

Spring 2014

# Integrating Math and Language Arts in the Classroom

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**Integrating Math and Language Arts in the Classroom**

**Honor's Project 2014**

**Emilee Blake**

## **Honor's Project**

Emilee Blake

Unit Outline

### **Day 1**

Topic: Reader's Theatre

Standards: CCSS.ELA-Literacy.RF.4.3

4.NF.B.3a

ELA-Literacy.RI.4.7

Lesson:

- Read students a picture book about adding and subtracting fractions
- A group will demonstrate a Reader's Theatre
- Get into small groups to practice Reader's Theatre

Assessments: None

### **Day 2**

Topic: Adding and subtracting fractions with like denominators

Standards: CCSS.Math.Content.4.NF.B.3c

Lesson:

- Modeling
- Practice in small groups

Assessments: Observations

### **Day 3**

Topic: Word Problem Vocabulary

Standards: CCSS.Math.Content.4.NF.B.3d

4.NF.B.3c

4.NF.B.3d

CCSS.ELA-Literacy.RI.4.4

Lesson:

- Vocabulary list
- Story problem to equation examples and practice
- Paragraph about procedures and story problems

Assessments: worksheet & paragraph

#### **Day 4**

Topic: Continued practice with adding and subtracting like denominators

Standards: CCSS.Math.Content.4.NF.B.3c

Lesson:

- Examples on board
- Small group practice

Assessments: Formative walking around and helping students

#### **Day 5**

Topic: Practice solving and writing word problems

Standards: CCSS.Math.Content.4.NF.B.3d

CCSS.ELA-Literacy.RF.4.3

CCSS.ELA-Literacy.W.4.2d

Lesson:

- Perform reader's theatre
- Writing word problems

Assessments: Writing word problems and solving word problems

#### **Day 6**

Topic: Assessment of adding and subtracting like denominators

Standards: CCSS.Math.Content.4.NF.3c

CCSS.Math.Content.4.NF.3d

CCSS.Math.Content.4.NF.3c

Lesson:

-Introduce measuring utensils

-Quiz

Assessments: Quiz

### Day 7

Topic: Real life application

Standards: CCSS.Math.Content.4.NF.3d

Lesson:

- Make batch of no bake cookies

Day 1			
		<b>Date</b>	3-3-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>1</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Using literature to learn how to add and subtract fractions

### Standards

- 4.NF.B.3a “understand addition and subtraction of fractions as joining and separating parts referring to the same whole”
- Literacy.RF.4.3 “Know and apply grade level phonics and word analysis skills in decoding words”
- ELA-Literacy.RI.4.7 “Interpret information presented visually, orally, or quantitatively and explain how the information contributes to an understanding of the text in which it appears”

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## Learning Objectives/ Rationale

- By the end of the lesson, students will be able to summarize the steps in the story read aloud to them.
- By the end of the lesson, students will be able read their read aloud out loud with their group.

The students are listening to a group perform a reader's theatre so that the students know what a reader's theatre is and what they will be doing. I gave the students time to practice their reader's theatre skills in class so that they have time to practice right after seeing someone else do it and they will have more time to prepare. It is important for students to read aloud in math class because this gives students practice explaining math procedures orally and also gives them practice listening and understanding math procedures that are explained orally.

## Planned Assessments

- Pre-Assessment: I will be giving students two problems having students add and subtract fraction with like denominators.

## Differentiated Instructional Strategies

- Students will be grouped according to language arts class for read aloud.
- Students with vision problems will sit near the front so that they can see the book I am reading.
- Each group will have a read aloud just right for their reading level.

## List Resources

- Picture book
- 3 read alouds
- Pre-test
- Adler, David. *Working with Fractions*. Holiday House Inc. 2007

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 7 mins

- Tell students that we are going to learn how to add and subtract fractions.
- Have students take pre-test to measure what they already know on a piece of paper
  - $2/4 + 1/4$
  - $1/5 + 3/5$

- Explain that the students are going to be performing a reader's theatre for their peers at the end of the unit to practice both math and language arts skills.

"Now we are going to see what a reader's theatre looks like"

## **2. CENTRAL ACTIVITY**      **Allotted Time: 32 mins**

- The pre-determined group will perform a reader's theatre for the class.
- The teacher will say "the reader's theatre is a way for you to learn how to add and subtract fractions as well as practice your reading skills. You will be able to practice for a week before you perform".
- The teacher will split the class into their groups and pass out the reader's theatre.
- The group will practice their reader's theatre for the remainder of the class period.

