Mathematics Instructional Cycle Guide

Fraction Word Problem (4.NF.3.d)

Created by Monica Lloyd, 2014 Connecticut Dream Team Teacher

CT CORE STANDARDS

This Instructional Cycle Guide relates to the following *Standards for Mathematical Content* in the *CT Core Standards for Mathematics*:

Numbers and Fractions 4NF.3.d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.

This Instructional Cycle Guide also relates to the following *Standards for Mathematical Practice* in the *CT Core Standards for Mathematics*:

Insert the relevant Standard(s) for Mathematical Practice here.
Mathematical Practice 4 - Model with Mathematics

Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. Mathematically proficient students who can apply what they know are comfortable making approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

WHAT IS INCLUDED IN THIS DOCUMENT?

- A Mathematical Checkpoint to elicit evidence of student understanding and identify student understandings and misunderstandings **(pages 9-10)**
- A student response guide with examples of student work to support the analysis and interpretation of student work on the Mathematical Checkpoint **(pages 2-6)**
- A follow-up lesson plan designed to use the evidence from the student work and address the student understandings and misunderstandings revealed **(pages 7-10)**
- Supporting lesson materials **(Appendix A pages 1-18)**
- Precursory research and review of standard **Fractions 4NF.3.d** and assessment items that illustrate the standard **(pages 11-13)**

HOW TO USE THIS DOCUMENT

1) Before the lesson, administer the **Candy Bar (4NF.3.d)** ***Mathematical Checkpoint*** individually to students to elicit evidence of student understanding.
2) Analyze and interpret the student work using the ***Student Response Guide***
3) Use the next steps or ***follow-up lesson plan*** to support planning and implementation of instruction to address student understandings and misunderstandings revealed by the Mathematical Checkpoint
4) Make instructional decisions based on the checks for understanding embedded in the follow-up lesson plan

MATERIALS REQUIRED

- **Check Point (copies for each class member)**
- **Lesson Buddy Cards**
- **Timer (Optional)**
- **Appendix A Materials (Checklist, Exit Ticket, Posters, Differentiation Activities, Graphic Organizer)**
- **Wipe Off Boards and Markers**

TIME NEEDED

Candy Bar (4NF.3.d) Checkpoint administration: **15 minutes**
Follow-Up Lesson Plan: **45 minutes**

Timings are only approximate. Exact timings will depend on the length of the instructional block and needs of the students in the class.

<table>
<tr><th colspan="3">Step 1: Elicit evidence of student understanding</th></tr>
<tr><th colspan="3">Mathematical Checkpoint</th></tr>
<tr><th>Question(s)</th><th colspan="2">Purpose</th></tr>
<tr><td rowspan="2">Fractions (4NF.3.d)

George has a candy bar. He eats $\frac{3}{12}$ of the candy bar. His friend Betsy eats $\frac{4}{12}$ of the same candy bar.
How much of his candy bar does George have left? _____

Draw a model to show your solution and explain your thinking.</td><td>CT Core Standard:</td><td>4.NF.B.3.d
Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</td></tr>
<tr><td>Target question addressed by this checkpoint:</td><td>Do students understand addition and subtraction of fractions as joining and separating parts referring to the same whole?

Can students follow the steps of the problem solving model when adding and subtracting fractions?</td></tr>
</table>

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Step 2: Analyze and Interpret Student Work

Student Response Guide

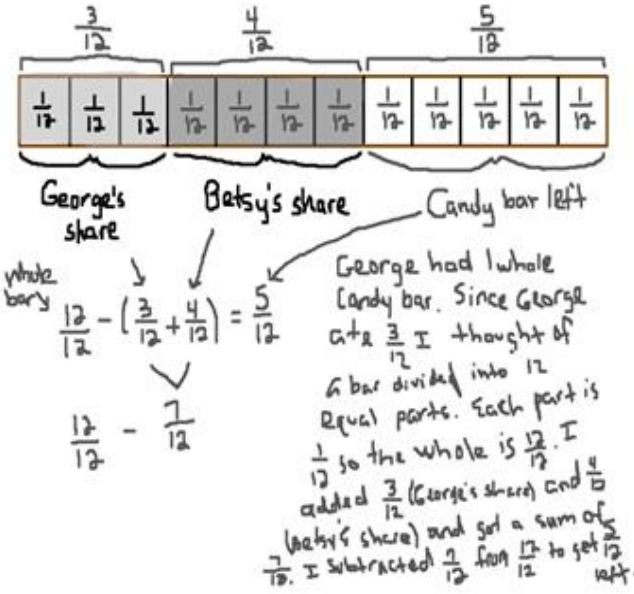
Got It	Developing	Getting Started

Got It

George has a candy bar. He eats $\frac{3}{12}$ of the candy bar. His friend Betsy eats $\frac{4}{12}$ of the same candy bar.
How much of his candy bar does George have left?

$\frac{5}{12}$

Draw a model to show your solution and explain your thinking.



Developing

George has a candy bar. He eats $\frac{3}{12}$ of the candy bar. His friend Betsy eats $\frac{4}{12}$ of the same candy bar.
How much of his candy bar does George have left?

$\frac{5}{12}$

Draw a model to show your solution and explain your thinking.

So first I mad a rectangle and I made up to 12 pieces then I ~~shaded~~ shaded 3 then 4 and I get the anser

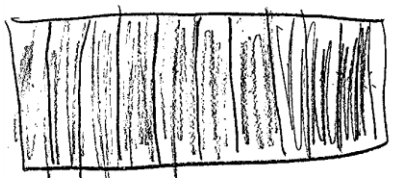
Getting Started

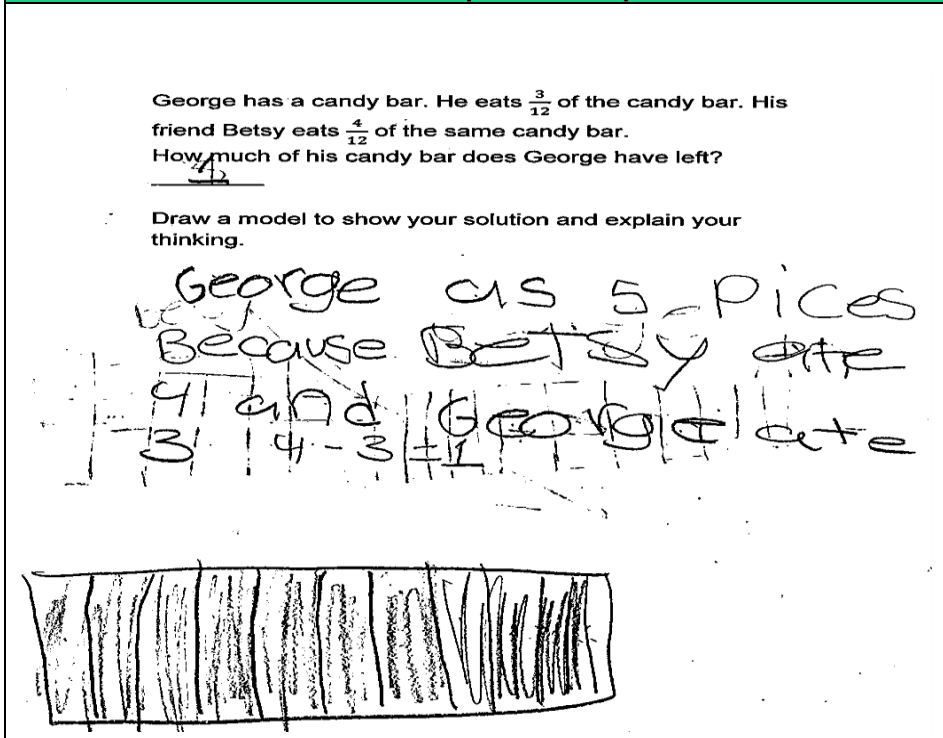
George has a candy bar. He eats $\frac{3}{12}$ of the candy bar. His friend Betsy eats $\frac{4}{12}$ of the same candy bar.
How much of his candy bar does George have left?

