Grade 3
Evidence Statements

Maryland State Department of Education
Overview

The Maryland Comprehensive Assessment Program (MCAP) includes a coherent set of summative mathematics assessments aligned to the Maryland College and Career Ready Mathematics Standards. Students are required to take the MCAP Mathematics assessment at the end of grades 3-8 and at the end of Algebra I. Students may also take a MCAP Mathematics Assessment at the end of Geometry and Algebra II.

The MCAP Mathematics assessment development process is based on Evidence-Centered Design (ECD). The Evidence-Centered Design process begins by establishing the answer to “What skills and understandings should be assessed?”. The MCCRS describe the skills and understandings that the MCAP Mathematics assessments assess. Assessments are then designed to gather evidence that allows inferences to be made. Assessments can be designed to allow inferences of various grain sizes. The MCAP Mathematics assessments are summative assessments and are therefore designed to provide evidence that allows only general inferences about a student’s mathematical skills and understandings. The MCAP Mathematics Claims Structure describes the grain size of the evidence that the MCAP Mathematics assessments will yield. Assessment items are designed to elicit evidence of a student’s level of proficiency for each claim.

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<tr>
<th>MCAP Mathematics Claims Structure</th>
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**Master Claim**
The student is college and career ready or is “On-Track” to being college and career ready in mathematics

**Sub-Claims**

<table>
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<tr>
<th>Content</th>
<th>The student solves problems related to all content of the grade/course related to the Standards for Mathematical Practice</th>
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<tr>
<td>Reasoning</td>
<td>The student expresses grade/course level appropriate mathematical reasoning</td>
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<tr>
<td>Modeling</td>
<td>The student solves real-world problems with a degree of difficulty appropriate to the course</td>
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Overview of MCAP Mathematics Assessment Task Types

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<tr>
<th>Task Type</th>
<th>Description</th>
<th>Sub Claim</th>
<th>Scoring Method</th>
<th>Number of Operational Items per Form</th>
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</table>
| Type I    | Type I items will access conceptual understanding; procedural skills; reasoning and the ability to use mathematics to solve real-world problems. | • Content  
  • Reasoning  
  • Modeling     | Machine scored       | 31                     |
| Type II   | Type II items assess a student’s ability to reason mathematically. Tasks may require students to provide arguments or justifications, critique the reasoning of others and to use precision when explaining their thinking related to mathematics. | Reasoning          | Human-scored but may also include a machine scored component | 2                     |
| Type III  | Type III items assess a student’s ability to apply their understanding of mathematics when solving real-world contextual problems. | Modeling          | Human-scored but may also include a machine scored component | 2                     |
| Total     |                                                                             |                    |                         | 35                                   |
MCAP Mathematics Evidence Statements

MCAP Mathematics Evidence Statements help teachers, curriculum developers, and administrators understand how the Maryland College and Career Ready Mathematics Standards will be assessed. Assessment items are designed to elicit the evidence described in the Evidence Statements.

Organization of Evidence Statements

The MCAP Mathematics Evidence Statements for the Content Sub-Claim are organized using the same structure as the Maryland College and Career Ready Mathematics Standards. The Domains, Clusters, and then Standards organize the Grade 3 Evidence statements.
## Coding for Content Standards

Several different numbering codes are being used for the standards within the MCAP Evidence Statements. The numbering system is explained in the following tables.

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<tr>
<th>Claim</th>
<th>Explanation of Types of Evidence Statements</th>
<th>Example of the Standard</th>
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</table>
| For Content Standards | **When Assessing the Entire Standard**  
• Standard code is the same as the MCCR standard.  
• The exact language and intent of the entire standard is assessed, which includes examples and "e.g." parts of the standard. | 3.OA.A.1-Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as $5 \times 7$. |
| | **When Assessing Portions of a Standard with Multiple Operations**  
• The standard code is the same as the MCCR standard with an addition of a Dash 1 or dash 2, etc. (-1, -2)  
• The portion of the standard that is assessed will appear in bold font. | 3.OA.A.3-1 Use multiplication and division within 100 (both factors less than or equal to 10) to solve word problems in situations involving equal groups, arrays, or area, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.  
3.OA.A.3-2 Use multiplication and division within 100 (both factors less than or equal to 10) to solve word problems in situations involving equal groups, arrays, or area, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. |
| | **When Assessing Portions of a Standard with Two or More Concepts**  
• The standard code is the same as the MCCR standard with an addition of a Dash 1 or dash 2, etc. (-1, -2)  
• The portion of the standard that is being assessed will appear in bold font. | 4.OA.A.1-Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplication comparisons as multiplication equations  
4.OA.A.1-2 will focus on the last sentence Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplication comparisons as multiplication equations |
Coding for Reasoning

The MCAP Mathematics Evidence Statements for the Reasoning Sub-Claim have a different structure than the Content Evidence Statements. The codes for the Reasoning Evidence Statements begin with the number of the grade level followed by the letter “R” to indicate that the statement is a Reasoning Evidence Statement. The last number stands for the sequence of the evidence statement.

The Reasoning Evidence Statements apply to both machine-scored and constructed response items. The Reasoning Assessment items may align to any of the content standards from a given course. In grades 3-5, an online calculator is available for students' use to assist with any computations for these types of questions on the assessment.

