

AASA Math Friday Focus

October 16, 2026



Melanie Hill - Achievement Assessment Content Developer
Math and Science

Katie DiTullio – Director of Achievement Assessments



Just a Reminder -

AI notetakers will not be admitted into the Friday Focus webinars. A recording and PowerPoint presentation will be posted at <https://www.azed.gov/assessment/statewide-assessments-webinars> following each webinar. Please email Testing@azed.gov with any questions.

Agenda

- Assessment Webpage
- Testing Dates
- Item Specs
- PLDs
- Resources
- Sample Test
- ADE Math Standards Team

Assessment Webpage

Assessments

[AASA](#)

[AzSCI](#)

Resources

Educator Committees



AASA Test Dates



Test Administration Information



ARIZONA DEPARTMENT OF
EDUCATION

AASA Sample Tests and Student Readiness Tool



AASA Blueprints and Cut Scores



AASA Item Specifications



AASA Performance Level Descriptors



AASA Additional Math Resources



Reporting



<https://www.azed.gov/assessment/aasa>

Spring 27 Testing Dates

AASA Test Dates

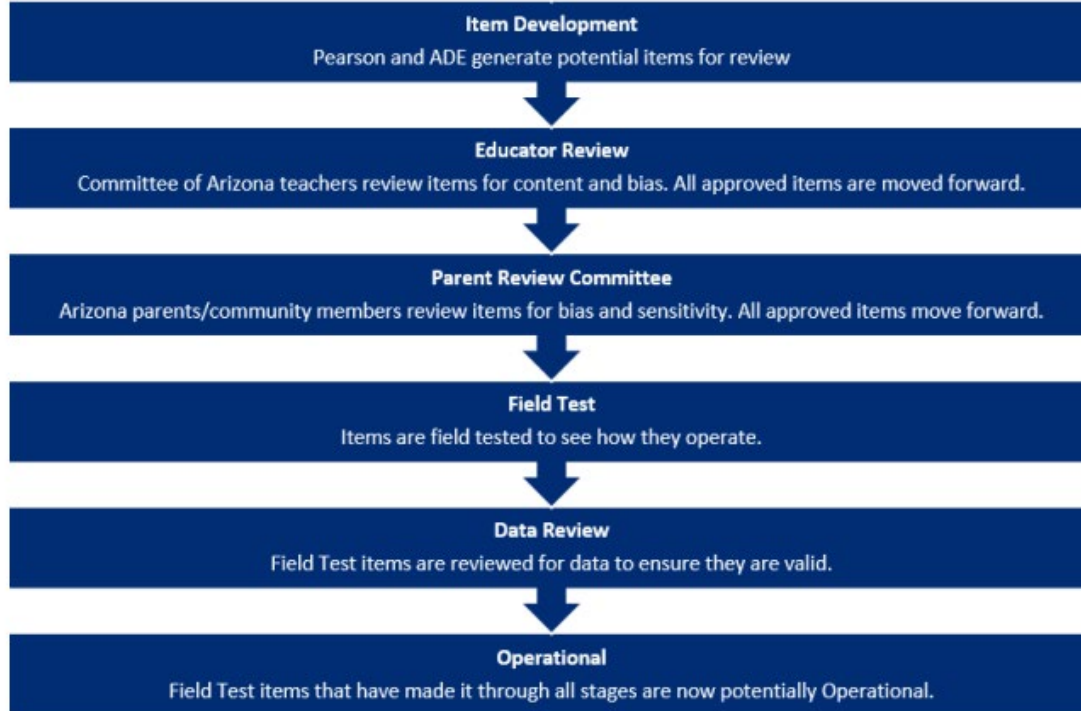
SPRING 2027 AASA TEST WINDOW

- » Paper-Based Testing: April 12-23, 2027
- » Computer-Based Testing (Grades 3-8 Writing and Grade 3 Oral Reading Fluency): April 12-23, 2027
- » Computer-Based Testing (Grades 3-8 Reading and Math): April 12-May 7, 2027

[2026-2027 Assessments Overview](#)

[2026-2027 Detailed Testing Calendar](#)

The Item Development Process



Blueprints

Grade 3 AASA Blueprint 2016 Standards		
Reporting Category	Min.	Max.
Operations and Algebraic Thinking, and Numbers in Base Ten	49%	53%
<i>Operations and Algebraic Thinking</i>	38%	42%
<i>Numbers in Base Ten</i>	9%	13%
Numbers and Operations-Fractions	18%	22%
Measurement, Data, and Geometry	26%	30%
<i>Measurement & Data and Geometry</i>	26%	28%
<i>Geometry</i>	1%	4%

Grade 7 AASA Math Blueprint 2016 Standards		
Reporting Category	Min.	Max.
Ratios & Proportions	19%	23%
The Number System	19%	23%
Expressions & Equations	23%	27%
Geometry and Statistics & Probability	27%	35%
<i>Geometry</i>	15%	19%
<i>Statistics and Probability</i>	12%	16%

Grade 8 AASA Math Blueprint 2016 Standards		
Reporting Category	Min.	Max.
Functions	21%	25%
Expressions & Equations	29%	33%
Geometry	17%	21%
Statistics & Probability and The Number System	19%	27%
<i>Statistics and Probability</i>	4%	8%
<i>Number System</i>	15%	19%

*No Calculators in Grades 3-6

*Calculators in Grades 7-8 Unit 1 ONLY

Item Specifications (Specs)

AASA Item Specifications

AASA Item Specifications are aligned to the 2016 ELA and Mathematics Standards.