## **3. CLOSURE**

**Allotted Time: 5 mins**

- The students will ask any questions that they may have after practicing.
- The students will turn to a partner and explain how to add and subtract fractions from what they have learned through the reader's theatre.

Homework: Practice Reader's Theatre

### Reader's Theatre (Example)

Person 1: Adding fractions is as easy as adding normal numbers

Person 2: When these fractions have common denominators

Person 1: All you have to do is add the numerators

Person 2: That's the number up top

Person 1: and put it over the denominator

Person 2: that's the number on the bottom

Both: You do NOT add the denominators together.

Person 1: So if Kyle has a whole pizza and Sam gives him  $\frac{1}{8}$  of his pizza

Person 2: you just add  $\frac{8}{8} + \frac{1}{8}$  to get  $9 \frac{1}{8}$

Person 1: Which is  $1 \frac{1}{8}$  pizzas

Person 2: When subtracting fractions with like denominators

Person 1: You follow the same easy rules.

Person 2: So  $\frac{6}{7} - \frac{1}{7} = \frac{5}{7}$ !

Both: Adding and subtracting fractions with like denominators is just like adding whole numbers!

Day 2			
		<b>Date</b>	3-4-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes



<b>Unit Topic or Theme</b>	Like denominators	Day <b>2</b> of <b>7</b>	<b>CMT Initials</b>	
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**Central Focus:** Adding & subtracting like denominators

**Standards**

- 4.NF.B.3c “Add and subtract mixed numbers with like denominators”

**Learning Objectives/ Rationale**

- At the end of the lesson, students will be able to add and subtract numbers with like denominators.
  - At the end of the lesson, students will be able to add and subtract mixed numbers with like denominators.
- It is important for students to review how to write mixed numbers as an improper fraction so that they can easily add and subtract fractions by putting them in improper form. I am doing direct instruction because students need to know the basic skills and procedures first before they can do it on their own. Then, students get individual time to practice these skills so that they are able to actually do the problems on their own.

**Planned Assessments**

- Formative assessment: I will monitor students as they work with their groups and assess whether they understand and help accordingly.
- Formative assessment: The students will complete an exit slip that shows how well they understood the lesson.

**Differentiated Instructional Strategies**

- Students with IEPs will be in one group with an adult support to help them work through the problems.
- Students will be able to work with manipulatives to support kinesthetic and visual learners.

**List Resources**

- Smart Board
- 14 sets of fraction manipulatives
- Homework worksheets
- Exit slips

**THE LESSON PROCEDURES**

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### 1. READINESS Allotted Time: 5 mins

- The teacher will review how to make mixed numbers improper fractions by writing  $6\frac{3}{4}$  on the board and asking students how to make it an improper fraction.
- The teacher will write  $\frac{24}{5}$  on the board and ask the students how to make it a mixed number.
- The teacher will ask a student to define denominator.  
“We will be using our prior knowledge about mixed numbers and improper fractions to add and subtract fractions with the same denominators.”

### 2. CENTRAL ACTIVITY Allotted Time: 35 mins

- The teacher will model how to add fractions with like denominators.
- The teacher will explain that you just add the numerators together and keep the same denominator without adding the denominators together.  
-Ex:  $\frac{1}{4} + \frac{3}{4} = \frac{4}{4}$   
 $-\frac{2}{8} + \frac{4}{8} = \frac{6}{8}$
- The teacher will explain to add mixed number together you add the fractions together, then add the whole numbers together.  
-Ex:  $6\frac{1}{5} + 2\frac{3}{5} =$   
 $\frac{3}{5} + \frac{1}{5} = \frac{4}{5}$   
 $6+2=8$   
 $8\frac{4}{5}$   
-Ex:  $7\frac{4}{6} + 1\frac{5}{6} =$   
 $\frac{3}{6} + \frac{4}{6} = \frac{7}{6}$   
 $7+1=8$   
BUT we need to make  $\frac{7}{6}$  an improper fraction so we add  $\frac{6}{6}$  or 1 to the 8 to get  $9\frac{1}{6}$ .  
Remind students that it is just like carrying when adding multi digit numbers
- The teacher will then model how to solve all 4 examples above with fraction squares.
- The students will get with a partner and begin solving the worksheet using fraction squares.

