



Foundational Lessons for Accelerating Math Education (FLAME) Unit Assessments

Purpose

Foundational Lessons for Accelerating Math Education (FLAME) provides teachers with tools to build, track, and support the development of grade-level math fluency for students in grades K-5. Materials are organized into three units per grade level. Each unit provides teachers with various activities designed to support the development of the expected [fluency skills](#) at each grade level. Units also include guidance to help teachers identify students whose skills are fluent, progressing, or emerging. Each unit provides parent reports explaining how families can support their child's learning.

FLAME unit assessments provide opportunities for students to apply skills and fluency built throughout the use of FLAME lessons. These assessments also provide opportunities for students to explain their thinking and processes to give teachers a deeper understanding of the student's knowledge and more information to make informed decisions about next steps for the student. FLAME unit assessment items along with the formative assessments included in each unit, can be used to track students' progress toward fluency.

Teachers should anticipate that some of their students will need additional practice with the skills beyond what is provided through the activities. By using the data collected through daily formative assessments and unit assessments and growing understanding of fluency development, teachers have the power to ensure that their students will build grade-appropriate [fluency skills](#).

Manipulatives

All students in kindergarten through Grade 1 should be allowed to use manipulatives on all FLAME unit assessments. Additionally, any student at any grade who has documented accommodations to use manipulatives should be allowed to use them on FLAME unit assessments. Beyond Grade 1, please see the rubric for the assigned question for guidance on manipulatives.

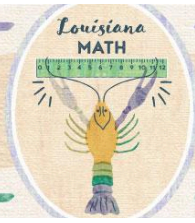
Scoring and Next Steps

If students score in the beginning range on any standard on the FLAME unit assessment please review FLAME activities for that standard with the students and readminister the FLAME unit assessment at the appropriate time for the student.

If you have additional questions or feedback on these assessments, please do not hesitate to contact the Louisiana Math team at STEM@la.gov.

Louisiana's Math Pillars





FLAME Grade 3 Unit 1 Assessment Teacher Answer Key

Item 1

Alex has 6 boxes of crayons. There are 8 crayons in each box.

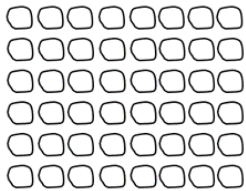
Draw a model and write a multiplication sentence to represent the situation. Explain your answers using numbers and words.

Standard: 3.OA.A.1

Interpret products of whole numbers.

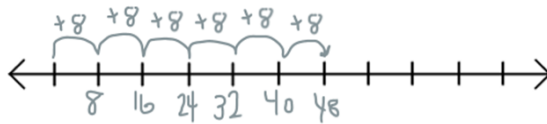
Sample Correct Drawings

Sample 1



I created 6 rows of 8.
Making 48 crayons in all.

Sample 2



I skip counted by adding 8 six times

Sample 3

$$6 + 6 + 6 + 6 + 6 + 6 + 6 + 6$$

I added 6 eight times to get 48.

****These are not the only acceptable drawings. Any model that shows the result of the value of 6 groups of 8, or equivalence is considered correct.***

Sample Correct number sentences

Sample 1

$$6 \times 8$$

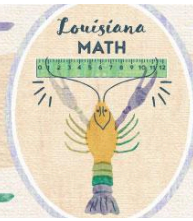
Sample 2

$$8 \times 6$$

Rubric

Consistent - Student's performance demonstrates they are showing **consistent** understanding of the standard.

- The student accurately:
 - Draws a model to represent the grouping quantities
 - AND**
 - accurately creates a multiplication sentence to match the given model
 - AND**
 - provides accurate reasoning in explanation.



Progressing - Student's performance demonstrates they are **progressing** toward understanding the standard.

- The student accurately:
 - Provides reasoning and explanation of strategy
- AND**
- writes a multiplication sentence representing the correct quantities and grouping
- OR**
- draws a model to represent the grouping quantities.

Beginning - Student's performance demonstrates that they are **beginning** to understand the standard.

- The student:
 - Writes a multiplication sentence representing the correct quantities and grouping
- OR**
- draws a model to represent the grouping quantities
- BUT**
- is unable to provide reasoning and explanation for strategy used.

Item 2

Taylor had 21 markers. Taylor's teacher, Ms. Samuel, tells her to put 3 markers in each container. How many containers will Taylor need to hold all of the markers?

