



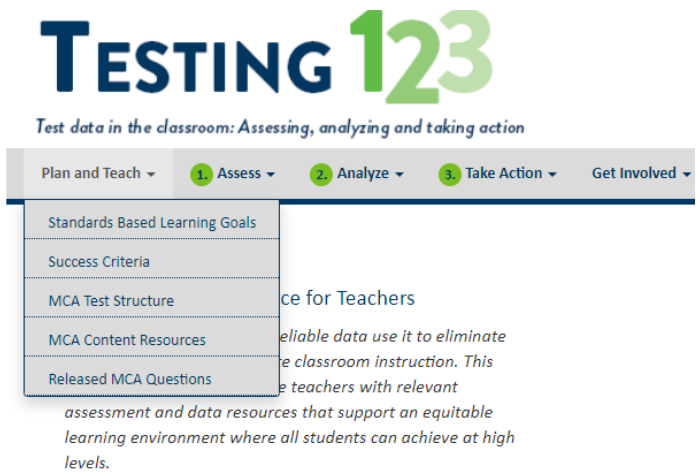
## MCA Math Test Resources

Here are some MCA Test resources (for math and other subjects) to help you and your students. All of these are linked through the [Testing 1, 2, 3 website](#), and we wanted to point out some specific resources with direct links for you to explore.

Please contact us with any questions, concerns, or to request professional development.

[Michael Huberty](mailto:michael.huberty@state.mn.us), Mathematics Assessment Specialist (michael.huberty@state.mn.us)

[Angela Hochstetter](mailto:angela.hochstetter@state.mn.us), Mathematics Assessment Specialist (angela.hochstetter@state.mn.us)



### [Testing 1, 2, 3: A Resource for Teachers](https://testing123.education.mn.gov/)

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

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.

## Achievement Level Descriptors (ALDs)

(<https://education.mn.gov/MDE/dse/test/ald/>)

The Achievement Level Descriptors (ALDs) describe the four levels of achievement specific to grade-level for the Minnesota assessments, based on the standards. Students who achieve the “Meets” and “Exceeds” levels are considered proficient with regard to the knowledge, skills and abilities described in the academic standards.



### Grade 5 Mathematics Achievement Level Descriptors

These are supplementary materials to the Mathematics MCA Achievement Level Descriptors. The overview for the MCA Achievement Level Descriptors and how to interpret them are on the MDE website at MDE > Districts, Schools and Educators > Statewide Testing > Achievement Level Descriptors.

Strand	Does Not Meet	Partially Meets	Meets	Exceeds
Number & Operation	<ul style="list-style-type: none"> <li>Partial mastery of basic division facts</li> <li>Recognizes fractions and decimals in familiar context</li> </ul>	<ul style="list-style-type: none"> <li>Knows basic division facts</li> <li>Knows benchmark decimal and fraction equivalents (e.g., <math>\frac{1}{2} = 0.5</math>, <math>\frac{1}{4} = 0.25</math>)</li> </ul>	<ul style="list-style-type: none"> <li>Divides multi-digit numbers</li> <li>Solves division problems when all relevant information is present and the question is clearly defined</li> <li>Orders and compares common fractions and decimals</li> <li>Adds and subtracts fractions</li> <li>Adds and subtracts decimals</li> </ul>	<ul style="list-style-type: none"> <li>Efficiently divides and knows when to divide in a problem solving situation</li> <li>Adds and subtracts fluently with fractions and decimals</li> </ul>
Algebra	<ul style="list-style-type: none"> <li>Recognizes patterns that use skip counting</li> <li>Works with simple variable representations</li> </ul>	<ul style="list-style-type: none"> <li>Recognizes patterns in a list of numbers</li> <li>Resorts to calculation to verify commutative and associative properties</li> <li>Solves verbal and simple one-step equations and inequalities by substituting a value for the unknown</li> </ul>	<ul style="list-style-type: none"> <li>Uses rules to generate patterns</li> <li>Translates between patterns and rules</li> <li>Applies commutative and associative properties</li> <li>Understands simple inequalities</li> <li>Represents a situation with an equation containing a variable</li> </ul>	<ul style="list-style-type: none"> <li>Works fluently with patterns and/or rules involving more than one operation or complex problem</li> <li>Applies the commutative, associative and distributive properties</li> <li>Interprets inequalities using variables</li> </ul>

## Released Items

(<https://education.mn.gov/MDE/dse/test/items/>)

A total of 150 math questions that have been used on the MCA-III have been released. You can filter, search by key words (e.g., triangle, bar graph, probability), and sort. 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.

**Subject**  
Math

**Grade**  
6

**Strand**  
All Strands

**Item Type**  
All Item Types

**DOK Level**  
All DOK Levels

**Calculator Usage**  
All Calculator Usages

Reset Search

### 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
<a href="#">44165</a>	Data Analysis (& Probability)	6.4.1.4	36	TE	II	CL
<a href="#">263076</a>	Data Analysis (& Probability)	6.4.1.1	D	MC	II	CL
<a href="#">260633</a>	Data Analysis (& Probability)	6.4.1.1	9	TE	I	CL
<a href="#">264172</a>	Data Analysis (& Probability)	6.4.1.2	5	TE	II	CL

Grade	Number of Released Items
3	26
4	26
5	16
6	25
7	18
8	21
11	18

## Item Samplers & Teacher Guides

(<http://minnesota.pearsonaccessnext.com/item-samplers/>)

A Mathematics MCA item sampler for each grade is available for you to use to become familiar with the format and item types – including technology enhanced item types. These samplers are available in a variety of accommodated formats (e.g., online, text-to-speech, translations, paper accommodations). Each consists of approximately 30 questions to practice. The Item Sampler Teacher Guides provides detail about the questions on the samplers.