ELA ITEM SPECIFICATIONS

- » [ELA Grade 3](#)
- » [ELA Grade 4](#)
- » [ELA Grade 5](#)
- » [ELA Grade 6](#)
- » [ELA Grade 7](#)
- » [ELA Grade 8](#)

MATH ITEM SPECIFICATIONS

- » [Math Grade 3](#)
- » [Math Grade 4](#)
- » [Math Grade 5](#)
- » [Math Grade 6](#)
- » [Math Grade 7](#)
- » [Math Grade 8](#)

Item Formats/Types

Item Format	Description
Multiple Choice	The student is directed to select one correct answer from among 4 options.
Multiple Select	The student is directed to select all the correct answers from among a number of options. These items are different from multiple-choice items, which allow the student to select only one correct answer.
Bar Graph	Bar Graph Interaction allows the student to drag bars vertically or horizontally along numerical values. Individual bars, histograms, and clusters are supported.
Equation Editor	Equation Editor allows the student to use a palette of buttons to enter a numerical response or to create mathematical equations and expressions.

Item Format	Description
Fraction Model	Fraction Model allows the student to divide a shape (circle or rectangle) into varying numbers of segments by clicking a "Fewer" or "More" button and select those segments, which shades those segments with a solid color.
Gap Match	Gap Match allows the student to drag text or images (also called choices) to a gap (a location on a background image).
Hot Spot	Hot Spot allows the student to select one or more areas called hot spots on an image.
Inline Choice	An Inline Choice item is like a fill-in-the-blank item where the student selects a single text option from a drop-down menu within a table or inline text. The item may contain multiple blanks.
Match Table Grid	The Match Table Grid interaction allows students to select radio buttons or check boxes in cells to indicate a match between the column and row labels.

4 5 6 7 8 10 12 16

2	4		8
3	6	9	
4		12	16
	10	15	20

4 5 6 7 8 10 12 16

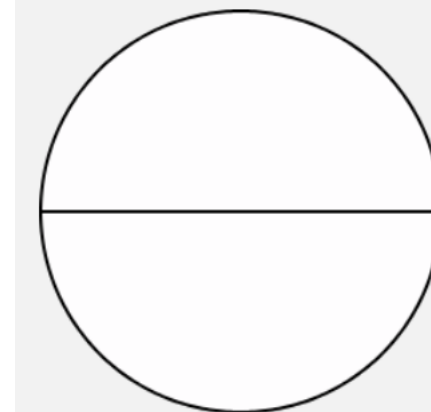
2	4		8
3	6	9	
4		12	16
	10	15	20



Fewer

More

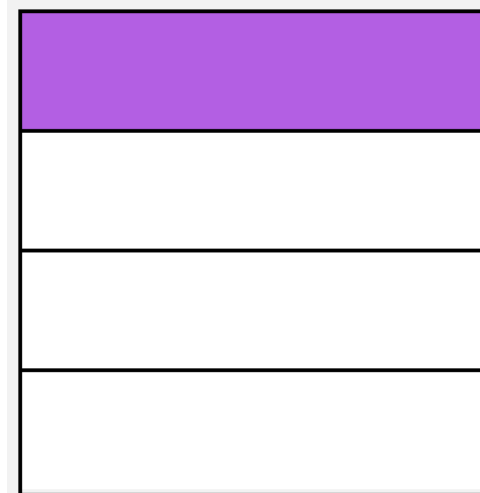
Reset



Fewer

More

Reset



Fewer

More

Reset

Enter your answer in the space provided.

←

→

↶

↷

✕

1	2	3
4	5	6
7	8	9
	0	$\frac{\Box}{\Box}$
.	-	$\frac{\Box}{\Box}$

Enter your answer in the space provided.

←

→

↶

↷

✕

1	2	3			
4	5	6	+	-	×
7	8	9	<	=	>
	0	$\frac{\Box}{\Box}$	()		
.	-	$\frac{\Box}{\Box}$			

Enter your answer in the space provided.

←

→

↶

↷

✕

1	2	3	r			
4	5	6	+	-	.	÷
7	8	9	<	≤	=	≥
	0	$\frac{\Box}{\Box}$	$\Box^\Box$	()		$\sqrt{\Box}$
.	-	$\frac{\Box}{\Box}$			$\sqrt[n]{\Box}$	π

Item Specs

3.OA.A.3

Content Standards	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.
Explanations	Students use a variety of representations for creating and solving one-step word problems, i.e., numbers, words, pictures, physical objects, or equations. They use multiplication and division of whole numbers up to 10 x 10. Students explain their thinking, show their work by using at least one representation, and verify that their answer is reasonable.
Content Limits	All numbers must be 100 or less. Use whole numbers only. Give only one unknown per equation. Unknown may be in any position. Do not use letter variables for the unknown in this standard. Instead, use a box or other symbol to represent the unknown. Do not use the words "times as much/many."
Context	Context is required.

Sample Task Demands	Common Item Formats
Students will be required to solve a simple word problem involving multiplication or division.	- Multiple Choice - Multiple Select - Equation Editor - Gap Match - Hot Spot - Inline Choice
Students will be required to create an equation to model a simple situation with multiplication or division.	
Students will be required to model multiplication and division equations by sorting objects into equal groups.	
Students will be required to create an equation to model a complex situation with multiplication or division.	
Students will be required to create a model using a multiplication or division equation that represents a complex situation.	

Performance Level Descriptors

Minimally Proficient	Partially Proficient
<u>Identify products and quotients within 100 to solve word problems involving equal groups and arrays when a visual model is given.</u>	<u>Multiply and divide within 100 to solve word problems involving equal groups and arrays when a visual model is given.</u>
Proficient	Highly Proficient
<u>Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.</u>	<u>Multiply and divide within 100 to solve multi-step word problems involving equal groups, arrays, and measurement quantities.</u>

PLDS

AASA Performance Level Descriptors

AASA Performance Level Descriptors (PLDs) are aligned to the 2016 English Language Arts and Mathematics Standards.

