

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.

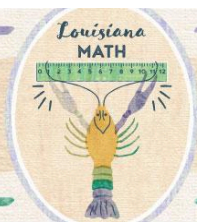
Scoring and Next Steps

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 1 Unit 3 Assessment Teacher Answer Key

Item 1

Margot's teacher displays two number sequence cards on the board.

107, 108, 109, 110, 120

Card A

98, 99, 100, 101, 102

Card B

Circle the sequence that is incorrect. Rewrite it correctly in the box below.

_____ / _____ / _____ / _____ / _____

Carlos says Card A shows a correct sequence because the number 120 has a two as a digit, and 12 comes after 11. Why is Carlos's thinking incorrect?

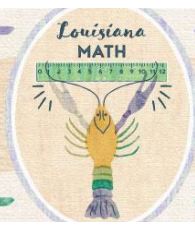
Express your answer using words, numbers, and math drawings.

Standard: 1.NBT.A.1

Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral.

Corrected Number Sequence

107, 108, 109, 110, 111



Sample Explanations

Carlos is correct when he says the number after 111 has two as a digit, but the digit is in the wrong place. Eleven tens is the same as 110, and one more is 111. 120 is 12 tens. Carlos changed the value of the digit in the tens place instead of the ones place when counting up by 1.

The sequence increases by one each time. When adding one, only the digit in the ones place changes. Carlos changed the value of the digit in the tens place from 11 tens to 12 tens.



**These are not the only acceptable explanations.*

Rubric

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

- The student accurately:
 - identifies the incorrect number sequence

AND

 - rewrites the number sequence correctly

AND

 - uses understanding of place value to justify why Carlos' reasoning is incorrect.

The student's response must capture the essence of this exemplar response to be considered consistent.

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

- The student accurately:
 - identifies the incorrect number sequence

AND

 - rewrites the number sequence correctly

BUT

 - does not fully use understanding of place value to justify why Carlos' reasoning is incorrect.

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

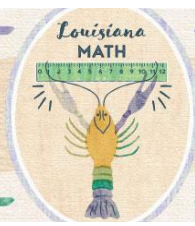
- The student:
 - identifies the incorrect number sequence

BUT

 - is unable to rewrite the number sentence correctly

OR

 - demonstrates little to no place value understanding of tens and ones, and there is no evidence of reasoning.



Item 2

Anna says that 9 tens and 4 ones is the same as 94. Estelle says 94 is the same as 8 tens and 14 ones. Are the girls correct?

Explain your thinking using words, math drawings, and numbers sentences.

Standard: 1.NBT.B.2

Understand that the two digits of a two-digit number represent amounts of tens and ones.

Sample Correct Drawings

| tens | ones |
|------|------|
| 9 | 4 |

$$\begin{array}{l} 9 \text{ tens} + 4 \text{ ones} = 90 \\ + 4 \\ \hline 94 \end{array}$$

$$\begin{array}{l} 8 \text{ tens} + 14 \text{ ones} = 80 \\ 80 + 14 = 94 \\ \begin{array}{c} \diagup \quad \diagdown \\ 10 \quad 4 \end{array} \end{array} \quad + \begin{array}{r} 14 \\ \hline 94 \end{array}$$

Sample Explanations

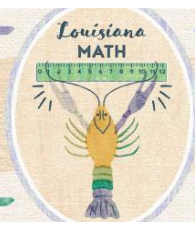
Anna and Estelle are both right.

9 tens and 4 ones is the same as $90 + 4$. 9 tens is 90, and 4 ones is 4. $90 + 4 = 94$.

94 is the same as 8 tens 14 ones. I can break the 14 apart into 10 and 4. 8 tens + 1 ten is 9 tens, which is 90. 9 tens plus 4 ones is the same as $90 + 4$, which is 94.

It is the same number, just written differently.

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



Rubric

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

- The student accurately:
 - calculates 9 tens and 4 ones as 94

AND

 - calculates 8 tens 14 ones as 94

AND

 - correctly uses drawings and words to fully explain the reasoning for each equation using place value.

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

- The student accurately:
 - calculates 9 tens and 4 ones as 94

AND

 - calculates 8 tens 14 ones as 94

BUT

 - correctly uses drawings and words to fully explain reasoning for one equation using place value

OR

 - uses drawings or words to depict only one of the numbers, showing limited understanding of place value.