<table>
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<tr>
<th>MCCR3 Code</th>
<th>Evidence Statement</th>
<th>Clarifications</th>
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</thead>
</table>
| 3.R.1      | Base reasoning or explanations using a given pictorial representations and explains how the pictorial model represents a mathematical concept, or how it can be used to justify or refute a statement (with or without flaws) or how it can be used to generalize. | - Tasks provide visual (drawn) representations for students explain how a given visual representation represents a mathematical concept OR
  - Tasks provide a visual representation for students to explain how it can justify or refute a statement or reasoning OR
  - Tasks provide a given visual representation to make a conjecture or generalization.
  - Tasks should focus on content in standards that specify reasoning using visual mathematical representations (number lines, diagrams, and tables, etc.). |
| 3.R.2      | Identify flawed thinking/reasoning and explain how to correct the thinking or work. | - Tasks prompt students to identify the flaw in thinking/reasoning and explain how to correct the thinking or work. |

Type I Tasks: Must have a single context to support reasoning for a 1-point task.
- May ask students to identify or select given reasoning that explains how the visual model represents a given mathematical concept.
- May ask students to use the visual model and select a statement or work that will justify or refute a given conjecture.
- May ask students to use the given visual model and select the correct generalization that the model proves is true.

Type II Tasks: Must have context rich enough to support reasoning for a 2-point task.
- Constructed response tasks allow students to provide work and/or a written explanation and/or use the drawing tool to describe their own reasoning.
- Tasks may prompt students to explain why the pictorial representations does or does not represent the mathematical concept or procedure, or to justify or refute an argument.
The Codes for Modeling

The codes for the Modeling Evidence Statements begin with the grade level followed by the letter “M” to indicate that the statement is a Modeling Evidence Statement, it is then followed by the numeral 1, a dash, and then another numeral 1-5, which identifies a specific modeling number statement. The Modeling Evidence Statements may apply to both machine-scored and constructed response items.

The Modeling Assessment items may align to any of the content standards from a given course. In grades 3-5, an online calculator is available for students’ use to assist with any computations.

<table>
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<tr>
<th>NCCRS Code</th>
<th>Modeling Evidence Statement</th>
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| 3.M.1.1    | Determine the problem that needs to be solved in a real-world situation. | - Problem situations are not more than 2 steps.  
- Tasks may include charts or graphs that could be analyzed for information about the problem.  
- Some tasks could require students to describe the problem that needs to be solved, in their own words. (What is the problem that needs to be solved?)  
- Some tasks could require students to justify the problem that needs to be solved by identifying information from in the problem.  
- Some tasks could require students to create a question that could be asked based on the problem situation. |
| 3.M.1.2    | Determine the information that is needed to solve a problem in a given real-world situation. | - Problem situations are not more than 2 steps.  
- Tasks do not require a solution.  
- Tasks may include charts or graphs that can be analyzed for information.  
- Some tasks could prompt students to identify the information that is needed to solve the problem.  
- Some tasks may have information that is essential to solving the problem, but is not given. Students will be prompted to make assumptions or identify the information that is needed to solve a problem. |
| 3.M.1.3    | Identify the mathematics that is needed to create a solution path for an example of a real-world situation. | - Problem situations are not more than 2 steps.  
- Tasks do not require a solution.  
- Tasks should prompt students to identify the sequence of operations needed to create a solution path.  
- Tasks should allow for students to represent their responses using words and/or mathematical representations.  
- Responses should be mathematically correct and precise.  
- Tasks responses should include an answer. |
| 3.M.1.4    | Create a solution path that represents the mathematics needed to solve a real-world situation. | - Problem situations are not more than 2 steps.  
- Tasks should prompt students to represent a solution path using correct and precise mathematical representations. (words, symbols, drawings, etc.)  
- Tasks require students to analyze a given solution path (partial or complete) to determine if it is a mathematically correct solution path for the given real-world situation.  
- Tasks could ask students to improve or refine a problem solution. |
| 3.M.1.5    | Evaluate a partial or complete solution to a real-world situation. | - Problem situations are not more than 2 steps.  
- Tasks require students to analyze a given solution path (partial or complete) to determine if it is a mathematically correct solution path for the given real-world situation.  
- Tasks could ask students to improve or refine a problem solution. |
Standards for Mathematical Practice

The Standards for Mathematical Practice describe the varieties of expertise that mathematics educators at all levels should seek to develop in their students.

These practices rest on important “processes and proficiencies” with longstanding importance in mathematics education.

1. Make sense of problems and persevere in solving them
2. Reason abstractly and quantitatively
3. Construct viable arguments and critique the reasoning of others
4. Model with mathematics
5. Use appropriate tools strategically
6. Attend to precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

Commonly Used Terms:

• Context - The situation or setting for a word problem. The situations influence the solution path.
• Thin Context - A sentence or phrase that provides meaning for the quantity/quantities in a problem. For example, “The fractions represent lengths of a string.”
• No Context - The item has no setting or situation. There are only numbers and symbols in the item.
• Visual Models - Drawn or pictorial examples that are representations of the mathematics.
# Grade 3 - Content