ELA

- » [ELA Grade 3](#)
- » [ELA Grade 4](#)
- » [ELA Grade 5](#)
- » [ELA Grade 6](#)
- » [ELA Grade 7](#)
- » [ELA Grade 8](#)
- » [ELA Grades 3-8](#)

MATH

- » [Math Grade 3](#)
- » [Math Grade 4](#)
- » [Math Grade 5](#)
- » [Math Grade 6](#)
- » [Math Grade 7](#)
- » [Math Grade 8](#)
- » [Math Grades 3-8](#)

Math Grade 3
Performance Level Descriptors (PLDs)

Standard	Minimally Proficient	Partially Proficient	Proficient	Highly Proficient
	The Minimally Proficient student	The Partially Proficient student	The Proficient student	The Highly Proficient student
Operations and Algebraic Thinking				
3.OA.A.1	Identify whole number products with visual support.	Interpret whole number products with visual support.	Interpret products of whole numbers as the total number of objects in equal groups (e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each).	Interpret products of whole numbers within 100, representing context using pictures, numbers, and words.
3.OA.A.2	Identify whole number quotients with visual support.	Interpret whole number quotients with visual support.	Interpret whole number quotients of whole numbers (e.g., interpret $56 \div 8$ as the number of objects in each group when 56 objects are partitioned equally into 8 groups, or as a number of groups when 56 objects are partitioned into equal groups of 8 objects each).	Interpret quotients of whole numbers within 100, representing context using pictures, numbers, and words.
3.OA.A.3	Identify products and quotients within 100 to solve word problems involving equal groups and arrays when a visual model is given.	Multiply and divide within 100 to solve word problems involving equal groups and arrays when a visual model is given.	Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities.	Multiply and divide within 100 to solve multi-step word problems involving equal groups, arrays, and measurement quantities.
3.OA.A.4	Recognize the unknown whole number in a multiplication or division equation, when the unknown number is the solution using visual support/arrays.	Determine the unknown whole number in a multiplication or division equation, when the unknown number is the product or quotient using visual support/arrays.	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 $8 \times \square = 48$, $5 = \square \div 3$, $6 \times 6 = \square$.	Determine an unknown whole number in a multiplication and division equation. Students will use the given context to generate an equation.

Resources

AASA Additional Math Resources

- » [Calculator Guidance](#)
- » [Hess Math Matrix](#)
- » [Desmos Scientific Calculator](#)
- » [Grid-In Response Items for Paper-Based Testing](#)
- » [Read-Aloud Guidance for Paper-Based Testing](#)

Sample Test

AASA Sample Tests and Student Readiness Tool

AASA Sample Tests and Student Readiness Tool

Directions: Select **Arizona**, then click on **Mic Check and Sample Tests**.

A username and password are not needed to access the Sample Tests and Student Readiness Tool.

AASA SAMPLE TEST SCORING GUIDES - ELA

- » [AASA Scoring Guide - ELA Grade 3](#)
- » [AASA Scoring Guide - ELA Grade 4](#)
- » [AASA Scoring Guide - ELA Grade 5](#)
- » [AASA Scoring Guide - ELA Grade 6](#)
- » [AASA Scoring Guide - ELA Grade 7](#)
- » [AASA Scoring Guide - ELA Grade 8](#)
- » [AASA Scoring Guide - ELA Oral Reading Fluency Grade 3](#)
- » [AASA Scoring Guide - ELA Writing Grade 3](#)
- » [AASA Scoring Guide - ELA Writing Grade 4](#)
- » [AASA Scoring Guide - ELA Writing Grade 5](#)
- » [AASA Scoring Guide - ELA Writing Grade 6](#)
- » [AASA Scoring Guide - ELA Writing Grade 7](#)
- » [AASA Scoring Guide - ELA Writing Grade 8](#)

AASA SAMPLE TEST SCORING GUIDES - MATH

- » [AASA Scoring Guide - Math Grade 3](#)
- » [AASA Scoring Guide - Math Grade 4](#)
- » [AASA Scoring Guide - Math Grade 5](#)
- » [AASA Scoring Guide - Math Grade 6](#)
- » [AASA Scoring Guide - Math Grade 7](#)
- » [AASA Scoring Guide - Math Grade 8](#)

[Sample Test Examples for Paper-Based Testing](#)

Sample Test

What it is for?

- Familiarize students to the testing platform (TestNav)
- Familiarize students with the different item types
- Familiarize students with the tools they may use

What it is not for?

- Predicting scores on AASA

<https://home.testnav.com/>

Educator Review ★

Item Review Educator
Committee composed of
Arizona practitioners
review and edit items.



Insert Yourself HERE



Questions?