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

- The student:
 - calculates 9 tens and 4 ones as 94

OR

 - is unable to represent 8 tens 14 ones as 94

AND

 - demonstrates little to no understanding of place value, and there is no evidence of reasoning.

Item 3

Zuri and Winter solve $47 + 36$ on their personal whiteboards. Their work is shown below.

Zuri

$47 + 36 = 83$

$\begin{array}{r} 47 \\ +36 \\ \hline 83 \end{array}$

Winter

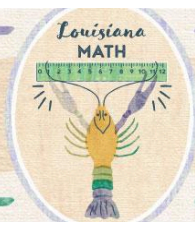
$47 + 36 = 53$

$\begin{array}{r} 3 \quad 3 \\ 47 + 3 = 50 \\ 50 + 3 = 53 \end{array}$

Circle the work that is correct.

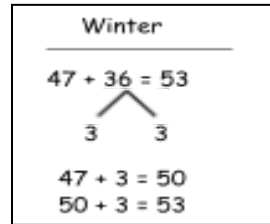
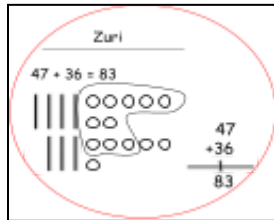
Correct the mistake on the incorrect work. Solve using the same strategy that the students tried to use.

Express your answer using words, numbers, and math drawings.



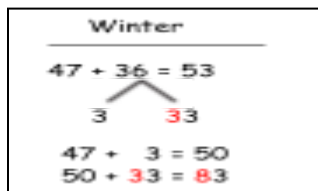
Standard: 1.NBT.C.4

Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten.

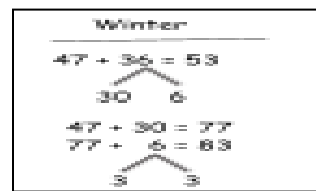


Sample Correct Answers

Sample 1



Sample 2



Sample Explanations

Winter used the make ten strategy. 47 is close to 50. She needs 3 more to make the next ten, which is 50. Winter's mistake was that she broke 36 into 3 ones and 3 ones. She should have broken 36 into 3 ones and 33 ones or 3 ones and 3 ones and three tens.

I broke 36 into 3 and 33. I added $47 + 3$ to make the next ten, which is 50. I added $50 + 33$ to get 83.

I broke apart the tens from 36 to add 3 tens to 47 first. Next, I separated 6 into 3 and 3. $77 + 3 = 80$. $80 + 3 = 83$.

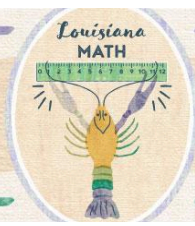
**These are not the only acceptable solutions and explanations.*

Rubric

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

- The student accurately:
 - identified the correct student's work
 - AND**
 - correctly identifies and explains the error in the incorrect student's work
 - AND**
 - explains the correct process of solving through words, math drawings, and numbers.

The student's response must capture the essence of this exemplar response to be considered consistent.



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

- The student accurately:
 - identified the correct student's work

AND

 - correctly identifies and explains the error in the incorrect student's work

BUT

 - is unable to explain the process of solving through words, math drawings, and numbers

OR

 - the student's explanation is mathematically correct, but there is a transcription error that leads to an incorrect explanation.

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

- The student:
 - identified the correct student's work

OR

 - identified the incorrect student's work BUT is unable to identify and explain the error in the incorrect student's work

OR

 - the student's answer is incorrect, and there is no evidence of reasoning.

Item 4

Brandon solves the following problem:

Eliza is collecting cans for the can food drive. Her goal is to collect 15 cans. She has already collected 8 cans. How many more cans does she need to reach her goal?

Brandon solved the problem using the Take From Ten Strategy. His work is shown below.

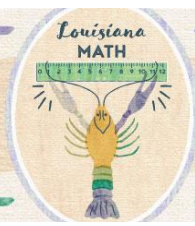
| | |
|-------------------|--|
| Brandon's Work | |
| $15 - 8 = 13$ | Eliza needs to collect 13 more cans to reach her goal. |
| 10 5 | |
| $5 - 8 = 3$ | |
| $10 + 3 = 13$ | |

Brandon's teacher says his work is incorrect. Identify Brandon's mistake. Solve for the correct answer using the Take From Ten Strategy.