## Grade 8 Mathematics MCA Item Sampler Teacher Guide

### Question 11

This is a technology-enhanced item. The correct answer is shown. A student must drag each number and the symbol into the correct boxes in order to receive 1 point.

Ben's school is having a carnival. It costs \$3 to enter and \$0.75 for each game ticket. Ben has \$16. Show an inequality that represents the number of tickets,  $t$ , Ben can buy.

Drag the numbers and symbol into the boxes.

0.75 3 16  $\geq$

3 + 0.75  $t \leq$  16

Notes on grade level expectations: The entrance fee is a fixed cost and 0.75 represents the price per ticket,  $t$ . The less than or equal to symbol ( $\leq$ ) shows Ben spends no more than \$16 on the entry fee and tickets for games.

Item Types	Sample Screenshot						
<p><b>Bar Graph (Mathematics and Science MCA only)</b></p> <p>Students answer bar graph items by selecting and dragging the top of one or more bars in the bar graph. For some items, students may only be able to move some of the bars.</p> <p>To change their answer, students select and drag the top of the bar to move it.</p>	<p>The item shows the number of students in grades 3-5 and the number of students in each grade who played an identified outdoor game.</p> <p>Grade Number of Students</p> <table border="1"> <tr><td>3</td><td>45</td></tr> <tr><td>4</td><td>30</td></tr> <tr><td>5</td><td>50</td></tr> </table> <p>Grade 3-5 Tutorial, Item 1</p> <p>(This item type also appears in the Grades 6–HS Tutorial, Item 1)</p>	3	45	4	30	5	50
3	45						
4	30						
5	50						
<p><b>Fraction Model (Mathematics MCA only)</b></p> <p>For most fraction model items, students must use the More or Fewer buttons: they select More to divide the model into more parts, and they select Fewer to divide the model into fewer parts. Students then select the parts they want to shade to complete the model.</p> <p>To remove the shading on a part of the model, students select the part again.</p> <p>For some fraction model items, the More and Fewer buttons are grayed out and students only need to shade parts of the model to answer the question.</p> <p>To start the item over, students select the Reset button.</p>	<p>During the school carnival, a student spent <math>\frac{1}{4}</math> of the time at lunch. Create a fraction model that is shaded to show the fraction of time spent at lunch.</p> <p>Divide the figure into equal parts by using the More and Fewer buttons. Then, select the parts you want to shade.</p> <p>Fraction of Time Spent at Lunch</p> <p>Fewer More Reset</p> <p>Grade 3-5 Tutorial, Item 3</p> <p>(This item type also appears in the Grades 6–HS Tutorial, Item 3)</p>						

## Item Types Tutorial & Teacher Guide

(<http://minnesota.pearsonaccessnext.com/tutorial/>)

Educators and students may use Item Types Tutorial to familiarize themselves with it before using the tutorial with the format of the various generic types of online MCA problems. The guide provides educators with details on the item types students may experience in the Item Types Tutorial and on the MCA along with information specific to content areas.

---

## [MCA Mathematics Test Specifications](#)

(<https://education.mn.gov/MDE/dse/test/spec/>)

Test specifications provide information on how the academic standards are addressed on a test and contain specific rules and characteristics that guide the development of a test's content and format. The test specifications indicate which strands, sub-strands, standards and benchmarks will be assessed on the test and in what proportions. Test specifications are excellent tools for gaining an in-depth understanding of the content and format of the tests. Keep in mind, these are the **minimum** considerations for curriculum and instruction. Some concepts in the academic standards can only be assessed in the classroom and not on a standardized statewide assessment.

## Mathematics MCA-III Test Specifications Grade-Level Tables

### Grade 3

#### Strand 1—Number & Operation

(Online MCA, 18–20 items)  
(Paper MCA, 20–24 items)

**Standard 3.1.1:** Compare and represent whole numbers up to 100,000 with an emphasis on place value and equality.

(Online MCA, 4–6 items)

(Paper MCA, 5–7 items)

#### Benchmarks

##### 3.1.1.1

Read, write and represent whole numbers up to 100,000. Representations may include numerals, expressions with operations, words, pictures, number lines, and manipulatives such as bundles of sticks and base 10 blocks.

##### Item Specifications

- Vocabulary allowed in items: digits, value, plot, locate, point

---

##### 3.1.1.2

Use place value to describe whole numbers between 1000 and 100,000 in terms of ten thousands, thousands, hundreds, tens and ones.

##### Item Specifications

- Allowable expanded forms:  $300 + 60 + 5$ , 3 hundreds + 6 tens + 5 ones
  - Items may ask to identify a place a digit is in or the value of the digit in a place
  - Vocabulary allowed in items: digits, value, equal
-