$\frac{4}{12}$

Draw a model to show your solution and explain your thinking.

George as 5 pices Because Betsy ate 4 and George ate 3 4-3=1



<table>
<tr><th colspan="2">Getting Started</th></tr>
<tr><th>Student Response Example</th><th>Indicators</th></tr>
<tr><td> 
</td><td>Errors and misconceptions are revealed in the solution and explanation. The explanation and final solution does not reflect the situation in the story problem. The student may have used the fraction model to solve the problem by shading in all of the parts.
The student drawn model of the bar is divided into 12 parts. This is an indication of an emergent understanding of representing fractions in pictorial models. However all parts are shaded. The student number model does not match the situation. The pictorial representation does not to explain or show an understanding of how each portion is taken from the whole.
The student has overgeneralized whole number addition and subtraction to fractions. The explanation does not align to the story problem with the exception of the subtraction equation.
The student may not identify the problem as a multi-step problem requiring addition first and then subtraction, demonstrated by 4-3 = 1 or 4/12 - 3/12 = 1/12.</td></tr>
<tr><th>In the Moment Questions/Prompts</th><th>Closing the Loop (Interventions/Extensions)</th></tr>
<tr><td>Q: How does your picture (or model) show what is happening in the story problem?

Q: What fraction of the candy bar did Betsy eat? ....George eat? How much of the bar did Betsy and George eat altogether? How can we show this?

Q: How many pieces of the candy bar were not eaten? Can we write this as a fraction?

P: Show student a paper rectangle divided into 12 parts. Label each part 1/12. Act out the Candy Bar problem. Then model how to create and write the equations using fractions that match the story.</td><td>Provide whole part chart graphic organizers for adding and subtract fractions. Also provide fractions bars as manipulative for solving the equations. Allow the student to model with manipulatives. Then write equations with fractions in standard form. See Appendix A.

http://ctdreamteam.learnzillion.com/lessons/2906-subtract-fractions-with-like-denominators-using-a-number-line</td></tr>
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5
Draw a model to show your solution and explain your thinking.
So first I maid a rectorgle and I made up to 12 pieces then I ~~~~ shaded 3 then 4 and I got the anser
  </td><td>• Errors and misconceptions are revealed in the explanation or the explanation does not reflect solid comprehension of the story problem.
• The shading of the 7 squares and the rationale for shading the squares show an understanding of fractions being parts of a whole. No fraction model is presented to show $\frac{7}{12}$ are being taken from the whole $\frac{12}{12}$.
• There is no clear explanation of how the final solution was attained or the final solution is inaccurate/ correct. The word fractions or numerical representation of fractions such as $\frac{3}{12}$ or $\frac{4}{12}$ are absent from the student explanation to indicate a solid conceptual understanding of adding and subtracting fractions.</td></tr>
<tr><th>In the Moment Questions/Prompts</th><th>Closing the Loop (Interventions/Extensions)</th></tr>
<tr><td>Q: Tell me about your model and how it relates to the candy bar problem?

Q: I see you have a fraction (or the number 5) as part of the solution. Can you write any equations using fractions to show how you got the answer?

Q: Do your equations make sense with the story problem?

P: Model how to write the eaten parts of the candy bar as fractions. Use an audio visual model.</td><td>Provide whole part chart graphic organizers for adding and subtract fractions. Then write equations with fractions in standard form. Provide opportunities to reflect to explain in words the process of adding and subtracting fractions. (more details and specific details to be added)

http://ctdreamteam.learnzillion.com/lessons/2906-subtract-fractions-with-like-denominators-using-a-number-line</td></tr>
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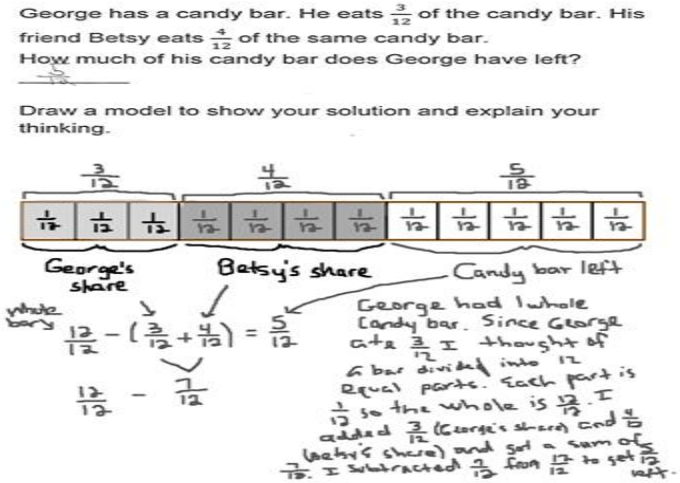
Got it

Student Response Example

What will a response include from a student who has demonstrated conceptual understanding and mastery?



Indicators

- The student provides the correct answer $\frac{5}{12}$.
- The student clearly understands how to partition numbers as shown by the equations. Equations are used as models for the problem. The equations are correct and show the whole candy bar represented as $\frac{12}{12}$.
  For example $\frac{12}{12} - (\frac{3}{12} + \frac{4}{12}) = \frac{5}{12}$; or

  Since $\frac{3}{12} + \frac{4}{12} = \frac{7}{12}$, then $\frac{12}{12} - \frac{7}{12} = \frac{5}{12}$
- The student accurately constructs a fraction model that aligns with the story problem and clearly explains how the final solution was attained. The portions of the model are clearly labeled and the amount remaining from the bar is clearly shown.

In the Moment Questions/Prompts

Q: How does your model and equation match the story?