Express your answer using words, numbers, and math drawings.

Standard: 1.OA.C.6

Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows 12



– 8 = 4); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$).

Sample Correct Answers

| Correct Work | |
|--------------|---|
| $15 - 8 = 7$ | Eliza needs to collect 7 more cans to reach her goal. |
| $10 \quad 5$ | |
| $10 - 8 = 2$ | |
| $2 + 5 = 7$ | |

Brandon was correct when he broke 15 into 10 and 5, but his first number sentence says $5 - 8 = 3$. That is incorrect. You can't subtract 5 from 8. Her answer is 13. That does not make sense because 13 is only 2 less than 15, and we know Eliza has already collected 8 cans. Her answer has to be 8 less than 15.

Brandon needs to check the number he is taking away. She should take away 8 from 10 to get 2. Then you add $2 + 5$ to get 7. Eliza needs to collect 7 more cans to reach her goal.

**These are not the only acceptable explanations.*

Rubric

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

- The student accurately:
 - solves the problem using the take from ten strategy

AND

 - correctly identifies and explains the error in Brandon's work

AND

 - explains the correct process of solving through words, math drawings, and numbers.

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

- The student accurately:
 - solves the problem using the take from ten strategy

AND

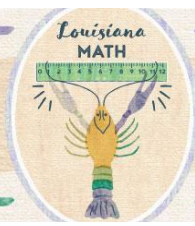
 - correctly identifies and explains the error in Brandon's work

BUT

 - is unable to explain the process of solving through words, math drawings, and numbers

OR

 - the student's explanation is mathematically correct, but there is a transcription error that leads to incorrect explanation.



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

- The student:
 - solves the problems using a strategy other than the take from ten strategy
 - BUT**
 - is unable to identify and explain the error in the other student's work
 - OR**
 - the student's answer is incorrect, and there is no evidence of reasoning.

Item 5

Carter and Jace are using expression cards to make true number sentences. Use pictures and words to show who is right.

Carter picked $15 - 9$, and Jace picked $9 + 5$. Carter says these expressions are equal, but Jace disagrees. Who is right? Explain your thinking.

Standard: 1.OA.D.7

Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$.

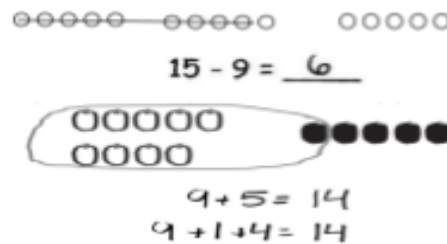
Sample Correct Explanation

Sample 1

$$\begin{array}{r} 15 \\ \wedge \\ 10 \quad 5 \end{array} - \begin{array}{r} 9 \\ \wedge \\ 1 \quad 4 \end{array} = \begin{array}{r} 9 \\ \wedge \\ 1 \quad 4 \end{array} + \begin{array}{r} 5 \\ \wedge \\ 1 \quad 4 \end{array}$$

$$\begin{array}{ll} 10 - 9 = 1 & 9 + 1 = 10 \\ 1 + 5 = 6 & 10 + 4 = 14 \end{array}$$

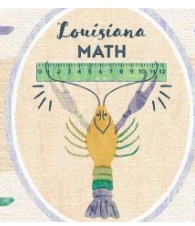
Sample 2



The two expressions have to be the same. I can use the take-from-ten strategy to solve $15 - 9$. $10 - 9 = 1$, then add the extra five from the 15.

Nine needs 1 more to make a ten. $9 + 1 = 10$. Since I took the one from the 5, I have to add four more. Since $15 - 9 = 6$ and $9 + 5 = 14$, the two expressions are not equal. Carter is incorrect.

**These are not the only acceptable drawings.*



Rubric

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

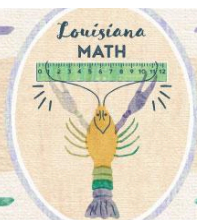
- The student accurately:
 - finds the value of each number sentence
 - AND**
 - identifies that the expressions are not equal
 - AND**
 - demonstrates full understanding of the meaning of the equal sign by identifying that Carter is incorrect
 - AND**
 - fully explains reasoning using pictures, number sentences, and words.