Please feel free to contact us
with any questions

AASA@azed.gov

MATH STANDARDS

Friday Focus Assessment Webinar



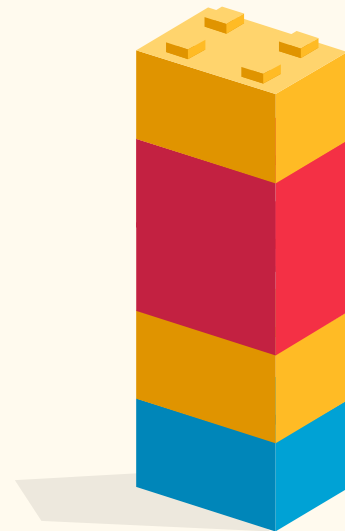
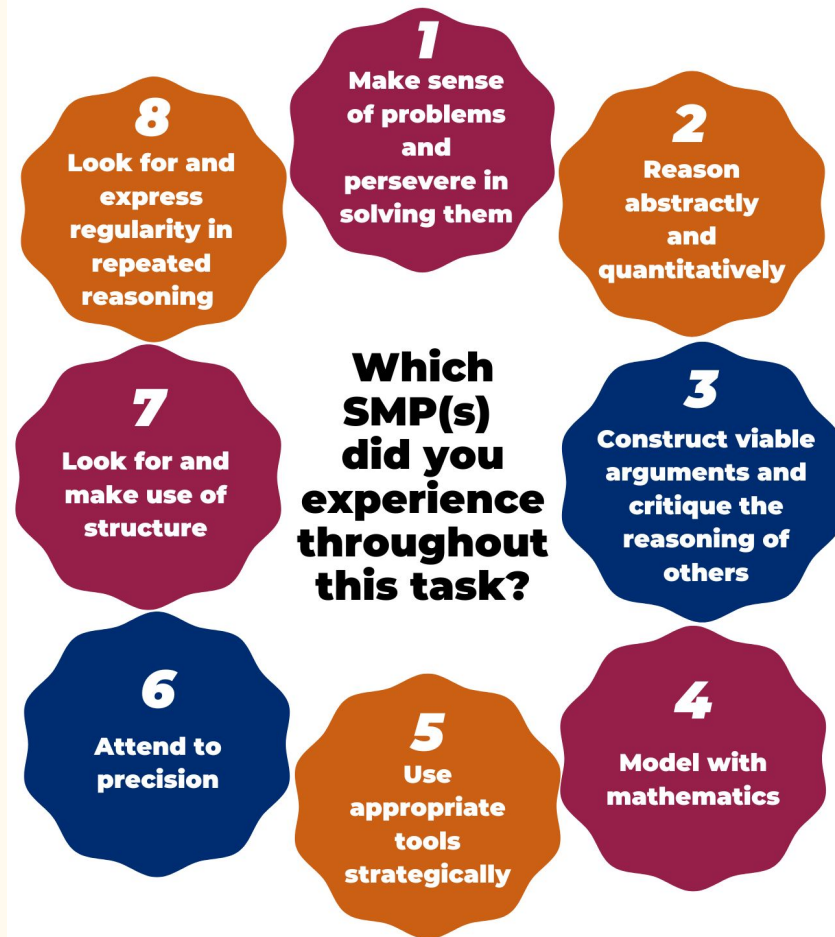
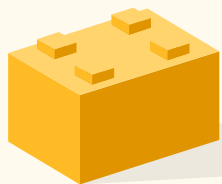
ARIZONA DEPARTMENT OF
EDUCATION

WHICH ONE DOESN'T BELONG?

Share in the
chat!



9	16
25	43





Academic Standards



Laurel Cherry
K-12 Math Specialist
ADE



Marisa Tualla
K12 Math Specialist
ADE



Eboney McKinney
K12 Math & Ed Tech Director
ADE

WORKING AGREEMENTS:

- ❖ Everyone is MATH person, ALL teachers and students can participate in mathematics at high levels!
- ❖ We may say some things that challenge your thinking and that is ok.
- ❖ Our goal is to create mathematically proficient students, and "I do, We do, You do" cannot achieve this.
- ❖ We are ALL learners in this space.
- ❖ Being fast at math $\neq$ being smart at math.