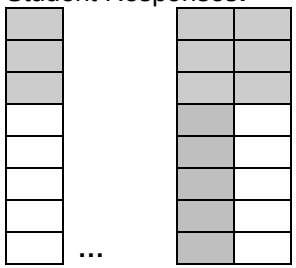
Q: Is there a way to make your candy bar match the one in the story problem?

P: Use an audio visual model to accurately partition the fraction bar.

Closing the Loop (Interventions/Extensions)

Provide practice with fraction bars and models that are drawn to scale. Using a wipe off or chalk board for quick mental math exercises. For example: Say: $\frac{3}{8}$…$\frac{11}{8}$, $1\frac{3}{8}$

Student Responses:



Steps 3 and 4: Act on Evidence from Student Work and Adjust Instruction	
Lesson Objective:	Students will solve two-step word problems involving addition and subtraction of fractions referring to the same whole and having like denominators by using fraction models and equations to represent the situation in the problem.
Content Standard(s):	4.NF.B.3.d Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.
Targeted Practice Standard :	Mathematical Practice 4 - Model with Mathematics • Can the student create a model and equation to match a situation involving the addition and/or subtraction of fractions? Mathematical Practice 2 – Reason abstractly and quantitatively • Can the student represent a context symbolically and attend to the meaning of the quantities involved in the text?

Mathematical Goals	**Success Criteria**
Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. Understand computation with fractions is an extension of computation with whole numbers.	Students should be able to add and subtract fractions with like denominators. Students will be able to use visual representation such as visual fraction model and equations to solve problems about fractions involving adding and subtracting fractions. Student will use such math vocabulary as numerator, denominator, whole, remainder, and or fraction when providing a detailed explanation of strategies used to solve problems.

Launch (Probe and Build Background Knowledge)

Purpose:

Then pose the following problem and instruct students to think- pair-share a solution. Allow them to use wipe off boards and markers as well.

Jose wants to share a box of cookies. How might he share his cookies with Mona and Cecilia?

How would you describe each person's share of the whole box of cookies using fractions?
How could Jose share the cookies so he still had some of the cookies left for later?
What fraction of the box of cookies would he have left?

See Common Misunderstanding sections for more details.

Instructional Task

Purpose: Students will model with mathematics and reason abstractly and quantitatively in order to solve story problems involving adding and subtracting fractions with like denominators.

T: Today girls and boys, you will model with mathematics and reason abstractly and quantitatively in order to solve story problems involving adding and subtracting fractions with like denominators. We are going to think about fractions in many ways and show our work in many ways.

Engage (Setting Up the Task)
T: In today's lesson we will solve fraction story problems independently and with a lesson buddy.

Present the following problem to the class.

> Debora and Ruth are planning to make soups. They have 4 cups of carrots they can use to make different soups. Debora plans to use $\frac{3}{4}$ cup carrots to make chicken soup, and 1 $\frac{1}{4}$cups carrots to make vegetable soup. Ruth plans to use $\frac{2}{4}$ cups of carrots to make minestrone soup. How many cups of carrots are left for their brother Françoise's gumbo recipe? Draw a model to prove your solution.

Instruct students to use any method or problem solving strategy to solve and explain their solution thoroughly.

While students are independently problem solving distribute math buddy cards to each student. Then allow students to find their buddies.

Explore (Solving the Task)
Allow for gradual release of responsibility to students by giving lesson buddies time to discuss how they solved the soup story problem.

In lesson buddies, allow students to analyze their work on the soup story problem. The Story Problem Student Checklist provided in Appendix A may be used at this time.

Have a student volunteer share and explain a how they made a model that explains the problem.
Have another student volunteer write the fraction and explain it.
Have another student volunteer write any equations used to solve the problem.
(Clear up any errors or misconceptions as needed)

Possible Teacher prompts:
What type of model could you draw to represent this problem?
What would an equation that represents this problem include?
Are there any questions?

(For more story problems to engage lesson buddies see Appendix A.)

Elaborate (Discuss Task and Related Mathematical Concepts)

Remind students to thoroughly solve story problems with fractions by showing their work in many ways.

As an extension to the soup problem lesson give students the following math team tasks to do independently. The Fraction Fluency Practice Page can be used to scaffold student understanding of fractions as well. (See Appendix A)

Before the distributing Lesson Exit tickets do the Where Are You activity with students.

Checking for Understanding

Purpose: *The purpose of the Exit Ticket is to confirm for the student and teacher that the student has mastered the skills needed to solve a two-step story problem about fractions based on one whole in preparation of solving more complex fraction story problems.*

The school fair decorating committee is making a banner. Jack has $\frac{3}{12}$ of the 12 foot banner to decorate. Ling has $\frac{5}{12}$ of the banner to decorate. How much of the banner will Raj need to decorate? Show your work.

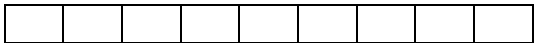
Common Misunderstanding

Purpose: *Students who arrive at the wrong answer by subtracting a part of the whole from the other known part may have success with the following explanation.*

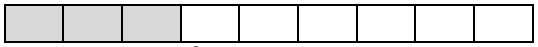
T: Jose ate $\frac{3}{9}$ of a box of cookies. Mona ate $\frac{2}{9}$ of the box cookies. Cecilia gets to have the $\frac{1}{9}$ of the box of cookies remaining. Is this right?

$\frac{3}{9}+\frac{2}{9}\neq\frac{9}{9}$. The whole box of cookies is $\frac{9}{9}$. We know this because Mona and Jose ate parts from the same whole. Each character ate part of 9. We know they ate part of nine by looking at the denominators of the fractional part that each character ate. Jose had $\frac{3}{9}$ and Mona had $\frac{2}{9}$. $\frac{3}{9}+\frac{2}{9}=\frac{5}{9}$, so how much of the box of cookies is left for Cecilia? Let's see.

Since the whole is $\frac{9}{9}$,



And Jose ate $\frac{3}{9}$, of the whole,



Then Mona ate $\frac{2}{9}$ more of the whole,

That leaves how many ninths for Cecilia…

We already know $\frac{3}{9}+\frac{2}{9}=\frac{5}{9}$, and the whole has $\frac{9}{9}$.

So we can subtract the two parts Jose and Mona ate from the whole box of cookies to find out how much of the cookies are left?

$\frac{9}{9}-\frac{5}{9}=\frac{4}{9}$

$\frac{4}{9}$ of the box are left for Cecilia.

Checking for Understanding

Purpose: Students will use a problem solving checklist to make sure they are solving all parts of the p*roblem and thoroughly explaining their thinking.*

Lesson Buddy Check List:

Did we/I answer the fraction problem with a fraction or mixed number?
Did we/I draw an accurate model to show my thinking?
Did we/I write out all equations used for computation?
How many steps did it take to get your answer?
Did we/I use our best math language?

