

How to Use Report with Released Math and Reading Items

Example Benchmark:

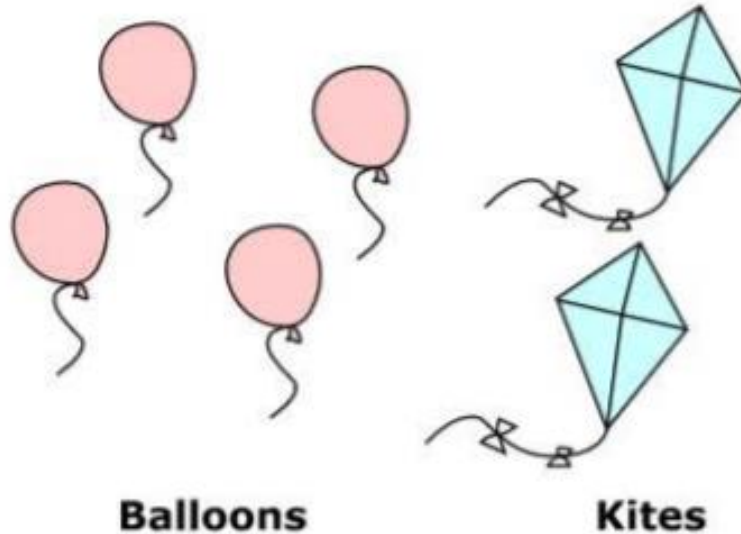


3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.

For example: Parts of a shape ($\frac{3}{4}$ of a pie), parts of a set (3 out of 4 people), and measurements ($\frac{3}{4}$ of an inch).

Lila sees balloons and kites at the park.



What fraction of the things she sees are balloons?

- ☐ A. $\frac{2}{4}$
- ☐ B. $\frac{4}{6}$
- ☐ C. $\frac{6}{4}$
- ☐ D. $\frac{4}{2}$

How to Use Report with Released Math and Reading Items

Example Benchmark:

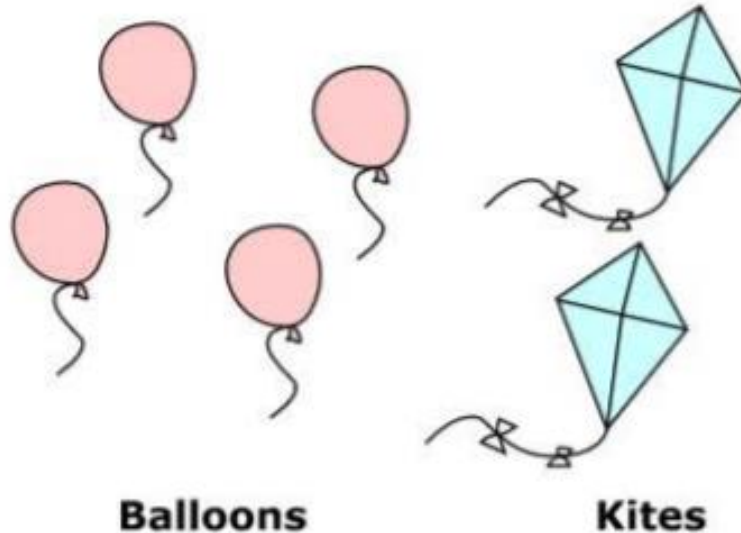


3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.

For example: Parts of a shape ($\frac{3}{4}$ of a pie), parts of a set (3 out of 4 people), and measurements ($\frac{3}{4}$ of an inch).

Lila sees balloons and kites at the park.



What fraction of the things she sees are balloons?

☐ A. $\frac{2}{4}$

☒ B. $\frac{4}{6}$

☐ C. $\frac{6}{4}$

☐ D. $\frac{4}{2}$

Rationale and Response Data

RATIONALE A	Proportion of 2 kites/4 balloons
RATIONALE B	Correct. 4 balloons/6 objects
RATIONALE C	Reciprocal of correct fraction
RATIONALE D	Proportion of 4 balloons/2 kites

Answer Selected	Percent of Students Who Selected It
A	13%
B	74%
C	3%
D	10%

Model How to Use Report with Test Specs



3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line, or distances on a number line.