## Operations and Algebraic Thinking (OA)

### A. Represent and solve problems involving multiplication and division

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<th>MCCRS Code</th>
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<th>Evidence Statement Clarifications</th>
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</table>
| 3.OA.A.1   | Interpret products of whole numbers, e.g., interpret $5 \times 7$ as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as $5 \times 7$. | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. Clarifications: 
- The intent of this standard is to interpret multiplication expressions and equations using the definition of multiplication as stated in the standard. It is not to assess calculating products. 
- Tasks involve interpreting products rather than calculating products in terms of equal groups, arrays, area, and/or measurement quantities. All four representations listed should be used in tasks, not just equal groups. 
- Task context should be aligned to the equal parts problem types shown in the Multiplication and Division Situations table found in the back of this document. |
| 3.OA.A.2   | Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$. | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. Clarifications: 
- The intent of this standard is to interpret division expressions and equations using the definition of division as stated in the standard. It is not to assess calculating quotients. 
- Tasks involve interpreting quotients rather than calculating quotients in terms of equal groups, arrays, area, and/or measurement quantities. - See the table for Multiplication and Division Situations found in the back of this document found in the back of this document 
- Tasks involve interpreting quotients rather than calculating quotients in terms of equal groups, arrays, area, and/or measurement quantities. All representations should be used in tasks, not just equal groups. 
- Half the tasks require interpreting quotients as a number of objects in each share and half require interpreting quotients as a number of equal shares. (Both Partitive and Measurement division types) |
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<tr>
<td>3.OA.A.3-1</td>
<td><strong>Use multiplication and division within 100 (both factors less than or equal to 10)</strong> to solve word problems in situations involving equal groups, arrays, or area, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td>
<td>Evidence Statement: For assessment, this standard has been divided into two sections one for each operation. 3.OA.A.3-1 only focuses on multiplication within 100 with both factors being less than or equal to 10 The intent of the standard is for students to solve word problems types listed in the table of Multiplication and Division Situations found in the back of this document. Clarifications for both multiplication and division:  - Tasks should not include a symbol for the unknown. This concept will be assessed in 3.OA.A.4 using a symbol for the unknown.  - Tasks should require students to represent the context of a multiplication or division problem with a correct equation. (Answers must be given.)  - Context may include word and/or an assortment of visual models using equal groups, arrays, or area models.  - Must have context for a single-step word problem  - If students are asked to identify the equation that matches the problem situation, a variety of equation representations should be used, such as (5 x 8 = 40 or 40 = 5 x 8, etc.)  - For more information about word problem types, see the table, Multiplication and Division Situations, found in the back of this document.</td>
</tr>
<tr>
<td>3.OA.A.3-2</td>
<td><strong>Use multiplication and division within 100 (both factors less than or equal to 10)</strong> to solve word problems in situations involving equal groups, arrays, or area, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.</td>
<td>3.OA.A.3-2 only focuses on division within 100 with both factors less than or equal to 10 Clarifications:  - See above 3.OA.A.3-1 and apply it for division problem types and representations.</td>
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### MCAP Grade 3 Evidence Statements

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| 3.OA.A.4   | Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations, 8 \times \square = 48 \quad 5 = \square \div 3 \quad 6 \times 6 = ? | **Evidence Statement**: The intent of the standard is for students to determine the unknown whole number in multiplication and division equations. During instruction of 3.OA.A.3, students represent unknown numbers using a symbol (an empty small square or question mark). This standard is a transition standard to 3.OA.A.8 where students are introduced to equation notation with the unknown represented with a letter. **Clarifications**:  
  - Tasks do not have a context.  
  - Tasks require students to write the equation and represent the unknown with a letter.  
  - Tasks should include the concept that of the relationship between multiplication and division. Reference the table, Addition and Subtraction Situations found in back of this document. |
### B. Understand properties of multiplication and the relationship between multiplication and division

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| 3.OA.B.5   | Apply properties of operations as strategies to multiply and divide. *Examples:* If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known *(Commutative property of multiplication)*, $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$, then $15 \times 2 = 30$ or $5 \times 2 = 10$, then $10 \times 3 = 30$ *(Associative property of multiplication)*, knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$ one can find $8 \times 7$ as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$ *(Distributive Property)* | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
**Clarifications:**  
- Some tasks have context and other tasks do not have context.  
- Products and related quotients are limited to the 10x10 multiplication table  
- These tasks may not exceed the content limits of grade 3. For example, $2 \times 4 \times 5$, would be acceptable as students can use the associative property to rewrite the expression as $8 \times 5 = 40$, which falls within the content limits of grade 3. The problem $7 \times 4 \times 6$ would exceed the content limits of grade 3 because any use of the associative property would result in a 2-digit multiplier. |
| 3.OA.B.6   | Understand division as an unknown –factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8. | **Evidence Statement:** The entire standard provides the content for assessment.  
**Clarification:**  
- All products and related quotients are from the harder three quadrants of the times table *(a x b where a > 5 and/or b > 5)*.
### C. Multiply and divide within 100

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| 3.OA.C.7-1 | **Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5=8) or properties of operations.** By end of grade 3, know from memory all products of two one-digit numbers. | **Evidence Statement:** For assessment, this standard is divided by operation.  
3.OA.C.7-1 tasks will only address multiplication within 100 for fluency.  
The word fluency does not mean instant recall (automaticity).  
Fluency means the recall of facts involves accuracy, efficiency, and flexibility.  
The standard focuses on the strategies commonly used to find the products.  
**Clarifications:**  
- Tasks assess the entire standard except for the last sentence, “By end of grade 3, know from memory all products of two one-digit numbers.  
- Tasks do not have a context.  
- Tasks are not timed.  
- Tasks may include how the mental math strategies, properties of operations, or relationships between and among operations are used to multiply whole numbers with factors with products within 100.  
- This standard should only be used for content problems. This standard is not appropriate as the content focus for reasoning and modeling tasks since a calculator is available for computation on modeling and reasoning tasks. |
| 3.OA.C.7-2 | **Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that 8 x 5 = 40, one knows 40 ÷ 5=8) or properties of operations.** By end of grade 3, know from memory all products of two one-digit numbers | **Evidence Statement:**  
3. O.A.C.7-2 tasks will only address division within 100 for fluency.  
**Clarifications:**  
See 3.OA.C.7-1  
- Tasks could include the relationship between multiplication and division and how this relationship is used to find the unknown in either operation, Example: I can find 40 ÷ 5, because I know 5 x 8= 40. |
### D. Solve problems involving the four operations, and identify and explain patterns in arithmetic

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<tr>
<td>3.OA.D.8</td>
<td>Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.</td>
<td><strong>Evidence Statement:</strong> The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. <strong>Clarifications:</strong> • Tasks must be two-step problems using any of the four operations. • Tasks will allow students to represent their solution path using equations with a letter for the unknown quantity • Tasks include two out of the four operations and any of the problem situation types with unknowns in various positions. Reference the table Multiplication and Division Situations, found in the back of this document.</td>
</tr>
<tr>
<td>3.OA.D.9</td>
<td>Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends.</td>
<td><strong>Evidence Statement:</strong> The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. <strong>Clarifications:</strong> • Tasks focus on identifying arithmetic patterns (including patterns in the addition table or multiplication table). Describing or explaining the patterns can be based on properties of operations or patterns on the addition or multiplication tables. • Note the context in the example.</td>
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**MCAP Grade 3 Evidence Statements**