### 3. CLOSURE

Allotted Time: 5 mins

- The students will solve the problems on the board on a blank sheet of paper as an exit slip:
  - $\frac{3}{7} + \frac{4}{7}$
  - $\frac{5}{12} + \frac{3}{12}$

Homework: Finish worksheet

Name

Date



**ADDING SUBTRACTING FRACTIONS**  
**WITH LIKE DENOMINATORS SHEET 1**

Add or subtract these fractions that have the same denominator.

1)  $\frac{7}{6} + \frac{2}{6} = \frac{\quad}{6}$       2)  $\frac{7}{5} - \frac{4}{5} = \frac{\quad}{5}$

3)  $\frac{9}{10} - \frac{7}{10} = \frac{\quad}{10}$       4)  $\frac{7}{9} + \frac{6}{9} = \frac{\quad}{9}$

5)  $\frac{8}{7} + \frac{6}{7} = \frac{\quad}{7}$       6)  $\frac{11}{4} - \frac{6}{4} = \frac{\quad}{4}$

7)  $\frac{12}{15} + \frac{7}{15} = \frac{\quad}{15}$       8)  $\frac{15}{12} - \frac{4}{12} = \frac{\quad}{12}$

9)  $\frac{11}{6} - \frac{7}{6} = \frac{\quad}{6}$       10)  $\frac{12}{9} + \frac{13}{9} = \frac{\quad}{9}$

11)  $\frac{19}{20} - \frac{13}{20} = \frac{\quad}{20}$       12)  $\frac{9}{7} + \frac{8}{7} = \frac{\quad}{7}$

13)  $\frac{24}{25} + \frac{13}{25} = \frac{\quad}{25}$       14)  $\frac{14}{11} - \frac{5}{11} = \frac{\quad}{11}$

15)  $\frac{15}{14} + \frac{16}{14} = \frac{\quad}{14}$       16)  $\frac{28}{30} - \frac{15}{30} = \frac{\quad}{30}$



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Day 3			
		<b>Date</b>	3-5-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>3</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Word Problems

### Standards

- 4.NF.B.3c “Add and subtract mixed numbers with like denominators”
- 4.NF.B.3d “Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators”
- ELA-Literacy.RI.4.4 “Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

### Learning Objectives/Rationale

- At the end of the lesson, students will be able to solve story problems involving adding and subtracting fractions with like denominators.
- At the end of the lesson, students will be able to explain the steps to solving a word problem and determining what operation to use.

It is important for students to be able to interpret story problems and understand what operation they should be doing. Students can usually easily solve problems, but they have problems with story problems. Reading is an important skill for math class when students have to solve story problems. I have the students write a paragraph explaining how to solve word problems so that they get writing practice, practice explaining how to solve a problem, and an assessment for me to make sure that they understand.

### Planned Assessments

- Formative assessment: I will be collecting students’ group work to assess if they were able to solve the word problems.
- Formative assessment: The students will turn in their paragraph and I will be assessing their writing skills as well as the accuracy of the steps described.

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## Differentiated Instructional Strategies

- Students with IEPs will be in one group with an adult support to help them work through the problems.
- Students will be given a writing assignment according to the language arts class that they are placed in.

## List Resources

- Smart Board
- 14 sets of fraction manipulatives
- Word problem worksheet

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 5 mins

- The teacher will ask a student to walk her through solving  $2/3 + 4\ 1/3$ .
- The teacher will ask a student to walk her through solving  $7/8 - 5/8$
- “Now we are going to practice solving word problems adding and subtracting fractions with like denominators.”

### 2. CENTRAL ACTIVITY Allotted Time: 35 mins

- The teacher will project important story problem vocabulary on the SmartBoard and give each student a list of the words.
- The teacher will read words that could be clues for addition and clues for subtraction.
- The teacher will do a sample story problem at the board.  
“Cade has  $2/4$  of a battery left on his ipod. He charges his ipod and gets  $1/4$  more of a batter bar. How much of a full battery charge does his ipod now have?”
- The teacher will draw sticks to see what students will work together.
- The students will work with a partner to complete the story problems.
- The teacher will remind students to underline important information and pay attention to key words. The teacher will tell students to write their answer in simplest form. All word problems should have important information underlined and the question squiggled.