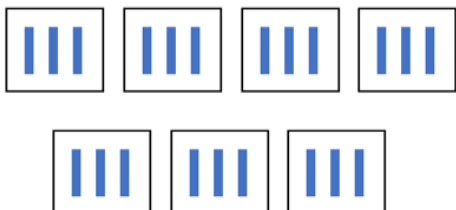
Explain your reasoning with a model and words.

Standard: 3.OA.A.2

Interpret whole-number quotients of whole numbers.

Sample Correct Drawings

Sample 1

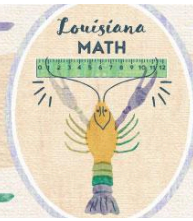


Sample 2

$$\begin{aligned} 21 - 3 &= 18 \\ 18 - 3 &= 15 \\ 15 - 3 &= 12 \\ 12 - 3 &= 9 \\ 9 - 3 &= 6 \\ 6 - 3 &= 0 \end{aligned}$$

Sample 3

$$3, 6, 9, 12, 15, 18, 21\dots$$



I drew 7 boxes and put a marker in each box until all the markers were gone, there were 3 markers in each box.

I started at 21, and subtracted 3 until there was nothing left. I subtracted 3 seven times, so the answer is 7.

I skip counted by 3 seven times until I got to 21.

***These are not the only acceptable drawings.**

Rubric

Consistent - Student's performance demonstrates they are showing **consistent** understanding of the standard.

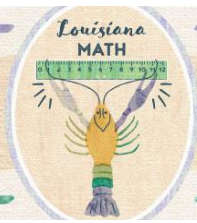
- The student accurately:
 - Identifies that there needs to be 7 containers
- AND**
- models the division of $21 \div 3$
- AND**
- explains that there are 21 items divided into 3 groups, resulting in 7 items in each group.

Progressing - Student's performance demonstrates they are **progressing** toward understanding the standard.

- The student accurately:
 - Identifies that there needs to be 7 containers
- AND**
- models the division of $21 \div 3$
- OR**
- explains that there are 21 items divided into 3 groups, resulting in 7 items in each group.
- OR**
- The student provides a repeated addition or repeated subtraction model. *Though this answer is correct it shows the student's lack of automaticity with multiplication and division. It does however, show that this student possesses conceptual understanding and gives you a starting point for intervention.*

Beginning - Student's performance demonstrates that they are **beginning** to understand the standard.

- The student:
 - Identifies that there needs to be 7 containers
- OR**
- Identifies that there needs to be 3 in each group **without** specifying a number of groups
- BUT**
- does not provide an accurate model or explanation for reasoning.



Item 3

Heather and Greg are given the following equation:

$$5 = \underline{\quad} \div 4.$$

Heather thinks that the number 20 will make the equation true.

Greg thinks that the number 9 will make the equation true.

Who is correct? Draw a picture to support your answer and explain your reasoning.

Answer: _____

Standard: 3.OA.A.4

Determine the unknown whole number in a multiplication or division equation relating three whole numbers.

Sample Correct Drawings

Sample 1



Heather is correct. I split 20 into five groups of 4.

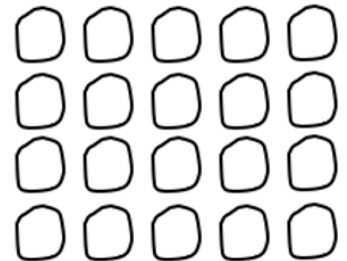
Sample 2

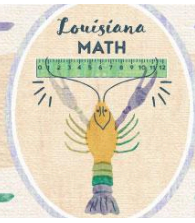


Heather is correct. I split 20 into 4 groups of 5.

***These are not the only acceptable drawings.**

Sample 3





Rubric

Consistent - Student's performance demonstrates they are showing **consistent** understanding of the standard.

- The student accurately:
 - Draws a picture to show that the unknown number is 20

AND

 - Writes to explain that Heather is correct by using multiplication to relate the numbers 4, 5, and 20

OR

 - Writes to explain that Greg is incorrect because 9 would not make the equation true OR 9 as the unknown would not relate the numbers 4, 5, and 20 in a multiplication or division sentence.

Progressing - Student's performance demonstrates they are **progressing** toward understanding the standard.