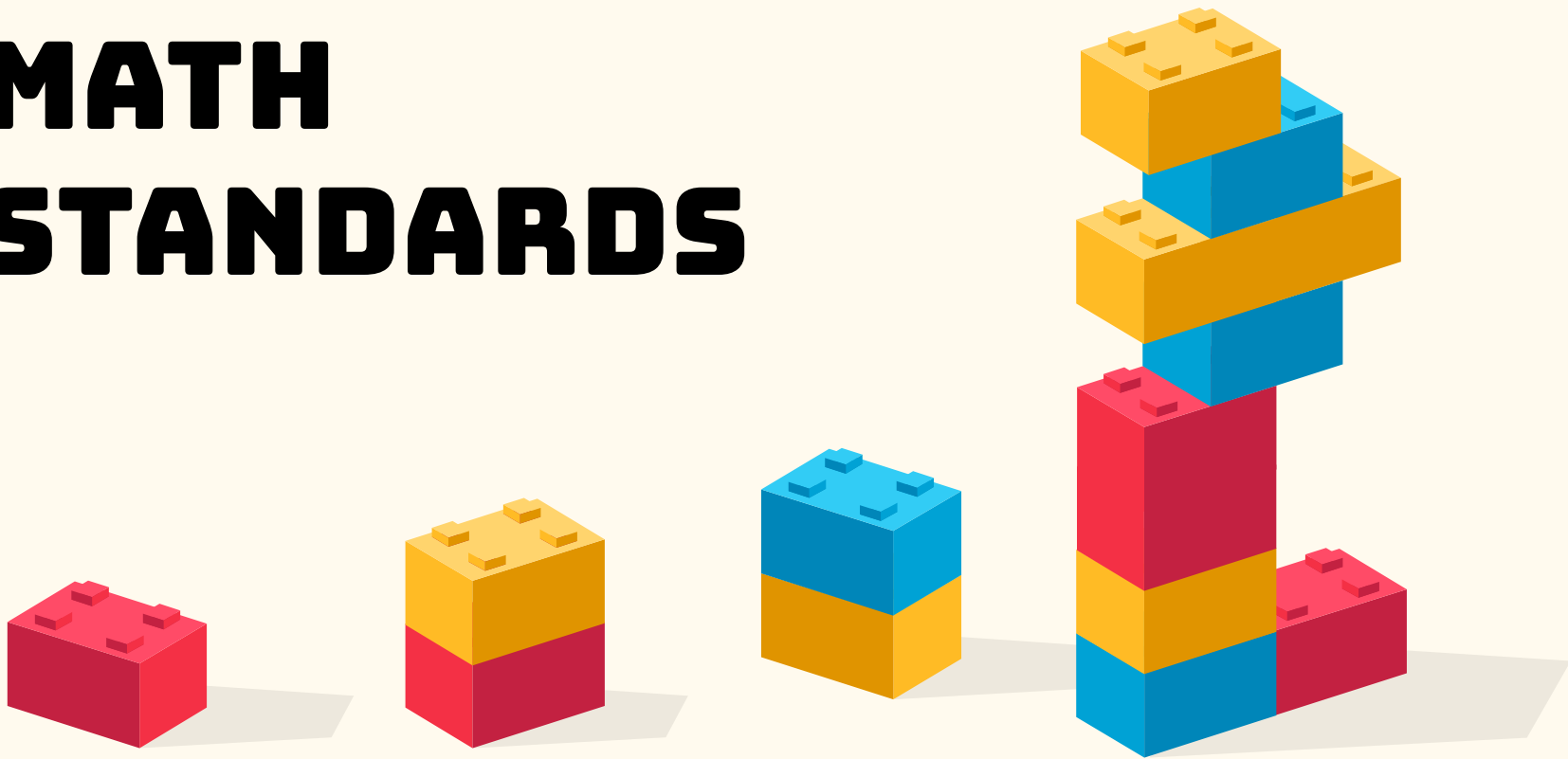
MATH STATE ASSESSMENT

In order to prepare students for AASA, teachers should:

1. Understand all parts of ALL math standards.
2. Build problem solvers, not test takers.



MATH STANDARDS



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.

Share in the chat!

1. What vocabulary, facts, or concepts must students know?
2. What represent, sketch, diagram, or model, should a student be able to demonstrate understanding of the standard?

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.

Algorithm based on
place value

$$482 + 354$$

$$\begin{array}{r} 400 + 80 + 2 \\ + 300 + 50 + 4 \\ \hline 700 + 130 + 6 \end{array}$$

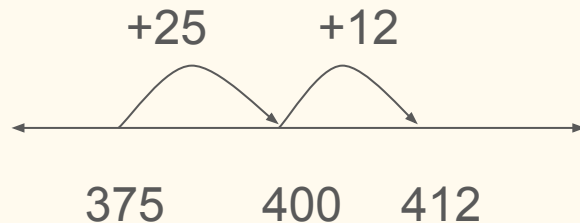
Properties of
operations

$$98 + 354$$

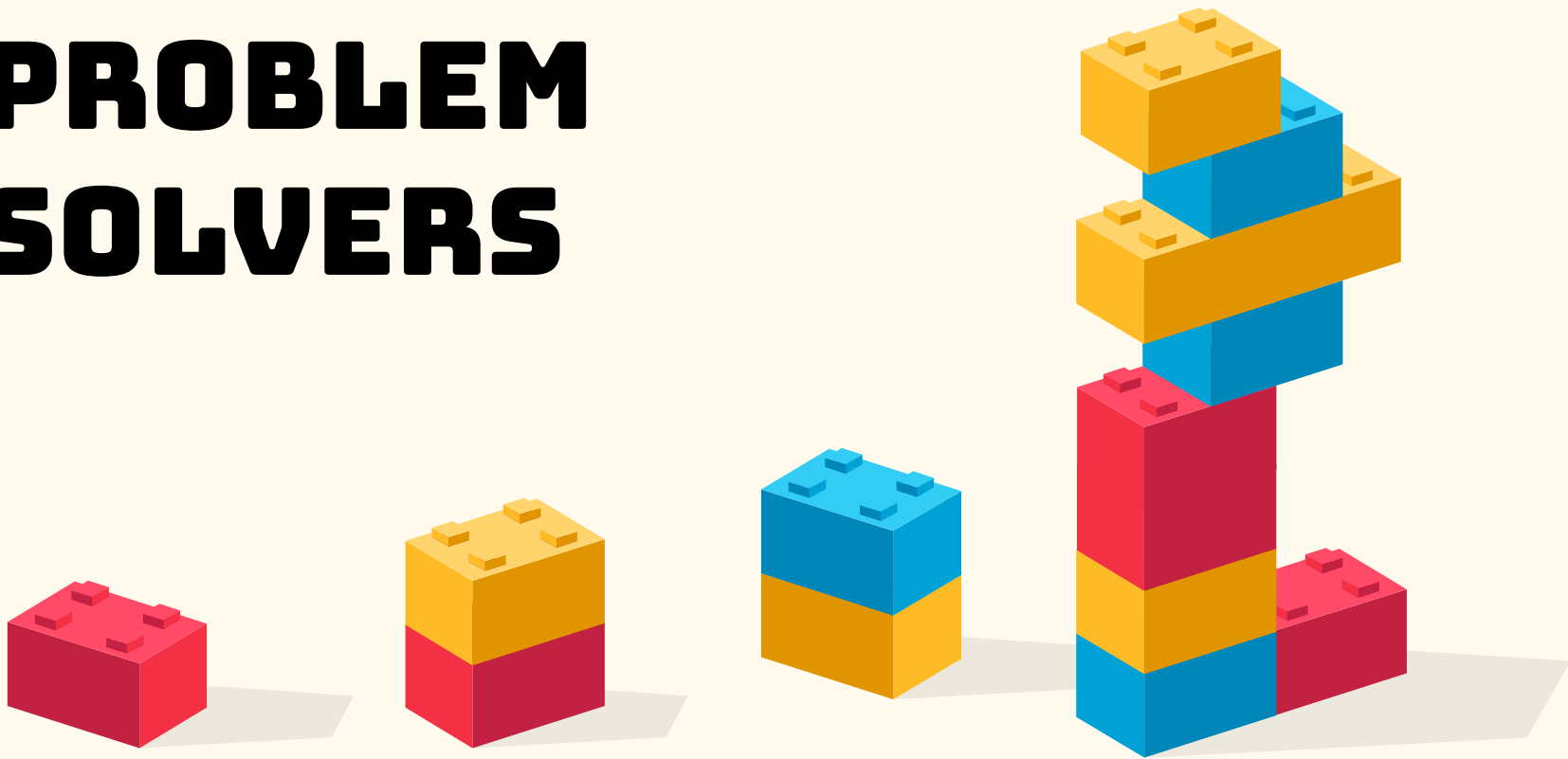
$$\begin{array}{l} 98 + (2 + 342) \\ (98 + 2) + 342 \\ 100 + 342 \end{array}$$