**Number and Operations in Base Ten (NBT)**

A. Use place value understanding and properties of operations to perform multi-digit arithmetic

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| 3.NBT.A.1  | Use place value understanding to round whole numbers to the nearest 10 or 100 | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
**Clarifications:**  
- Tasks have little to no context.  
- Tasks should allow students to apply strategies of rounding numbers to the nearest 10 and 100.  
- Tasks should provide several examples of rounding two-and three-digit numbers and ask students to identify and describe place value patterns that result.  
- Tasks should involve rounding numbers to the nearest 10 or 100 using a number line. |
| 3.NBT.A.2  | Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Fluency is defined as the means to find the answer to multi-digit numbers using methods that include accuracy, efficiency, and flexibility of thinking. The standard focuses on the strategies commonly used to find the answers when adding or subtracting within 1000.  
**Clarifications:**  
- Tasks should be written to equally focus on both addition and subtraction within 1000.  
- Tasks have little to no context.  
- Not all of the tasks should require just an answer. There should be tasks that reflect commonly used strategies as named in the standard.  
- Tasks include numbers with sums not greater than 1000.  
- This standard should only be used for content problems. This standard is not appropriate as the content focus for reasoning and modeling tasks since a calculator is available for computation on modeling and reasoning tasks. |
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<thead>
<tr>
<th>MCRRS Code</th>
<th>Standard</th>
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</table>
| 3.NBT.A.3  | Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9 x 80, 5 x 60) using strategies based on place value and properties of operations | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Clarifications:  
• Tasks have little to no context.  
• Tasks should provide for identifying strategies or representing commonly used strategies of place value or properties of operations.  
• Tasks should ask students to continue patterns of multiplying one-digit whole numbers by multiples of ten in the range of 10-90. |
Number and Operations-Fractions (NF)
A. Develop understanding of fractions as numbers

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| 3.NF.A.1   | Understand a fraction 1/b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size 1/b. | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. This standard is about understanding unit fractions. Incorporated 3.G.A.2  
**Clarifications:**  
- Tasks do not involve the number line.  
- For assessment purposes, the types of models that will be used are linear fraction models, such as bar models/tape diagrams or area models. Fraction circles will not be used as models for assessment purposes.  
- Tasks should include a variety of the fraction models listed. Not just one type of model.  
- Fractions equivalent to whole numbers are limited to 0 through 5.  
- Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8, however tasks should include the use of all available denominators.  
- Tasks have thin context |
| 3.NF.A.2a  | Understand a fraction as a number on the number line; represent fractions on a number line diagram.  
  a. Represent a fraction 1/b on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size 1/b and that the endpoint of the part based at 0 locates the number 1/b on the number line. | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
**Clarifications:**  
- Fractions may be greater than 1.  
- Fractions equivalent to whole numbers are limited to 0 through 5.  
- Tasks have “thin context” (thin context means a sentence or phrase provides a reason for being given a set of fractional measurements, e.g., the fractions represent lengths of ribbon.”  
- Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. |
### MCAP Grade 3 Evidence Statements

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| 3.NF.A.2b  | Understand a fraction as a number on the number line; represent fractions on a number line diagram.  
  b. Represent a fraction a/b on a number line diagram by marking off a lengths 1/b from 0. Recognize that the resulting interval has size a/b and that its endpoint locates the number a/b on the number line.  
  Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. This is similar to 3.NF.A.2a, but 2b extends fractions representation greater than a unit fraction (1/b).  
  Clarifications:  
  - Tasks should include fractions greater than 1 (example 4/3 or 21/8).  
  - Fractions equivalent to whole numbers are limited to 0 through 5.  
  - Tasks have “thin context”  
  - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8  
  - Tasks should include the use of all of the available denominators. | |
| 3.NF.A.3a  | Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.  
  a. Understand two fractions as equivalent (equal) if they are the same size or the same point on a number line.  
  Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
  Clarifications:  
  - Fractions equivalent to whole numbers are limited to 0 through 5.  
  - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Tasks should include the use of all the available denominators.  
  - Tasks should include understanding of equivalent fractions if they are the same size and same point on a number line. | |
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| 3.NF.A.3b  | Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.  
  b. Recognize and generate simple equivalent fractions, e.g., $\frac{1}{2} = \frac{2}{4}$, $\frac{4}{6}$ and $\frac{2}{3}$.  
  Explain why fractions are equivalent, e.g., by using a visual fraction model. | **Evidence Statement**: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
 **Clarifications**:  
 - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8; Tasks should include the use of all available denominators.  
 - Fractions equivalences are limited to whole numbers 1 through 5.  
 - Explain why fractions are equivalent by using visual fraction models.  
 - Tasks must use a visual fraction model, such as bar models/tape diagrams, number lines, or area models. No circle fraction models. |
| 3.NF.A.3c  | Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.  
  c. Express whole numbers as fractions and recognize fractions that are equivalent to whole numbers. *Examples*: Express 3 in the form $3 = \frac{3}{1}$; recognize that $\frac{6}{1} = 6$.  
  locate $\frac{4}{4}$ and 1 at the same point of a number line diagram. | **Evidence Statement**: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
 **Clarifications**:  
 - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Tasks should include the use of all available denominators.  
 - Fractions equivalent to whole numbers are limited to 1 through 5.  
 - Explain equivalence to whole numbers by locating the same points on the number line diagram (provide the number line). |
| 3.NF.A.3d  | Explain equivalence of fractions in special cases and compare fractions by reasoning about their size.  
  d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. | **Evidence Statement**: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
 **Clarifications**:  
 - Tasks are limited to fractions with denominators 2, 3, 4, 6, and 8. Tasks should include the use of all available denominators.  
 - Fractions equivalent to whole numbers are limited to 1 through 5  
 - Tasks should note that the fractions being compared have the same whole.  
 - Tasks should focus on justifying a comparison of two fractions based on the same sized whole by using a visual fraction model.  
 - Tasks must use a visual fraction model, such as bar models/tape diagrams, number lines, or area models. No circle fraction models. |
**Measurement and Data (MD)**