### 3. CLOSURE

Allotted Time: 5 mins

- The teacher will do a problem at the board and call on a student to help her solve this story problem:  
Mrs. Donley has a whole pizza. She gives away  $5/6$  of it to the other teachers. How much of the pizza does she have for herself?

Homework: Mrs. Donley & Mrs. Karaffa’s LA: Write a paragraph explaining how to solve a story

problem and how to decide what operation to use.

Mr. Marzola LA: Write how to decide what operation to use in a story problem.

## Adding & Subtracting Fractions with Like Denominators

Name:

1. Katie has  $\frac{6}{10}$  of a pie. Jeanette bought her another whole pie. How much pie does Katie have?

2. Derek measures out  $\frac{5}{8}$  cup of flour. He adds  $\frac{3}{8}$  to his cookie batch. How much flour is left in the measuring cup?

3. Sasha read  $\frac{2}{6}$  of a book for homework. How much of the book does she have left to read?

4. Denise buys  $\frac{3}{11}$  feet of a gold chain. She will buy  $\frac{4}{11}$  feet tomorrow. How much does she have now?

5. Kyle's phone has  $\frac{3}{8}$  charge. If he charges his phone  $\frac{4}{8}$  more, how much of a charge does he have?

Day 4			
		<b>Date</b>	3-6-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>4</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Additional practice with adding and subtracting fractions with like denominators.

### Standards

- 4.NF.B.3c “Add and subtract mixed numbers with like denominators”
- 4.NF.B.3d “Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators”
- ELA-Literacy.RI.4.4 “Determine the meaning of general academic and domain-specific words or phrases in a text relevant to a grade 4 topic or subject area.

### Learning Objectives/Rationale

- At the end of the lesson, students will be able to add and subtract fractions with like denominators.
- At the end of the lesson, students will be able to solve word problems requiring them to add and subtract fractions with like denominators.

It is important to review how to write numbers in simplest form so that they are able to write the sums and differences in simplest form. It is important to give the students extra practice with this skill because students need more practice than just one day on computation and story problems.

### Planned Assessments

- Formative: I will be collecting students’ worksheets to assess whether they are getting correct answers or making repeated errors.

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## Differentiated Instructional Strategies

- Students on IEPs will be working together in a group with the special education teacher.
- Students who need extra time will be allowed to take the assignment home for homework.

## List Resources

- Worksheets
- Smart Board

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 5 mins

- The teacher will ask for three volunteers to read their paragraph aloud to the class.
- The class will have a discussion after each paragraph about the validity and clarity of the instructions.
- The teacher will ask for three words that mean add and three words that mean subtract that could be in a word problem.
- The teacher will have students write the following in simplest form:  
4/10  
6/16  
56/8
- The teacher will do the sample problem  $8/12 + 3/12$  on the board.
- The teacher will solve the following word problem on the board:  
Mr. Weese lost some students' papers. If  $4/5$  of the class had turned in their assignment, and he now has  $2/5$  of the classes' papers, how much of the classes' papers did he lose?  
-The teacher will explain that this can be solved through subtraction.  
-Every problem today should be simplified from now on  
-All word problems should be underlined for important information and a squiggled question

### 2. CENTRAL ACTIVITY Allotted Time: 35 mins

- The teacher will draw sticks for students to work with a partner.
- The students will work through the worksheet using paper and pencil or fraction squares.
- The teacher will walk around the room and assist students' as needed.



**3. CLOSURE****Allotted Time: 5 mins**

- Each group will share with the class whether they like fraction circles or paper and pencil.
- The teacher will go through each word question on the sheet and ask students how they decided to use subtraction or addition.