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

- The student accurately:
 - finds the value of each number sentence
 - AND**
 - identifies that the expressions are not equal
 - BUT**
 - demonstrates limited understanding of the meaning of the equal sign and determines that the equations are not equal,
 - BUT**
 - does not fully explain the reasoning.

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

- The student:
 - finds the value of each number sentence
 - BUT**
 - is unable to identify that the two expressions are not equal
 - OR**
 - demonstrates little to no understanding of the equal sign, and there is no evidence of reasoning.



Name _____

FLAME Grade 1 Unit 3 Assessment

Margot's teacher displays two number sequence cards on the board.

107, 108, 109, 110, 120

Card A

98, 99, 100, 101, 102

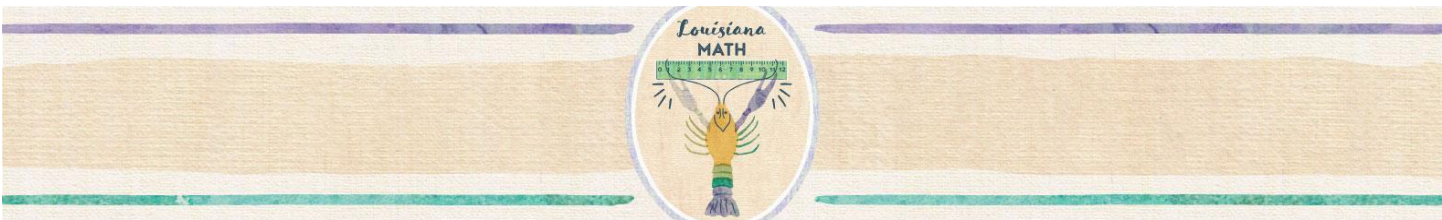
Card B

Circle the sequence that is incorrect. Rewrite it correctly in the box below.

_____ / _____ / _____ / _____ / _____

Carlos says Card A shows a correct sequence because the number 120 has a two as a digit, and 12 comes after 11. Why is Carlos's thinking incorrect?

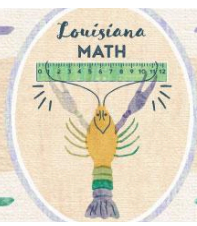
Express your answer using words, numbers, and math drawings.



Item 2

Anna says that 9 tens and 4 ones is the same as 94. Estelle says 94 is the same as 8 tens and 14 ones. Are the girls correct?

Explain your thinking using words, math drawings, and numbers sentences.



Item 3

Zuri and Winter solve $47 + 36$ on their personal whiteboards. Their work is shown below.

Zuri

$47 + 36 = 83$

| |
|-------|
| 47 |
| +36 |
| ----- |
| 83 |

Winter

$47 + 36 = 53$

3 3

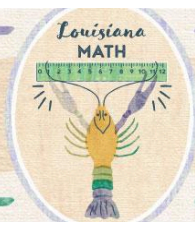
$47 + 3 = 50$

$50 + 3 = 53$

Circle the work that is correct.

Correct the mistake in the other work. Solve using the same strategy that the students tried to use.

Express your answer using words, numbers, and math drawings.



Item 4

Brandon solves the following problem:

Eliza is collecting cans for the can food drive. Her goal is to collect 15 cans. She has already collected 8 cans. How many more cans does she need to reach her goal?

Brandon solved the problem using the Take From Ten Strategy. His work is shown below.

Brandon's
Work

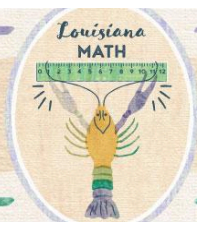
$15 - 8 = 13$ Eliza needs to collect 13 more cans to reach her goal.

$\begin{array}{r} 15 \\ \swarrow \searrow \\ 10 \quad 5 \end{array}$

$5 - 8 = 3$
 $10 + 3 = 13$

Brandon's teacher says his work is incorrect. Identify Brandon's mistake. Solve for the correct answer using the Take From Ten Strategy.

Express your answer using words, numbers, and math drawings.



Item 5

Carter and Jace are using expression cards to make true number sentences. Use pictures and words to show who is right.

Carter picked $15 - 9$, and Jace picked $9 + 5$. Carter says these expressions are equal, but Jace disagrees. Who is right? Explain your thinking.

Draw a picture and write to explain your answer.