**A. Solve problems involving measurement and estimation of intervals of time, liquid volumes, and mass**

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Standard</th>
<th>Evidence Statement/Clarifications</th>
</tr>
</thead>
</table>
| 3.MD.A.1   | Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing problem on a number line diagram. | **Evidence Statement:** The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. There are two concepts in this standard.  

**Clarifications:**  
1. **Telling and writing time to the nearest minute and measure time intervals in minutes.**  
   - Tasks could involve telling and writing time to the nearest minute.  
   - Time intervals are limited to 60 minutes.  
   - Acceptable time interval: Start time 1:20. End time 2:10. Total time interval is 50 minutes which is within the 60 minute interval requirement.  
   - Unacceptable interval: Start time 1:20. End time 2:30. Total time interval exceeds 60 minutes.  

2. **Solving addition and subtraction word problems with time intervals in minutes**  
   - See above for acceptable time interval limits  
   - Tasks may show an open number line diagram for students to use to solve the problem  
   - This evidence statement measures time intervals or elapsed time. Elapsed time is time that has passed. Tasks may include a start or end time and the amount of time that passes to find the end or start time.  
   - Example 1: Given start and end time, find the amount of time in between start and end time. (David has a lot of homework to do. He starts his reading homework at 3:30 and ends at 3:55. Then he does math from 3:55 until 4:25. How much total time did David spend on his homework?)  
   - Example 2: Given the start time and the time in between, find end time. (David got home from school at 4:00. He played outside for 30 minutes and did homework for 25 minutes. What time is it?)  
   - Example 3: Given time in between the start and end time and given end time, find start time (Ian went to the library and stayed at the library for 25 minutes. He left the library at 2:30. What time did he arrive at the library?) |
### MCCRS Standard

<table>
<thead>
<tr>
<th>MCCRS</th>
<th>Standard</th>
<th>Evidence Statement Clarifications</th>
</tr>
</thead>
</table>
| 3.MD.A.2 | Measure and estimate liquid volumes and masses of objects using standard units of grams (g) and kilograms (kg), and liters (l). Add subtract, multiply, or divide to solve one step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Clarifications:  
- Tasks use drawings such as a beaker with measurement scale or balance scales, etc. to provide information for solving the problem.  
- Tasks do not require computations beyond the grade 3 expectations |
### B. Represent and interpret data

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Standard</th>
<th>Evidence Statement/Clarifications</th>
</tr>
</thead>
</table>
| 3.MD.B.3   | Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” or “how many less” problem using information presented in the scaled bar graph. (For example, draw a bar graph or picture graph in which each square (symbol) in the bar might represent 5 pets). | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Clarifications:  
- Tasks will engage students in constructing, reading, and interpreting bar and picture graphs.  
- Tasks will include problems types that are one-step and two-step “how many less” and “how many more” problems. The graph will provide information for the problem.  
- Tasks that involve using a scaled bar graph, (e.g. On a bar graph each square that represents a data point is greater than 1)  
- Tasks involve no more than 10 data points in 2-5 categories.  
- Categorical data should not take the form of a category that should be represented numerically (e.g. do not use ages of students).  
- Tasks do not require students to create the entire graph but might ask students to complete a graph or otherwise demonstrate knowledge of its creation.  
- Tasks do not require computations beyond the grade 3 expectations. |
| 3.MD.B.4   | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units- whole numbers, halves, or quarters. | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Clarification:  
- Tasks require students to gather data by measuring lengths using rulers partitioned in halves and fourths of an inch.  
- Data points on line plots must be represented by an “x” for each data entry.  
- Tasks then require students to use the data they gathered to create a line plot using the specifications given in the standard. |
C. Geometric measurement: understand concepts of areas and relate area to multiplication and to addition.

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Standard</th>
<th>Evidence Statement/Clarifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.MD.C.5</td>
<td>Recognize area as attribute of plane figures and understand concepts of area measurement.</td>
<td>Evidence Statement: These standards are instructional and must be taught as they develop important foundational understanding for area measurement. The standards may be used as the content focus for tasks that will assess reasoning and modeling.</td>
</tr>
<tr>
<td>3.MD.C.5a</td>
<td>Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).</td>
<td>Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.</td>
</tr>
<tr>
<td>3.MD.C.5b</td>
<td>Relate area to the operations of multiplication and addition. b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real-world and mathematical problems.</td>
<td>Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. Clarifications: • Products are limited to the 10x10 multiplications table. • In the context of real-world mathematical problems.</td>
</tr>
<tr>
<td>3.MD.C.6</td>
<td>Use tiling to show in a concrete case that the area of a rectangle with whole number side lengths a and b + c. Use area models to represent the distributive property in mathematical reasoning.</td>
<td>Evidence Statement: This standard is instructional and must be taught as it develops important foundational understanding for area measurement. The standard may be used as the content focus for tasks that will assess reasoning and modeling.</td>
</tr>
<tr>
<td>3.MD.C.7b</td>
<td>Relate area to the operations of multiplication and addition. d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real-world problems.</td>
<td>Evidence Statement: The language of the standard provides the focus for this evidence statement. Clarification: • Tasks have context. • A rectilinear figure is a polygon in which all angles measure 90 or 270 degrees. • Tasks should not exceed computation levels for grade 3. Products of each component of the composite figure should not be greater than 9x10. (3.NBT.A.3)</td>
</tr>
</tbody>
</table>
3. MD.D-Geometric measurement: Recognize perimeter as an attribute of plane figures and distinguish between linear and area measurement.