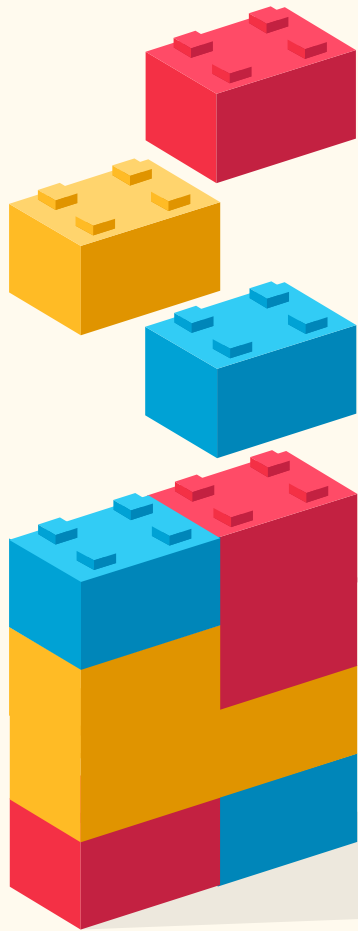
Relationship between
addition and subtraction

$$412 - 375$$

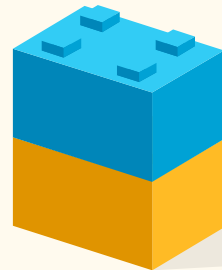
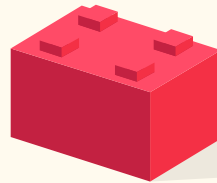


BUILDING PROBLEM SOLVERS





**SMP1 MAKE SENSE
OF PROBLEMS AND
PERSEVERE IN
SOLVING THEM**





**AVOID PROBLEM
SOLVING
HAZARD**

Making sense: 1

125
d 5 dogs in
How old is
epherd?