For example: Parts of a shape ($\frac{3}{4}$ of a pie), parts of a set (3 out of 4 people), and measurements ($\frac{3}{4}$ of an inch).

Test Specs:

Benchmarks

3.1.3.1

Read and write fractions with words and symbols. Recognize that fractions can be used to represent parts of a whole, parts of a set, points on a number line or distances on a number line.

Item Specifications

- Denominators are limited to 2, 3, 4, 6 and 8
- Sets may contain no more than 12 objects
- Vocabulary allowed in items: fraction, plot, locate, point

Dig into Benchmark Data

Materials You Need: Benchmark report, Benchmark Analysis Handout, [Achievement Level Descriptor Maps](#), [MCA test specifications](#), [Released Items and Passage Sets](#)

Directions: (20 minutes)

1. Preview the questions on your handout
2. Individually reflect on questions with your benchmark report
3. In pairs or with table group, discuss your responses to the questions
4. Prepare to share out 1-2 takeaways from your reflections with the whole group

Then: If you finish early, take a look at more benchmarks that you would like to dig deeper on. Compare them to the Achievement Level Descriptors for that benchmark

Share with whole group:

After discussing with your planning group, what are some ways you plan on using this data? What are your next steps?

Performance Symbol Calculations Explained

Benchmark Report Calculations: 3 Steps

Benchmark performance indicators for a school (or district) report are determined by the following:

1. The average performance for students within the school (or district) on test questions aligned to each benchmark is calculated
2. A “Meets Range” is calculated based on the performance *expected* of students on each benchmark. This is based on students who perform at the “Meets” achievement level cut score.
3. The value from step 1 is compared to the “Meets Range” values to determine if student performance at the school is less than, similar to, or greater than the “Meets” achievement level expectation.

1. Student performance calculation

School or district benchmark performance is measured by finding the observed average probability correct (p value) for all students in organization across all items measuring a particular benchmark.

https://education.mn.gov/mdeprod/idcplg?IdcService=GET_FILE&dDocName=MDE087482&RevisionSelectionMethod=latestReleased&Rendition=primary

1. Student Performance Calculation

The calculation uses the same psychometric process as calculating student scores.

- The “observed” performance is how the students did on the actual test questions that were administered for a particular benchmark.

Example: 4 students in School A each answered 2 questions aligned to the same benchmark.

A total of 8 attempts. Six of the attempts were correct. **Observed p-value = $6/8 = 0.75$**

School A	Item 1 Score	Item 2 Score	Item 3 Score
Student 1	1		1
Student 2	0	1	
Student 3		1	1
Student 4		1	0

How are the performance symbols calculated?

- The actual test questions administered to students may be limited in terms of the number of questions assessed at the benchmark level.
- Therefore, the actual student performance at a school or district level needs to be compared to an “expected” performance level
- The “expected” performance is based on the actual test questions that were administered for a particular benchmark.
- A range, called the expected “Meets” range, is calculated based on how students performing at the “Meets” achievement level would be expected to perform on the same questions that were administered to the school or district.

The [Benchmark Report Calculations Resource](#) has further details on the calculation.

2. Meets Range Calculation

- In these reports, “proficient” means at the “meets standards” or “exceeds standards” achievement level.
- The theta cut score at the “Meets” achievement level is therefore used to calculate the expected performance ranges.
- The “meets range” used to compare to the observed performance of a school is calculated by the following:
- The theta cut score at the “meets” level is transformed to the scale score
 - (e.g. the theta score cut at the “Meets” achievement level for MCA Math G3 is -0.52 and the scale cut score at the “Meets” achievement level for MCA Math G3 is 350).

2. Meets Range Calculation

- The expected “Meets” range, is based on how students performing at the “Meets” cut score would be expected to perform on the same questions that were administered to the students at the particular school/district
- The range has an upper and lower expected based on the questions the students were administered within that benchmark
- Example: Observed $6/8 = 0.75$ lower 0.471 upper 0.596

If Observed p-value < lower expected < upper expected, then Less than the "Meets" achievement level

If lower expected ≤ Observed p-value ≤ upper expected, then Similar to the "Meets" achievement level

If lower expected < upper expected < Observed p-value, then Greater than the "Meets" achievement level

Calculation interpretation examples

- The performance symbols are determined by calculating the average student performance on each benchmark at your school, and then comparing it to the performance *expected* of students who score at the “Meets” achievement level.