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Standard</th>
<th>Evidence Statement/Clarifications</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.MD.D.8</td>
<td>Solve real-world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</td>
<td>Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples. Clarifications: • Tasks should not exceed computation levels for grade 3.</td>
</tr>
</tbody>
</table>
## Geometry (G)

### A. Reason with shapes and their attributes

<table>
<thead>
<tr>
<th>MCRRS Code</th>
<th>Standard</th>
<th>Evidence Statement/Clarifications</th>
</tr>
</thead>
</table>
| 3.G.A.1    | Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples...  
Clarifications:  
- Shapes do not include the 90-degree symbol within the shape. |
| 3.G.A.2    | Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. *For example, partition a shape into 4 parts with equal area, and describe the area of each part as 1/4 of the area of the shape.* | Evidence Statement: The language of the standard should guide the creation of assessment tasks, including the ideas in the given examples.  
Clarifications:  
- The content of this standard is a prerequisite concept to the 3.NF standards. |
### MCAP Grade 3 Evidence Statements

**Reasoning** - Calculators are available for all reasoning items

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Evidence Statement</th>
<th>Clarifications</th>
</tr>
</thead>
</table>
| 3.R.1      | Base reasoning or explanations using a given pictorial representations and explains how the pictorial model represents a mathematical concept, or how it can be used to justify or refute a statement (with or without flaws) or how it can be used to generalize. | - Tasks provide visual (drawn) representations for students explain how a given visual representation represents a mathematical concept OR  
- Tasks provide a visual representation for students to explain how it can justify or refute a statement or reasoning OR  
- Tasks provide a given visual representation to make a conjecture or generalization.  
- Tasks should focus on content in standards that specify reasoning using visual mathematical representations (number lines, diagrams, and tables, etc.) |

**Type I Tasks** - Must have a simple context to support reasoning for a 1-point task.  
- May ask students to identify or select given reasoning that explains how the visual model represents a given mathematical concept  
- May ask students to use the visual model and select a statement or work that will justify or refute a given conjecture  
- May ask students to use the given visual model and select the correct generalization that the model proves is true

**Type II Tasks** - Must have context rich enough to support reasoning for a 3-point task.  
- Constructed response tasks allow students provide work and/or a written explanation and/or use the drawing tool to describe their own reasoning.  
- Tasks may prompt students to explain why the pictorial representations does or does not represent the mathematical concept or procedure; or to justify or refute an argument,

| 3.R.2      | Identify flawed thinking/reasoning and explain how to correct the thinking or work. | - Tasks prompt students to identify the flaw in thinking/reasoning and explain how to correct the thinking or work |

**Type I Tasks** - Must have a simple context to support a 1-point task  
- Provide a statement or work with flawed thinking/reasoning and have students identify the flaw OR  
- Prompt students to select or identify given statements or work that describe how to correct the flaw. (could be correct work)

**Type II Tasks** - Must have context rich enough to support reasoning for a 3-point task.  
- Constructed response tasks allows students to explain the flaw AND how to correct the flaw using written explanations with words, work, or use of the drawing tool to support or further explain their own reasoning.
<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Evidence Statement</th>
<th>Clarifications</th>
</tr>
</thead>
</table>
| 3.R.3     | Prove or disprove a statement, conjecture or generalization, using correct and precise mathematical examples (visual representation, words, symbols, equations or expressions) | - Tasks should state a conjecture based on a mathematical concept that is either true or false. Students are then prompted to provide specific mathematically correct examples. Examples should be appropriate and precise.  
- Tasks should require students to provide at least 2 and no more than 3 examples.  
- Tasks should not provide or expect answers that are in the negative.  
**Type I Tasks** - Must have a simple context with reasoning to support a 1-point task.  
  - Provide a conjecture or generalization and ask students to select 2 examples that prove or disprove the statement  
  - Students may select examples that may be visual representation, words and symbols, equations or expressions to prove or disprove the conjecture.  
**Type II Tasks** - Must have context rich enough to support reasoning for a 3-point task.  
  - Constructed response tasks allow students to prove or disprove a statement, conjecture, or generalization with mathematical examples.  
  - Students provide at least two examples that may be visual representation, words and symbols, equations, or expressions. |
| 3.R.4     | Reason mathematically to create a correct and precise solution to a real-world problem and be able to explain why the answer is mathematically correct | - The content scope of tasks is based on evidence statements that ask students to explain their thinking/reasoning to major mathematics concepts in the grade.  
**Type I Tasks** - Must have real-world problems with simple context to support a 1-point task.  
  - Tasks may ask students to identify the steps that would justify why the solution to a problem or a mathematical concept is true.  
  - Tasks could provide solution paths that describe the most common reasoning strategies and prompt students to select the correct solution path.  
**Type II Tasks** - Must have context rich enough to support reasoning for a 3-point task.  
  - Constructed response Type II tasks allow the students to provide their own solution path to justify why the solution to the problem is correct.  
  - Students should be prompted to represent their reasoning using complete and precise work, an explanation using words and or symbols, and/or the drawing tool. |
MCAP Grade 3 Evidence Statements

**Modeling** - One-point items could be assessed using 3.M1-1, 3.M1-2, or 3.M1-3. Three-point items could be assessed with 3.M1-4 and/or 3.M1-5 or a combination of two or more one-point evidence statements depending on the context of the problem situation. Calculators will be available for all modeling items.