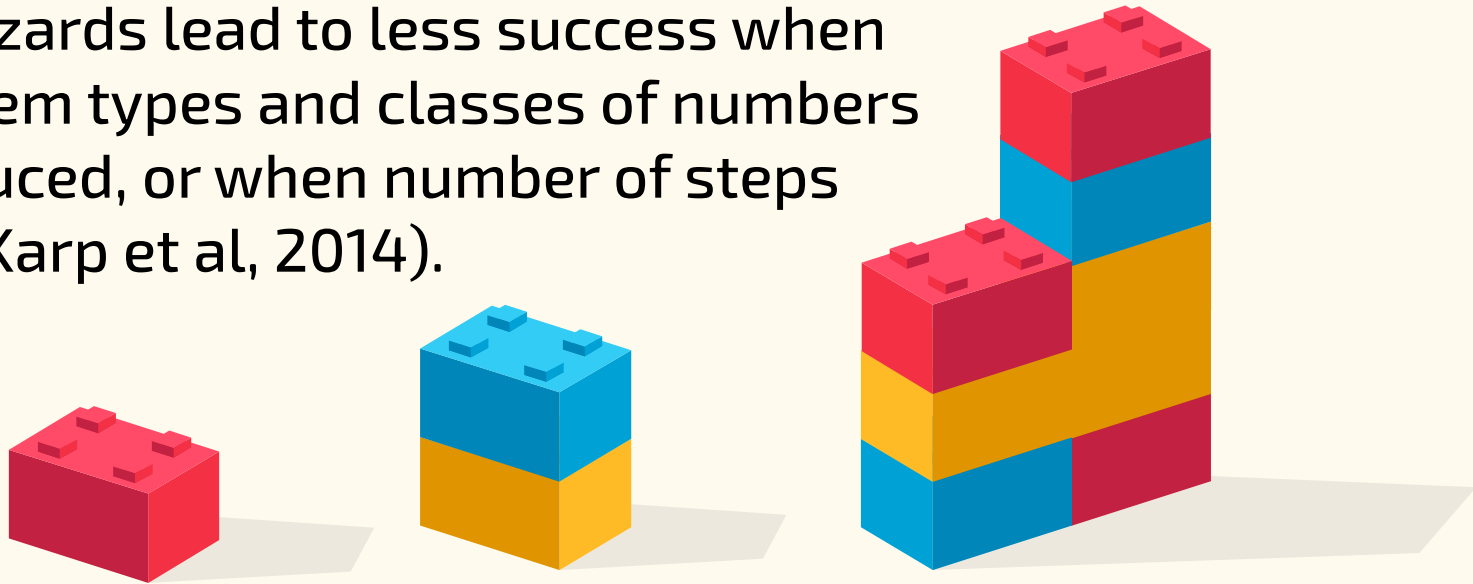


KEY WORDS

≠

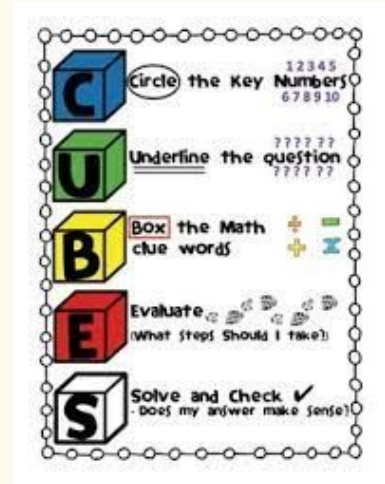
SENSE MAKING

Shortcuts, key words, mnemonics... such tricks and instructional approaches are well intended, but set the stage for setbacks, loss of retention, and frustration. Problem solving hazards lead to less success when new problem types and classes of numbers are introduced, or when number of steps increase (Karp et al, 2014).



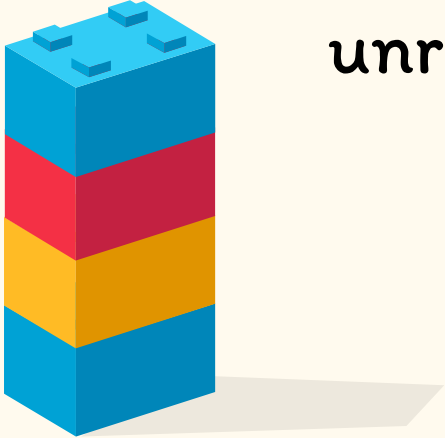
CUBES AND OTHER MNEMONICS

- ❖ Distills student thinking into a series of steps.
- ❖ Doesn't help students understand the question or the context.
- ❖ Doesn't support student to think or reason.



KEYWORDS

- ❖ This approach is more problematic than CUBES because it fully removes thinking from the process. A keyword approach is faulty and unreliable (Karp et al., 2014)



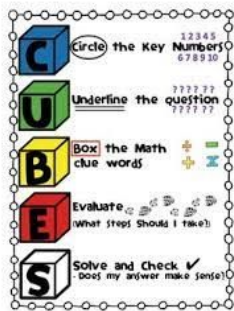
KEYWORDS			
			
• sum • total • altogether • perimeter • increased by • together • in all • and • perimeter • plus		• addend • combined • more than • added to	
			
• times • each • in all • twice • product • area • factor • multiple • multiplied by • product • multiply		• half • same • split • quotient • divisor • equal groups • each • separate • divided by • dividend • shared equally	
		• difference • less than • minus • take away • fewer • left over • exceed • are not • remain • minus	
		• how many more • reduced by • dropped by • decreased by • greater than • farther • left	



KEYWORDS

A

The Grade 3 class left 12 jackets on the playground and the Grade 4 class left 9 jackets on the playground. How many jackets were left on the playground?

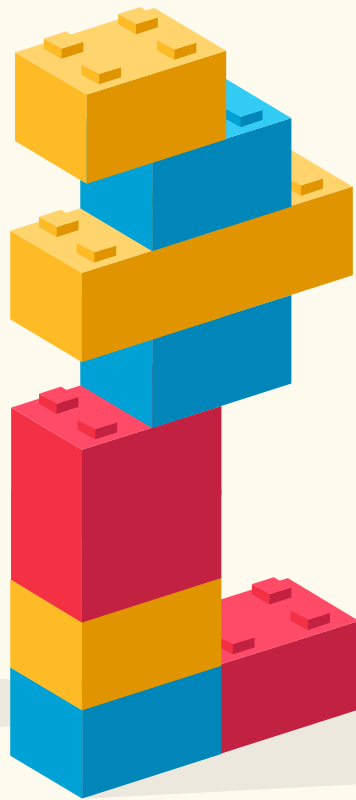
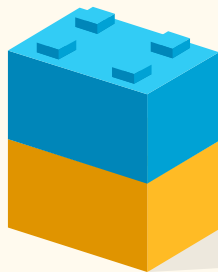
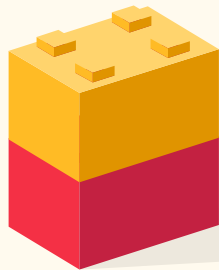
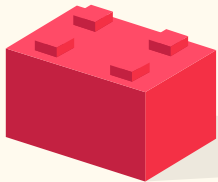


KEYWORDS			
+	• sum • total • altogether • perimeter • increased by • together • in all • and • perimeter • plus	• addend • combined • more than • added to	• difference • less than • minus • take away • fewer • left over • exceed • one less • remain • minus
×	• times • each • in all • twice • product • area • factor • multiple • multiplied by • product • as much as	• total • array • each of • columns • equal groups	• half • some • split • quotient • divisor • equal groups • each • separate • divided by • divided • shared equally

Share in the chat:

How might the hazard of keywords and CUBES affect students in these problems?