- The student accurately:
 - Draws a model to show the unknown number is 20

BUT

 - Provides an explanation that does not accurately use multiplication or division to explain the relationship between 20, 4, and 5.

Beginning - Student's performance demonstrates that they are **beginning** to understand the standard.

- The student:
 - **ONLY** draws a models that shows 20

OR

 - Is unable to draw a model to show the missing number is 20

BUT

 - Is not able to explain using mathematical reasoning

AND/OR

 - States that Greg is correct

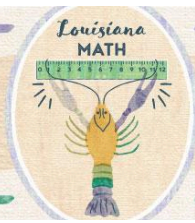
Item 4

William solved the problem $32 \div 4$.

Find William's quotient and use words and pictures to explain how he could use multiplication to check his work.

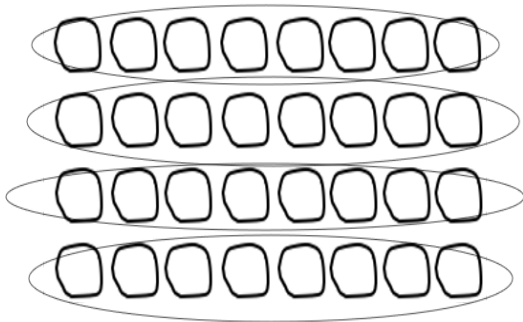
Standard: 3.OA.B.6

Understand division as an unknown-factor problem.



Sample Correct Drawings

Sample 1



Sample 2

$$4 \times ? = 32$$

$$4 \times 8 = 32$$

$$32 \div 4 = 8$$

**These are not the only acceptable drawings.*

Rubric

Consistent - Student's performance demonstrates they are showing **consistent** understanding of the standard.

- The student accurately:
 - Solves for a quotient of 8 **AND**
 - provides accurate reasoning of inverse operations of multiplication and division by showing the two factors and how those factors relate to the quotient **AND**
 - draws a model to connect the division to multiplication.

Progressing - Student's performance demonstrates they are **progressing** toward understanding the standard.

- The student accurately:
 - Solves for a quotient of 8 **AND**
 - provides accurate reasoning of inverse operations of multiplication and division by showing the two factors and how those factors relate to the quotient

OR

 - draws a model to connect the division to multiplication.

Beginning - Student's performance demonstrates that they are **beginning** to understand the standard.

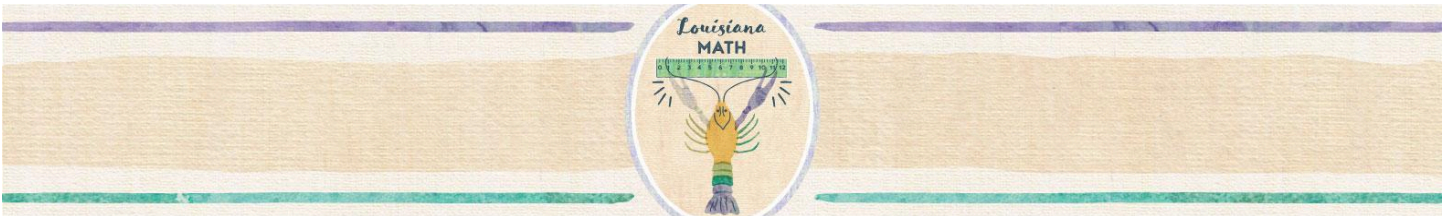
- The student:
 - Accurately solves for a quotient of 8

OR

 - draws a model to connect the division to multiplication

BUT

 - does not connect the model to an explanation.



Name _____

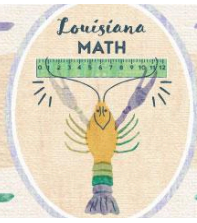
FLAME Grade 3 Unit 1 Assessment

Item 1

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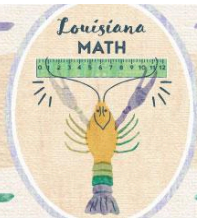




Item 2

Taylor had 21 markers. Taylor's teacher, Ms. Samuel, tells her to put 3 markers in each container. How many containers will Taylor need to hold all of the markers?

Explain your reasoning with a model and words.



Item 3

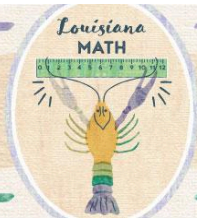
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