<table>
<thead>
<tr>
<th>MCCRS Code</th>
<th>Evidence Statement</th>
<th>Clarifications</th>
</tr>
</thead>
</table>
| 3.M.1-1    | Determine the problem that needs to be solved in a real-world, situation.          | • Tasks do not require a solution.  
• Some tasks may include charts or graphs that could be analyzed for information about the problem.  
• Some tasks could require students to describe, in their own words, the problem that needs to be solved. (What is the problem that needs to be solved?)  
• Some tasks could provide a real-world situation without a question to solve and students would be prompted to create a question that could be asked based on the problem situation.  
• Some tasks could require students to restate the problem in their own words. |
| 3.M.1-2    | Determine the information that is needed to solve a problem in a given real-world situation. (What information is needed to solve the situation, no operations or a solution path is needed) | • Tasks do not require a solution, expressions, or equations.  
• Tasks may include charts or graphs that can be analyzed for information.  
• Some tasks may prompt students to identify the information, from a given problem, that is needed to solve the problem.  
• Some tasks may not provide all of the information needed to solve the problem. Students will make assumptions based on the information that is given in the problem |
| 3.M.1-3    | Identify the mathematics that is needed to create a solution path for a real-world situation. (No solution path, just identify which operations will be needed to solve the problem) | • Tasks do not require a solution path with answers. Tasks could prompt the students to identify the sequence of operations needed to create a solution path. (For example, “First add then subtract”)  
• Tasks could prompt students to identify or write an expression with the correct sequence of operations, write an equation with a letter for the answer, or write expressions.  
• Responses should be mathematically correct and precise. |
| 3.M.1-4    | Create a solution path that represents the mathematics needed to solve a real-world situation. | • Tasks must provide a problem scenario that allows for a solution path that shows two-steps.  
• Tasks should prompt students to represent a solution path using correct and precise mathematical representations. (words, symbols, drawings, etc.)  
• Tasks would require a complete and accurate solution path that includes the answer. |
| 3.M.1-5    | Evaluate a partial or complete solution to a real-world situation. (Check work) | • Tasks require students to analyze a given solution path (partial or complete) to determine if it is a mathematically correct solution path for the given real-world situation. If the solution path is correct, then students should explain why it is correct.  
• If the solution path is incorrect, students should be prompted to improve or refine the problem solution. |

**Addition and Subtraction Situations**

September 25, 2019
Maryland State Department of Education
## MCAP Grade 3 Evidence Statements

<table>
<thead>
<tr>
<th>Add to</th>
<th>Change Unknown</th>
<th>Start Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>A bunnies sat on the grass. B more bunnies hopped there. How many bunnies are on the grass now? A + B = ?</td>
<td>A bunnies were sitting on the grass. Some more bunnies hopped there. Then there were C bunnies. How many bunnies hopped over to the first A bunnies? A + ? = C</td>
<td>Some bunnies were sitting on the grass. B more bunnies hopped there. Then there were C bunnies. How many bunnies were on the grass before? ? + B = C</td>
</tr>
<tr>
<td>Take From</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C apples were on the table. I ate B apples. How many apples are on the table now? C - B = ?</td>
<td>C apples were on the table. I ate some apples. Then there were A apples. How many apples did I eat? C - ? = A</td>
<td>Some apples were on the table. I ate B apples. Then there were A apples. How many apples were on the table before? ? - B = A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Put Together/ Take Apart</th>
<th>Total Unknown</th>
<th>Both Addends Unknown</th>
<th>Addend Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>A red apples and B green apples are on the table. How many apples are on the table? A + B = ?</td>
<td>Grandma has C flowers. How many can she put in her red vase and how many in her blue vase? C = ? + ?</td>
<td>C apples are on the table. A are red and the rest are green. How many apples are green? A + ? = C C – A = ?</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compare</th>
<th>Bigger Unknown</th>
<th>Smaller Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>More Version suggests operation</strong></td>
<td>Julie has B more apples than Lucy. Lucy has A apples. How many apples does Julie have? A + ? = C</td>
<td>Fewer version suggests operation</td>
</tr>
<tr>
<td><strong>Fewer Version suggests wrong operation</strong></td>
<td>Lucy has B fewer apples than Julie. Lucy has A apples. How many apples does Julie have? A + ? = C</td>
<td>More Version suggests wrong operation</td>
</tr>
<tr>
<td>How many more? Version</td>
<td>Lucy has A apples. Julie has C apples. How many more apples does Julie have than Lucy? A + ? = C</td>
<td>Fewer version suggests operation</td>
</tr>
<tr>
<td>How many fewer? Version</td>
<td>Lucy has A apples. Julie has C apples. How many fewer apples does Lucy have than Julie? A + ? = C</td>
<td>More Version suggests wrong operation</td>
</tr>
</tbody>
</table>

| Difference is Unknown | | |
|-----------------------| | |
## MCAP Grade 3 Evidence Statements
### Multiplication and Division Situations

<table>
<thead>
<tr>
<th>Problem Situation</th>
<th>Unknown Product</th>
<th>Unknown Factor (group size)</th>
<th>Unknown Factor (number of groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Equal Groups of Objects</strong></td>
<td><strong>Unknown Product</strong>&lt;br&gt;There are ( A ) bags with ( B ) plums in each bag. How many plums are there in all?</td>
<td><strong>Group Size Unknown</strong>&lt;br&gt;If ( C ) plums are shared equally into ( A ). There are ( C ) plums with ( A ) plums in each bag. How many plums are in each bag ((b))?</td>
<td><strong>Number of Groups Unknown</strong>&lt;br&gt;If ( C ) plums are shared equally into ( A ). There are ( C ) plums with the same amount of plums in each bag ((A)). How many bags are filled with ( A ) number in each bag?</td>
</tr>
<tr>
<td><strong>Arrays</strong></td>
<td>There are ( A ) rows of apples with ( B ) in each row. How many apples are there?</td>
<td>If ( C ) apples are arranged into ( A ) equal rows, how many apples will be in each row?</td>
<td>If ( C ) apples are arranged into equal rows of ( B ) apples, how many rows will there be?</td>
</tr>
<tr>
<td><strong>Arrays with Rows and Columns Language</strong></td>
<td><strong>The apples in the grocery window are in ( A ) rows and ( B ) columns. How many apples are there?</strong></td>
<td>If ( C ) apples are arranged into an array with ( A ) rows, how many columns of apples are there?</td>
<td>If ( C ) apples are arranged into an array with ( B ) columns, how many rows are there?</td>
</tr>
</tbody>
</table>