Closure

Purpose: This is a student reflection and self-assessment activity. It is an opportunity for students to identify where they feel they think they may need support or continued enrichment before completing the exit ticket.

Where Are You?(Four Corners Type of Activity)

Yellow Brick Road – "I'm an expert. I can teach someone how to solve two step fraction story problems",

Paved Road – "I am clear on most steps to solve two step fraction story problems",

Dirt Road- "I still need help solving two step story problems" (Place the Yellow Brick Road, Paved Road, and Dirt Road posters in three corners of the room as you describe each road). Then have students move to the road that they feel most describes them after the lesson.

While students are still on their roads ask the following:

Explain how to thoroughly show your thinking.

Why is it important to thoroughly explain an answer?

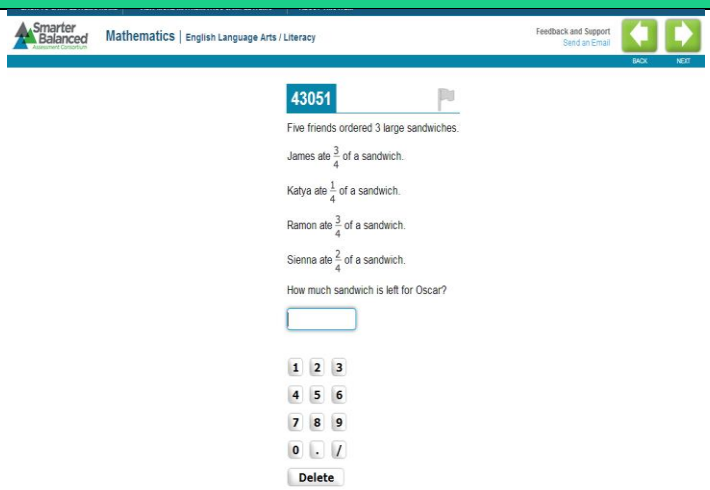
Extension Task

Purpose: *A brief description of how you will extend the learning for students who are ready to go deeper*

T: For those of you ready a challenge, here is an open response involving fractions…

Gary, Michael, Stacy and Brady are constructing a road made of Legos on a 15inch by 15inch base plate. After the first 3/15 of the length of the plate Gary suggests having the road make a ¼ turn to the left and continue for 4/15 of the width of the baseplate. Stacy then recommends that the road curve another ¼ turn to the right and continue to the edge of the baseplate. How long is the road from the second turn to the edge of the baseplate? Explain your answer.

<table>
<tr><th colspan="3">Research and review of standard</th></tr>
<tr><th>Content Standard(s):</th><th colspan="2">Standard(s) for Mathematical Practice:</th></tr>
<tr><td>4.NF.B.3.d
Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</td><td colspan="2">Mathematical Practice 4 - Model with Mathematics
Mathematically proficient students can apply the mathematics they know to solve problems arising in everyday life, society and the workplace. In early grades, this might be as simple as writing an addition equation to describe a situation. Mathematically proficient students who can apply what they know are comfortable making approximations to simplify a complicated situation, realizing that these may need revision later. They are able to identify important quantities in a practical situation and map their relationships using such tools as diagrams, two-way tables, graphs, flowcharts and formulas. They can analyze those relationships mathematically to draw conclusions. They routinely interpret their mathematical results in the context of the situation and reflect on whether the results make sense, possibly improving the model if it has not served its purpose.

http://www.corestandards.org/Math/Practice/</td></tr>
<tr><th>Smarter Balanced Claim</th><th colspan="2">Smarter Balanced Item</th></tr>
<tr><td>2. Problem Solving</td><td colspan="2"> 
</td></tr>
<tr><td>CPR Pre-Requisites
(Conceptual Understanding, Procedural Skills, and Representations)

Look at the Progressions documents, Learning Trajectories, LZ lesson library, unpacked standards documents from states, NCTM Essential Understandings Series, NCTM articles, and other professional resources. You'll find links to great resources on your PLC Platform.</td><td colspan="2">Conceptual Understanding and Knowledge
Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.
Students should understand that parts can represent the same whole; fractions are numbers; operations and properties that work for whole numbers work with fractions

Procedural Skills
Students need to be able to follow the steps of the problem solving model.
Students should be able to add and subtract numbers.

Representational
Visual representations
Number models/sentences/equations</td></tr>
</table>

	Number lines Tactile representations **Social knowledge** Vocabulary – numerator, denominator, whole, remainder, partitioning a line or fraction bar

Standards Progression **Look at LearnZillion lessons and expert tutorials, the Progressions documents, learning trajectories, and the "Wiring Document" to help you with this section*		
Grade(s) below	**Target grade**	**Grade(s) above**
Develop understanding of fractions as numbers. CCSS.MATH.CONTENT.3.NF.A.2.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. CCSS.MATH.CONTENT.3.NF.A.2.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. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. CCSS. Math. Content.NF.3.c Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. CCSS.MATH.CONTENT.3.NF.A.3.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.	Build fractions from unit fractions. CCSS.MATH.CONTENT.4.NF.B.3 Understand a fraction *a*/*b* with *a* > 1 as a sum of fractions 1/*b*. CCSS.MATH.CONTENT.4.NF.B.3.A Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. CCSS.MATH.CONTENT.4.NF.B.3.B Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. *Examples: 3/8 = 1/8 + 1/8 + 1/8; 3/8 = 1/8 + 2/8; 2 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8*. CCSS.MATH.CONTENT.4.NF.B.3.C Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction. CCSS.MATH.CONTENT.4.NF.B.3.D Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.	Use equivalent fractions as a strategy to add and subtract fractions. CCSS.MATH.CONTENT.5.NF.A.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. *For example, 2/3 + 5/4 = 8/12 + 15/12 = 23/12. (In general, a/b + c/d = (ad + bc)/bd.)* CCSS.MATH.CONTENT.5.NF.A.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. *For example, recognize an incorrect result 2/5 + 1/2 = 3/7, by observing that 3/7 < 1/2*. Apply and extend previous understandings of multiplication and division.

Common Misconceptions/Roadblocks
What characteristics of this problem may confuse students? • *Students use the fraction bar as a tool for solving the problem without explaining how it was used.* **What are the common misconceptions and undeveloped understandings students often have about the content addressed by this item and the standard it addresses?** • *Students may represent the answer as a whole instead of a fraction.* **What overgeneralizations may students make from previous learning leading them to make false connections or conclusions?** • *Students apply their work with whole numbers directly to fractions.*

Appendix A

Name _____ Date _____ Time_____

George has a candy bar. He eats $\frac{3}{12}$ of the candy bar. His friend Betsy eats $\frac{4}{12}$ of the candy bar. How much of his candy bar does George have left? _____

Draw a model to show your solution and explain your thinking.