Homework: Finish worksheet if not already completed

## Adding and Subtracting Fractions

Name: \_\_\_\_\_ Class: \_\_\_\_\_

Add and subtract the following fractions

$$\frac{5}{7} + \frac{1}{7} =$$

$$\frac{3}{5} - \frac{2}{5} =$$

$$\frac{4}{6} + \frac{1}{6} =$$

$$\frac{4}{8} + \frac{1}{8} =$$

$$\frac{2}{7} - \frac{1}{7} =$$

$$\frac{4}{6} - \frac{1}{6} =$$

$$\frac{3}{8} - \frac{1}{8} =$$

$$\frac{3}{9} + \frac{1}{9} =$$

$$\frac{9}{6} - \frac{0}{6} =$$

$$\frac{1}{3} + \frac{2}{3} =$$

$$\frac{4}{6} - \frac{4}{6} =$$

$$\frac{1}{8} + \frac{4}{8} =$$

$$\frac{4}{7} - \frac{1}{7} =$$

$$\frac{5}{7} + \frac{1}{7} =$$

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

$$\frac{3}{9} + \frac{1}{9} =$$

$$\frac{6}{9} - \frac{1}{9} =$$

$$\frac{8}{6} - \frac{1}{6} =$$

$$\frac{5}{8} - \frac{1}{8} =$$

$$\frac{1}{5} + \frac{3}{5} =$$

$$\frac{2}{9} + \frac{2}{9} =$$

$$\frac{8}{9} - \frac{1}{9} =$$

$$\frac{4}{8} - \frac{1}{8} =$$

$$\frac{4}{7} + \frac{1}{7} =$$

$$\frac{2}{8} + \frac{7}{8} =$$

$$\frac{5}{3} - \frac{1}{3} =$$

$$\frac{4}{7} - \frac{1}{7} =$$

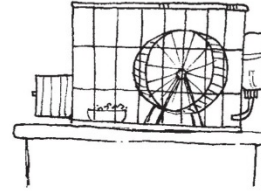


Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Riddle 10**

**What is the best way to raise a pet hamster?**



Solve the problems.

Rename the answers in lowest terms.

Solve the riddle using your answers below.

	Fraction	Lowest Terms
Sara and her twin sister baked 24 cookies. Their scout troop ate 18. What fraction names the cookies that are left?	$\frac{\quad}{\quad}$ P	$\frac{\quad}{\quad}$ T
Ten students in the class take music lessons. Six play the piano. The rest play the violin. What fraction names the students who play the violin?	$\frac{\quad}{\quad}$ C	$\frac{\quad}{\quad}$ F
There are six people in Daniel's family. Four of them wear glasses. What fraction names the people in his family who do not wear glasses?	$\frac{\quad}{\quad}$ K	$\frac{\quad}{\quad}$ R
Tamika read 12 books last month. Two of the books were biographies. The rest were fiction. What fraction of the books Tamika read were not biographies?	$\frac{\quad}{\quad}$ U	$\frac{\quad}{\quad}$ I

**Solve the Riddle!**

Write the letter that goes with each answer.

$\frac{6}{24}$     $\frac{5}{6}$     $\frac{4}{10}$     $\frac{2}{6}$     $\frac{5}{6}$     $\frac{1}{4}$     $\frac{10}{12}$     $\frac{6}{24}$    **■**

Day 5			
		<b>Date</b>	3-7-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>5</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Reader's Theatre and writing

### Standards

CCSS.Math.Content.4.NF.B.3d "Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators"

CCSS.ELA-Literacy.RF.4.3 "Know and apply grade level phonics and word analysis skills in decoding words"

CCSS.ELA-Literacy.W.4.2d "Use precise language domain specific vocabulary to inform about or explain the topic"

### Learning Objectives/Rationale

- At the end of the lesson, students will be able to write their own word problems.
- At the end of the lesson, students will be able to read a script about adding and subtracting like denominators.

Reading is an important skill in any area of life. Once again students need to be able to explain how to solve problems as well as how to listen to math procedures and understand them. I am having students write their own story problems because this reinforces writing skills that they will need for the rest of their lives. In addition, writing story problems helps students with story problem skills.

### Planned Assessments

- Formative Assessment over students reading skills for the language arts teacher.
- Formative Assessment over students writing skills when writing story problems for a specific equation.

## Differentiated Instructional Strategies

- Students can write their own word problems according to their abilities.
- Students will be grouped so that an equal number of students from each language arts class are in each group.

## List Resources

- Reader's Theatre scripts
- Worksheets

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 5 mins

- The teacher will explain that students will be coming to the front of the class with their groups to perform the reader's theatre.
- The teacher will show an example for writing equations into story problems.
  - $1 \frac{2}{3} + \frac{1}{3} = ?$
  - Brandon has  $1 \frac{2}{3}$  of an apple. Michael gave him  $\frac{1}{3}$  of an apple. How many apples does he have now?