School performance on this benchmark is similar to the “Meets” achievement level.

- For example, a blue “similar to meets” symbol indicates the average student performance at your school on this benchmark is within the range of where a student testing at the “meets” level is expected to perform.
- Similarly, a red “below meets” symbol indicates that average student performance on this benchmark at your school is *less than* the expected range for a student who scores at the “meets” level.



School performance on this benchmark is less than the “Meets” achievement level.

Caveats to keep in mind

In the benchmark report we are only comparing to the Meets cut score, so it does not have a partial or exceeds cut score like the scale score for the students.

The calculation for the overall performance (calculate individual student scores first and then aggregate to the organization level) and benchmark (only calculate at the organization level) are different, so benchmark performance indicators and overall achievement levels are not comparable.

Additional Resources

If you would like to receive updates about information relevant to teachers, please use the following QR code to enter your information.

You can also send an email request to kendra.olsen@state.mn.us



Want to help write questions for the MCA?

This summer there were advisory panels of teachers who reviewed and approved all of the new items for the MCA at all grades.

Benefits:

1. YOU will see items on the upcoming MCA.
2. MN students benefit from having your expertise shape the MCA.
3. It's in the summer so no sub plans needed!
4. It is paid (if you don't have a sub).



<http://www.education.state.mn.us/MDE/EdExc/Testing/RegAdvPanel/index.html> (or scan the QR code)

(Google: **MDE Advisory Panels** – it's near the top of the list) --When you open the website go to the bottom of the page and click on "Submit your name to the Advisory Panel Register."

Testing 1, 2, 3

The screenshot shows the 'Testing 123' website header with the title 'TESTING 123' and the subtitle 'Test data in the classroom: Assessing, analyzing and taking action'. The Minnesota Department of Education logo is in the top right. A navigation bar includes 'Plan and Teach', '1. Assess', '2. Analyze', '3. Take Action', and 'Get Involved'. Below the navigation bar, the text 'Testing 1, 2, 3: A Resource for Teachers' is followed by a paragraph: 'Educators empowered with reliable data use it to eliminate learning barriers and evaluate classroom instruction. This website is an effort to provide teachers with relevant assessment and data resources that support an equitable learning environment where all students can achieve at high levels.' A circular diagram illustrates the three-step process: 1. Assess (with a checklist icon), 2. Analyze (with a person and data icon), and 3. Take Action (with a person running icon). At the bottom, a horizontal bar highlights '1. Assess' in green, with '2. Analyze' and '3. Take Action' in light green.

1. Promote Assessment and Data Literacy in the classroom
2. Resources for interpreting state test data
3. Teacher involvement opportunities

Testing123.education.mn.gov

Interpretive Materials

Materials available: <http://minnesota.pearsonaccessnext.com/additional-services/>

- Benchmark Report Interpretive Guide - PAN
- Benchmark Report “How To” Quick Guides (by subject) - PAN
- Understanding the MCA Benchmark Report Video - PAN
- Webinar - PAN
- Benchmark Report Calculations Resource – MDE Statewide Testing website under Technical Reports

Professional Development Requests – Outreach Specialist

Kendra.Olsen@state.mn.us 651-582-8542

<https://testing123.education.mn.gov/>

Additional benchmark resources

View the [Minnesota Academic Standards](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Academic Standards (K-12))

View the benchmarks in the [MCA test specifications](#) (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Test Specifications)

View the Using Data in the Classroom: [MDE Testing 1,2,3](https://testing123.education.mn.gov) (<https://testing123.education.mn.gov>)

View the [Frameworks for the Minnesota Science & Math Standards](http://scimathmn.org/stemtc/) (<http://scimathmn.org/stemtc/>)

View [Released Items and Passage Sets](#) for Reading and Mathematics (MDE website > Districts, Schools and Educators > Teaching and Learning > Statewide Testing > Released items and Passage Sets)

Thank you!

Kendra Olsen

Kendra.Olsen@state.mn.us

651-582-8542