Lesson Buddies for Teacher Use Only

Use the table to sort students according to their performance on the Candy Bar Checkpoint and social emotional needs of your class. Write student names in order from highest to lowest functioning or vice versa on the Candy Bar Checkpoint. Wooden craft sticks with student names on them can be used or the rectangles provided.

Suggested Pairing for Lesson Launch

Got It Student	Developing Student
Developing Student	Getting Started Student
High Developing Student	Low Developing Student
Got It Student	Getting Started Student

Got It	**Developing** (High Developing Student Developing Student Low Developing Student)	**Getting Started**

Lesson Buddy Problem Solving Checklist

Check what you did when solving the story problem.

- Did we/I answer the fraction problem with a fraction or mixed number?

  Yes _____ No_____

- Did we/I draw an accurate model to show my thinking?

  Yes_____ No_____

- Did we/I write out all equations used for computation?

  Yes_____ No_____

- How many steps did it take to get your answer?

  Yes_____ No_____

- Did we/I use our best math language?

  Yes_____ No_____

Name _____ Date _____

Lesson Buddy Story Problem 1

Debora and Ruth are planning to make soups. They have 4 cups of carrots they can use to make different soups. Debora plans to use $\frac{3}{4}$ cup carrots to make chicken soup, and $1\frac{1}{4}$ cups carrots to make vegetable soup. Ruth plans to use $\frac{2}{4}$ cups of carrots to make minestrone soup. How many cups of carrots are left for their brother Françoise's gumbo recipe? Draw a model to prove your solution.

Name _____ Date _____

Additional Lesson Buddy Problem 2

Hubert and Daniel ordered three small pizza pies with different toppings - cheese, pepperoni, and mushroom after lacrosse practice. They ate $\frac{5}{8}$ of the cheese pizza, $\frac{3}{8}$ of the pepperoni pizza and $\frac{2}{8}$ of the mushroom pizza. They have pizza left over which they want to store in the boxes. What is the fewest number of pizza boxes they need to keep the leftover pizza? Draw a model to prove your solution.

Name _____ Date _____

Additional Lesson Buddy Problem 3

Dana, Chris, and Keisha are planning to grow vegetables in four garden beds. Dana will plant lettuce in $\frac{3}{4}$ of a garden bed, Chris will plant summer squash in $\frac{2}{4}$ of a garden bed, and Keisha will plant potatoes in $1\frac{1}{4}$ of a garden bed. How much of the garden will remain without plants?

Math Task Teams (Task Teams should be pre-selected based on Check Point).
These tasks may be given individually or as stations/centers. They are designed to give students independent practice at solving two-step fraction problems at their levels.

(Got It) Task Team	*(Developing)* Task Team	*(Getting Started)* Task Team
"Got It" will start with an independent activity that includes an extension. Task: Gary, Michael, Stacy and Brady are constructing a road made of Legos on a 15 inch by 15 inch base plate. After creating the first $\frac{3}{15}$ of the road, Gary suggests having the road make a $\frac{1}{4}$ turn to the left and continue for $\frac{4}{15}$ more of the width of the base plate. Stacy then recommends that the road curve another $\frac{1}{4}$ turn to the right and continue to the edge of the base plate. How long is the road from the second turn to the edge of the base plate? Explain your answer.	"Developing" will review Learn Zillion video on iPads/Promethean board and solve another story problem with a graphic organizer [Appendix A], Task: Pete and Sarah are baking brownies for the bake sale. They have five pans of brownies. Pete covers 2/5 with chocolate icing. Sarah covers 1/5 of the pans of brownies with caramel icing. How many pans will be covered with fudge icing? Explain your answer.	"Getting Started" in guided practice. Teacher will model a problem similar to the check point possibly with manipulatives and a graphic organizer (i.e. part whole chart) [Appendix A.] as needed. Task: Samantha has 10 cards in her collection. She gives 3/10 to Gabe. Then she gives 4/10 to Arnold. How many does she have left? _____ Draw a model to show your solution and explain your thinking.

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Math Team Task 1

Samantha has 10 cards in her collection. She gives 3/10 to Gabe. Then she gives 4/10 to Arnold. How many does she have left? _____

Draw a model to show your solution and explain your thinking.

Math Team Task 2

Pete and Sarah are baking brownies for the bake sale. They have five pans of brownies. Pete covers 2/5 with chocolate icing. Sarah covers 1/5 of the pans of brownies with caramel icing. How many pans will be covered with fudge icing?

Explain your answer.

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Math Team Task 3

Gary, Michael, Stacy and Brady are constructing a road made of Legos on a 15 inch by 15 inch base plate. After creating the first $\frac{3}{15}$ of the road, Gary suggests having the road make a $\frac{1}{4}$ turn to the left and continue for $\frac{4}{15}$ more of the width of the base plate. Stacy then recommends that the road curve another $\frac{1}{4}$ turn to the right and continue to the edge of the base plate. How long is the road from the second turn to the edge of the base plate? Explain your answer.

Name _____ Date _____

Fraction Practice

1.

$\frac{4}{5} - \frac{1}{5} =$ _____

_____ $= \frac{7}{8} + \frac{1}{8}$

_____ $= \frac{5}{5} - \frac{4}{5}$

$\frac{1}{8} + \frac{7}{8} =$ _____

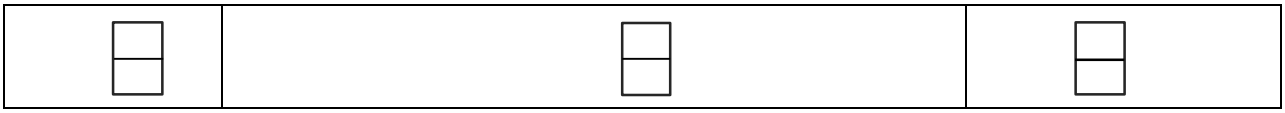
_____ $= \frac{4}{5} + \frac{1}{5}$

_____ $= \frac{8}{8} - \frac{1}{8}$

$\frac{1}{5} + \frac{4}{5} =$ _____

$\frac{8}{8} - \frac{7}{8} =$ _____

2. Solve the equations. Then complete the fraction bar.



$\frac{2}{12} + \frac{7}{12} =$ _____

$\frac{12}{12} - \frac{7}{12} =$ _____

$\frac{12}{12} - \frac{2}{12} =$ _____

$\frac{12}{12} - (\frac{7}{12} + \frac{2}{12}) =$ _____

$\frac{9}{12} + \frac{3}{12} =$ _____

3. Create your own fraction family. Try to include an equation using parentheses.

_____ _____ = _____

_____ _____ = _____

_____ _____ = _____

_____ _____ = _____

_____ _____ = _____

Bonus: Use the back of this page to write a multistep fraction story. Then have someone try to solve it.