FINAL TIPS



HELPFUL TOOL

MULTIPLICATION CHART 1 - 12

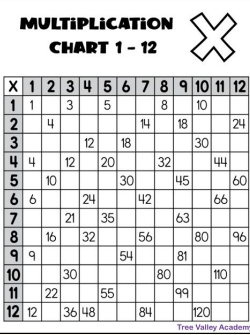


X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

- Multiplication and division
- Factors and multiples
- Equivalent fractions
- Ratios and proportions

HELPFUL TOOL

**MULTIPLICATION
CHART 1 - 12**



X	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

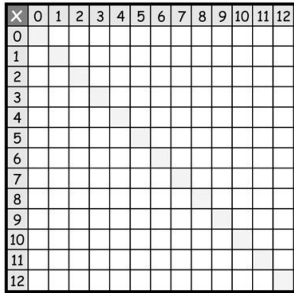
Tree Valley Academy

 **Multiplication Chart
(1 - 9)**

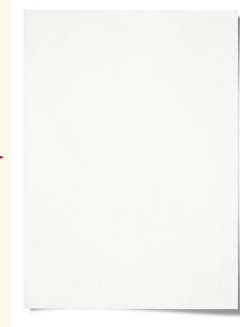
x	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9
2	2	4	6	8	10	12	14	16	18
3	3	6	9	12	15	18	21	24	27
4	4	8	12	16	20	24	28	32	36
5	5	10	15	20	25	30	35	40	45
6	6	12	18	24	30	36	42	48	54
7	7	14	21	28	35	42	49	56	63
8	8	16	24	32	40	48	56	64	72
9	9	18	27	36	45	54	63	72	81

Math Worksheets, Charts and Tables @ www.mathworksheetsland.com

Multiplication Chart (Blank)



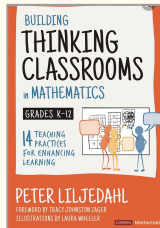
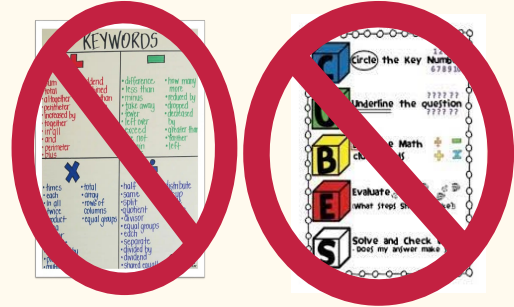
x	0	1	2	3	4	5	6	7	8	9	10	11	12
0													
1													
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													



- Students build understanding with patterns.
- Students can create their own and use on assessments.
- This applies to manipulatives, students can always draw a picture (CRA practice).

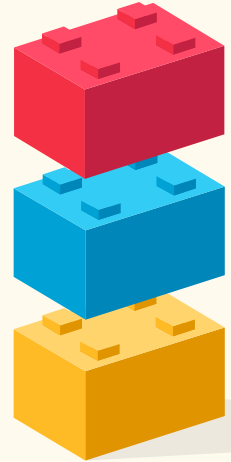
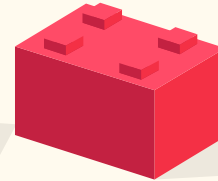
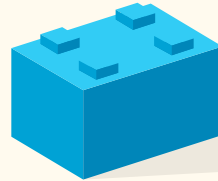
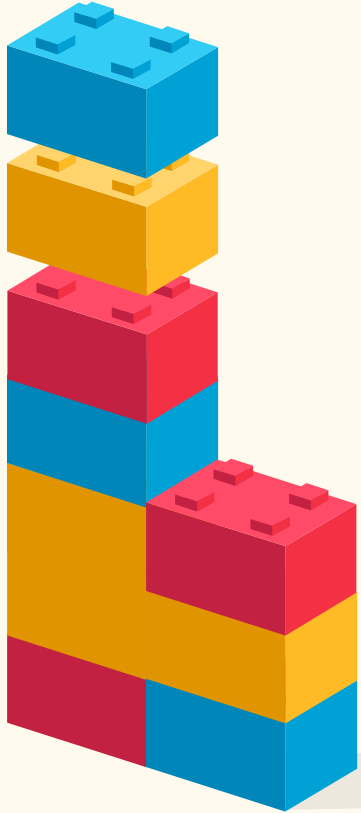
MICRO MOVES TO HELP STUDENTS MAKE SENSE OF PROBLEMS

- Remove posters
- Ask students to make sense of the situation:
 - What do you notice?
 - What are we trying to find out?
 - What's a reasonable estimate?
- Remove numbers
- Building Thinking Classrooms



There were kids eating ice cream. of the kids were eating chocolate ice cream. The rest of the kids were eating vanilla ice cream. How many kids were eating vanilla ice cream?

**REFLECT: WHAT IS
ONE CHANGE YOU CAN
MAKE TO HELP BUILD
PROBLEM SOLVERS?**



ACADEMIC STANDARDS PROFESSIONAL LEARNING SURVEY

8. DATE

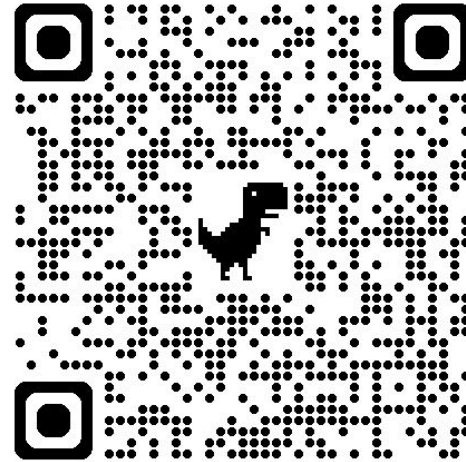
03/23/2026

9. SESSION TITLE

6-12 Building Problem Solvers

10. TRAINING FACILITATOR(S)

Tualla, Marisa



<https://forms.gle/2FNauuTYdVUK4pMt8>





Fluency

Accuracy

The of is purpose is understanding key get presented written make accuracy the as Speed of text in ideas help and to easier the but meaning sense to reading.

[ambleside1](#)

[mathleadership.org](#)

[m4lynn@ambleside.co.uk](#)