**Compare \( A > 1 \)**

- **Larger Unknown**
  A blue hat costs $\( B \). A red hat costs \( A \) times as much as the blue hat. How much does the red hat cost?  
  Smaller Unknown
  A red hat costs $\( C \) and that is \( A \) times as much as a blue hat costs. How much does a blue hat cost? 
  Multiplier Unknown
  A red hat costs $\( C \) and a blue hat costs $\( B \). How many times as much does the red hat cost as the blue hat? 

**Compare \( A < 1 \)**

- **Smaller Unknown**
  A blue hat costs $\( B \). A red hat costs \( A \) as much as the blue hat. How much does the red hat cost?  
  Larger Unknown
  A red hat costs $\( C \) and that is \( A \) of the cost of a blue hat. How much does a blue hat cost? 
  Multiplier Unknown
  A red hat costs $\( C \) and a blue hat costs $\( B \). What fraction of the cost of the blue hat is the cost of the red hat?
Calculator Policy

Computer-Based Assessments

A grade/course appropriate calculator will be provided through the computer-based delivery system for the MCAP Mathematics Assessments for grades 3-8 and Algebra I, Geometry and Algebra II on tasks that allow the use of a calculator.

<table>
<thead>
<tr>
<th>Grade/Course</th>
<th>Description of the Provided Calculator</th>
</tr>
</thead>
</table>
| • 3-5        | • four-function calculator with square root and percentage functions modeling and reasoning items only  
               | • Desmos version of four-function calculator also available |
| • 6-7        | • four-function calculator with square root and percentage functions  
               | • Desmos version of four-function calculator also available |
| • 8          | • scientific calculator  
               | • Desmos version of scientific calculator also available |
| • Algebra I  | • graphing calculator similar to the TI-84  
               | • Desmos version of graphing calculator also available |
| • Geometry   |                                         |
| • Algebra II |                                         |

- The LSS must ensure that student accommodations are met. Students whose accommodations specify the use of a calculator for non-calculator tasks on a mathematics assessment, must be provided with an appropriate hand-held calculator, based on the language in the student’s IEP or 504-plan. No online calculator will be available for non-calculator tasks.

- For 2019-2020 administrations of the MCAP Mathematics assessments, all students are permitted to use an allowable hand-held calculator with a cleared memory for calculator active units.
**Calculator Active Units**

<table>
<thead>
<tr>
<th>Grade Band/Courses</th>
<th>Non-Calculator Units</th>
<th>Calculator Active Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades 3-5</td>
<td>2 and 4</td>
<td>1 and 3</td>
</tr>
<tr>
<td>Grades 6-8,</td>
<td>1</td>
<td>2, 3, and 4</td>
</tr>
<tr>
<td>Algebra I, Geometry and Algebra II</td>
<td>1</td>
<td>2, 3, and 4</td>
</tr>
</tbody>
</table>

**Paper-Based Assessments**

The LSS must provide a student taking a paper-based mathematics assessment with a LSS owned allowable calculator with a cleared memory during the administration of the calculator active units of a MCAP Mathematics Assessment.

<table>
<thead>
<tr>
<th>Grade/Course</th>
<th>Allowable Calculator for Calculator Active Units</th>
<th>Restrictions</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-5</td>
<td>four-function calculator with square root and percentage functions for units 2 and 4 only</td>
<td>• No tablet, laptop or phone-based calculators are allowed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Calculators with the following features are NOT allowed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Computer Algebra System (CAS)</td>
</tr>
<tr>
<td>6-7</td>
<td>four-function calculator with square root and percentage functions</td>
<td>o “QWERTY” keyboards</td>
</tr>
<tr>
<td>8</td>
<td>scientific calculator</td>
<td>• Students may not share calculators</td>
</tr>
<tr>
<td>Algebra I, Geometry and Algebra II</td>
<td>graphing calculator similar to the TI-84 with a cleared memory</td>
<td></td>
</tr>
</tbody>
</table>

- The LSS must ensure that student accommodations are met. A student whose accommodation specifies the use of a calculator on the non-calculator units of a mathematics assessment, must be provided with the IEP or 504 Plan specified calculator during all units of the mathematics assessments.
Frequently Asked Questions about the MCAP Calculator Policy

1. **Can students with no accommodations use a hand-held calculator for computer-based assessments?**
   No. A student will encounter computer-active assessment items randomly throughout a given unit. A calculator will become available on the screen for calculator active items.

2. **Can students use their own calculators on the MCAP Mathematics assessments?**
   No. A grade/course appropriate calculator will be provided through the computer-based delivery system for the MCAP Mathematics Assessments for grades 3-8 and Algebra I, Geometry and Algebra II on tasks that allow the use of a calculator. The LSS is responsible for providing the appropriate hand-held calculator, with a cleared memory, during the administration of the calculator active units on paper-based assessments.

3. **Can a student use a TI-Inspire (non-CAS) calculator on a paper-based assessment?**
   Yes. A school may provide a TI-Inspire (non-CAS) calculator, with a cleared memory, to a student for use on the calculator active units of a paper-based assessment.