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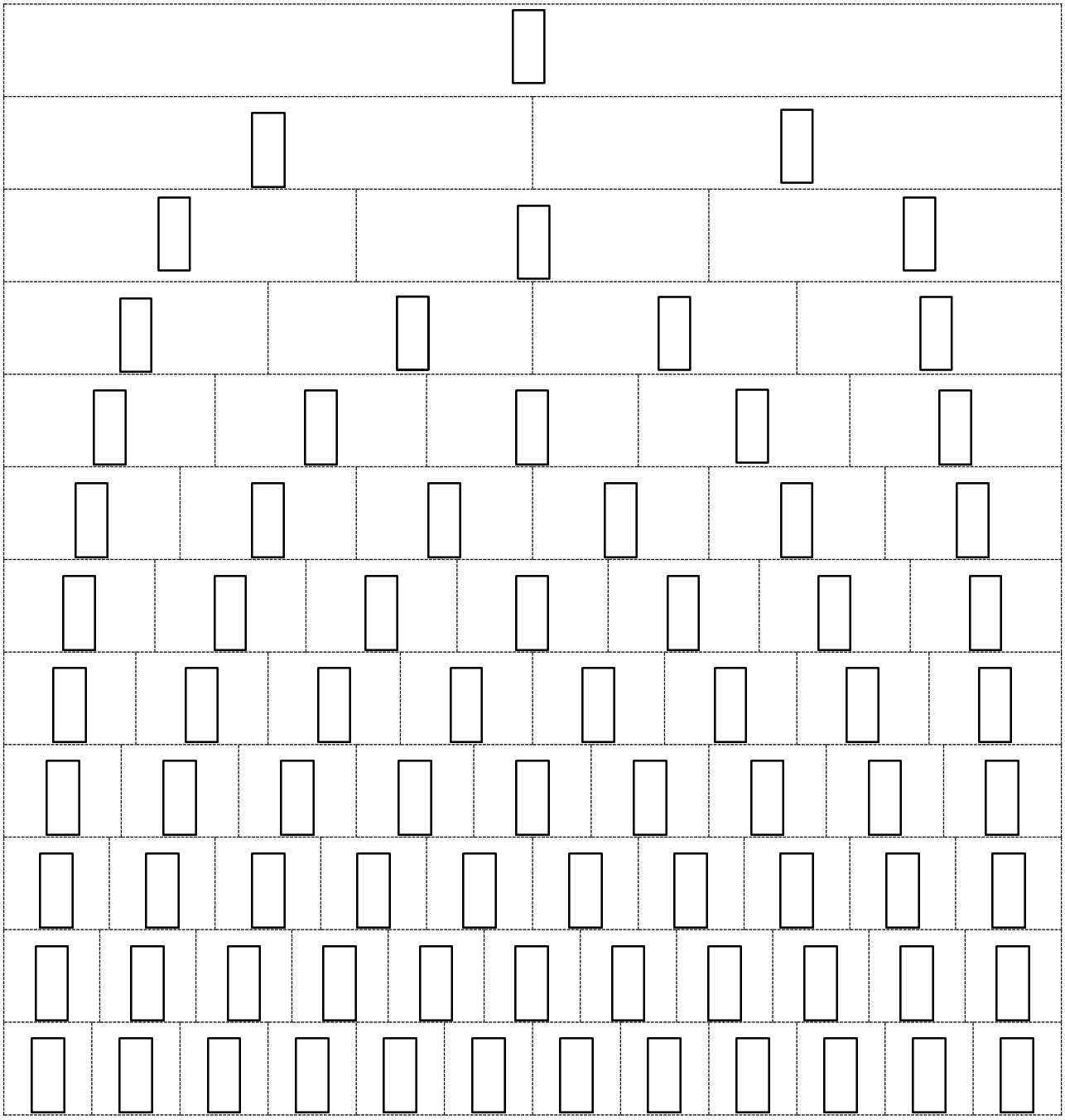
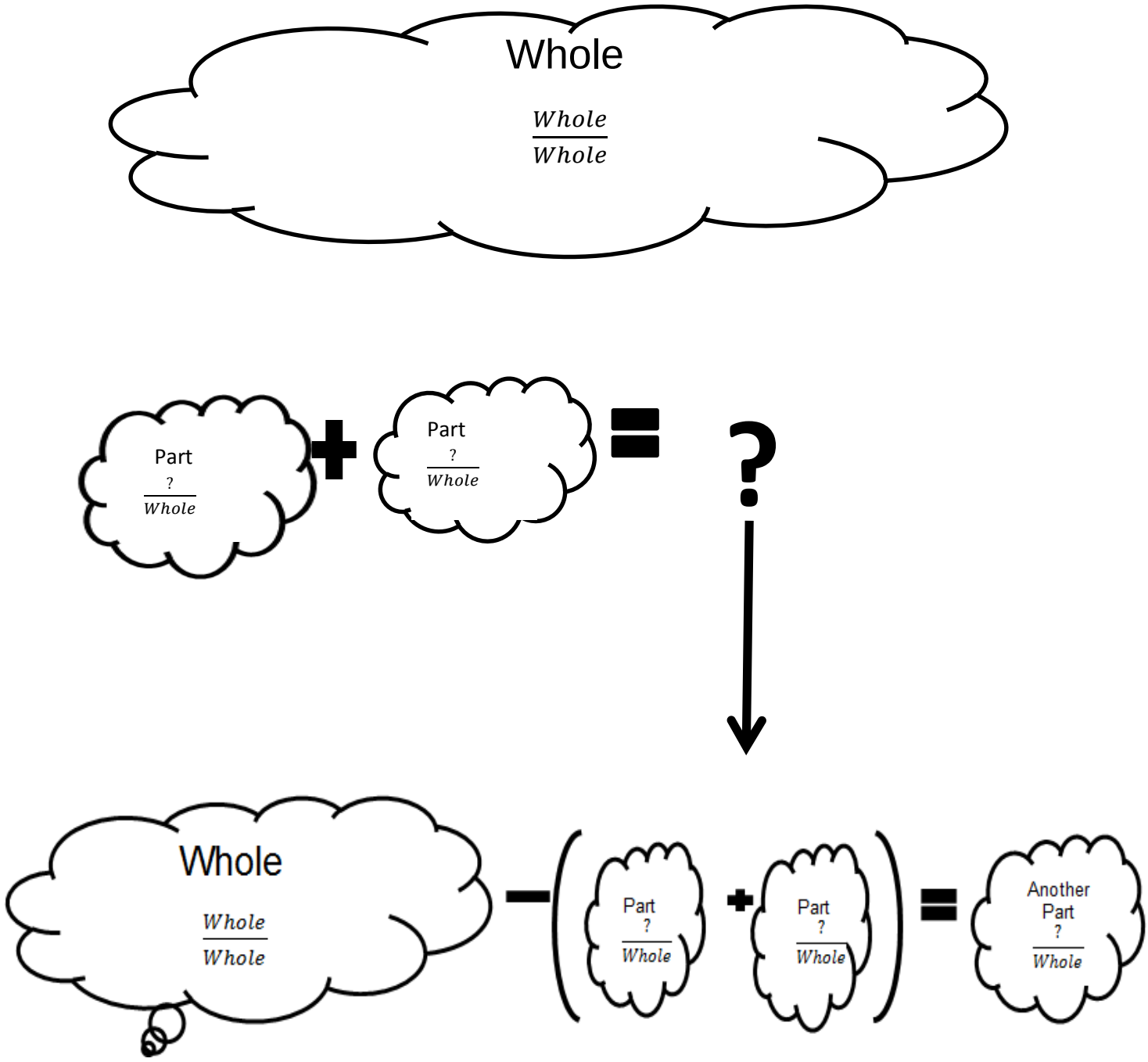
Fraction Bar Manipulatives

1											
$\frac{1}{2}$											$\frac{1}{2}$
$\frac{1}{3}$										$\frac{1}{3}$	
$\frac{1}{4}$									$\frac{1}{4}$		
$\frac{1}{5}$								$\frac{1}{5}$			
$\frac{1}{6}$							$\frac{1}{6}$				
$\frac{1}{7}$						$\frac{1}{7}$					
$\frac{1}{8}$					$\frac{1}{8}$						
$\frac{1}{9}$				$\frac{1}{9}$							
$\frac{1}{10}$			$\frac{1}{10}$								
$\frac{1}{11}$		$\frac{1}{11}$									
$\frac{1}{12}$	$\frac{1}{12}$										

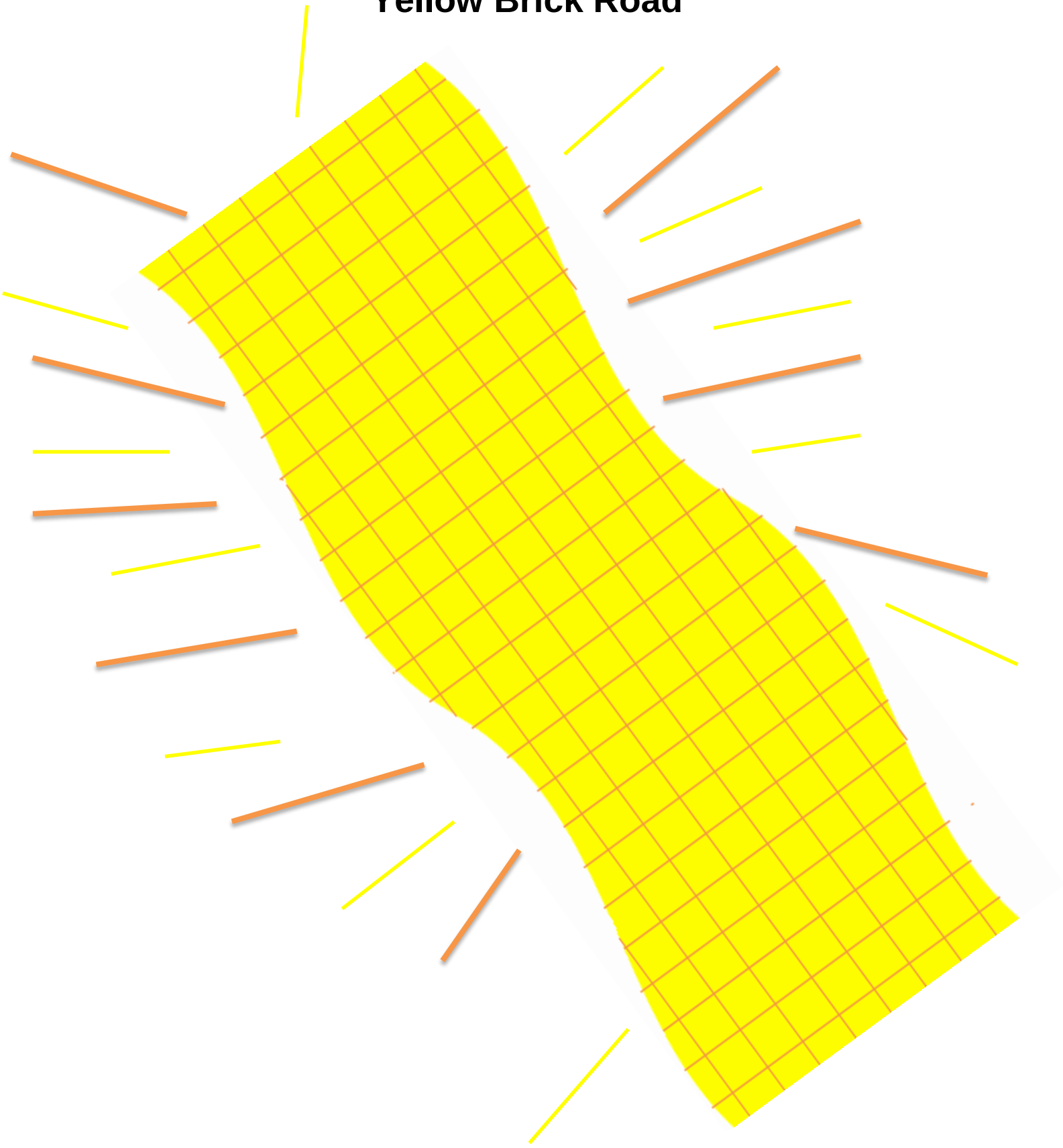
Blank Fraction Bar Manipulatives



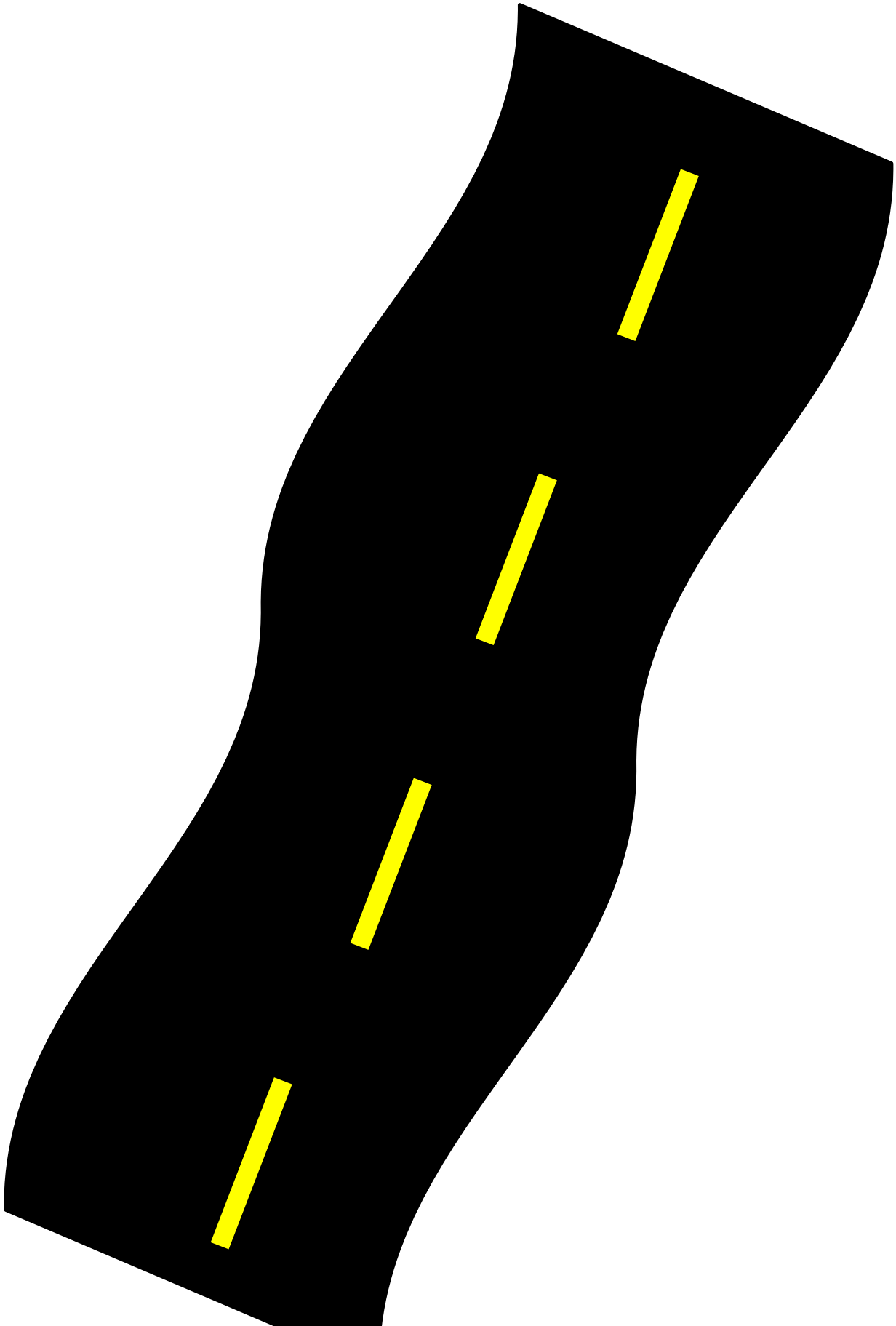
Fraction Story Two Step Story Problem Organizer



Yellow Brick Road

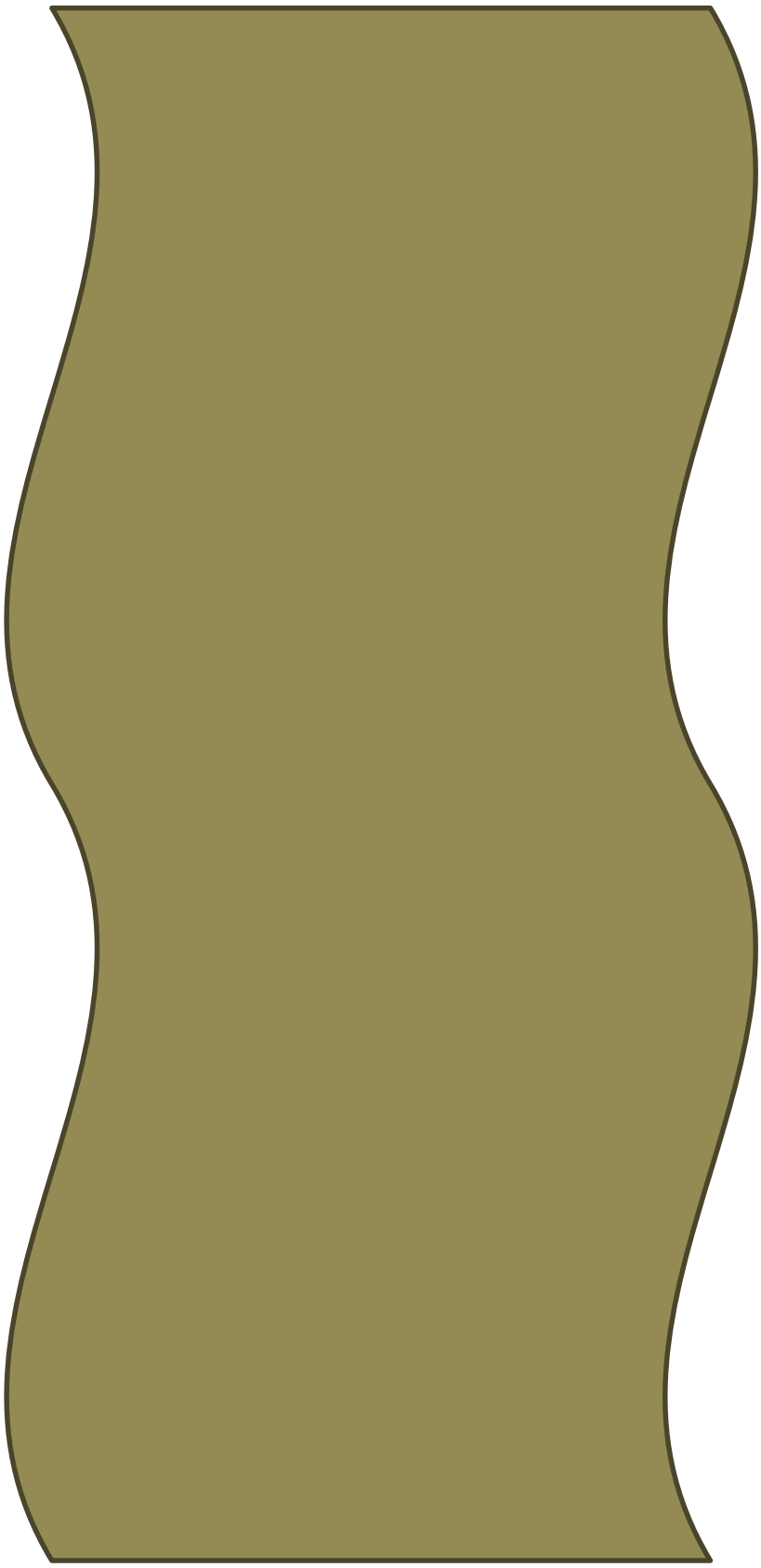


Paved Road



LearnZillion

Dirt Road



Name _____ Date _____

Exit Ticket

The school fair decorating committee is making a banner. Jack has $\frac{3}{12}$ of the 12 foot banner to decorate. Ling has of $\frac{5}{12}$ the banner to decorate. How much of the banner will Raj need to decorate? Show your work.