### 2. CENTRAL ACTIVITY Allotted Time: 35 mins

- The student groups will come forward and perform their reader's theatre.
- The teacher will pass out the worksheets for writing their own story problems.
- Students will work with a partner to write story problems. The teacher will draw sticks and the students on IEPs will work with the special education teacher.

### 3. CLOSURE

Allotted Time: 5

- The students will turn in their worksheet.
- The teacher will explain that the students will be taking a quiz tomorrow. The teacher will go over the instructions on each part of the quiz.

Homework: Study

## Writing Story Problems

Name: \_\_\_\_\_

Write your own story problem for the following expressions

1.  $\frac{5}{8} + \frac{2}{8}$

2.  $\frac{13}{15} - \frac{5}{15}$

3.  $\frac{4}{24} + \frac{12}{24} - \frac{1}{24}$

## Reader's Theatre

Group 1: Adding and subtracting fractions with like denominators can be simple as kicking a ball.

Group 2: Yeah! Denominators are the numbers on the bottom

Group 3: When you add them they stay the same

Group 1: So  $4/10 + 5/10$  the ten stays the same. Make sure you don't add the tens together!!

Group 2: That would give you an incorrect answer.

Group 3: We all know what  $5 + 4$  is

Everyone: Yes! Obviously 9

Group 1: so the answer is  $9/10$

Group 2: With subtraction you do the exact same thing

Group 3: the denominator stays the same

Group 1: For example,  $8/12 - 5/12$  would just be  $8-5$  over 12

Group 2: Since  $8-5=3$  the numerator is 3

Group 3: So the answer is  $3/12$

Everyone: To simplify you divide the numerator and denominator by 3 to get  $1/4$ !

Day 6			
		<b>Date</b>	3-8-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>6</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Adding & subtracting fractions with like denominators

### Standards

CCSS.Math.Content.4.NF.B.3d “Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators”

4.NF.B.3c “Add and subtract mixed numbers with like denominators”

4.MD.A1 “Know relative sizes of measurement units”

### Learning Objectives/Rationale

- At the end of the lesson, students will be able to add and subtract fractions with like denominators.
- At the end of the lesson, students will be able to solve story problems by adding and subtracting fractions with like denominators.

I am assessing students so that I can see if they understand adding and subtracting fractions. The students have problems that are straight problem solving and some story problem questions because both have been taught and both are important skills. The story problems measure students reading skills as well.

### Planned Assessments

- Summative Assessment: Quiz over adding and subtracting fractions with like denominators.

### Differentiated Instructional Strategies

- Students on IEPs will have the quiz read to them.



## List Resources

- Quiz

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 4 mins

- The teacher will ask students for examples that give them clues whether you are supposed to add or subtract in a story problem.
- The teacher will explain the directions on the quiz.

### 2. CENTRAL ACTIVITY Allotted Time: 38 mins

- The students will complete their quiz
- When they are finished they are to work in their math journal
- The teacher will hold up various measuring utensils and tell students the units that are measured in the utensil.  
Ex: Measuring cup  
Teaspoon  
Tablespoon

### 3. CLOSURE

Allotted Time: 3

- The teacher will explain that the totals on the quiz are actually instructions to making something that we will make tomorrow.
- The teacher will hold up several of the items and the students will tell what the measurement is called.

Homework: None

## Adding & Subtracting Fractions with Like Denominators Quiz

Directions: Solve the following problems. Write all answers in simplest form.

1. Kyle has  $\frac{6}{8}$  cup of sugar. He adds  $\frac{2}{8}$  cup of sugar. Then he doubles the amount of sugar. How much sugar does he have?

2.  $\frac{7}{24}$  cup of butter +  $\frac{5}{12}$  cup of butter =

3.  $\frac{6}{4}$  cups milk –  $\frac{3}{4}$  cup of milk =

4. Michelle has 1 cup of peanut butter. She drops  $\frac{1}{4}$  cup of peanut butter. How much peanut butter does she have left?

5.  $\frac{7}{8}$  teaspoons of vanilla –  $\frac{4}{8}$  teaspoon of vanilla

6. Maria has  $\frac{4}{10}$  teaspoon of cocoa. She adds  $\frac{6}{10}$  teaspoon more to the cocoa she already has. Then she multiplies the amount of cocoa by 4. How much cocoa does she have?

7. Lakeesha has  $\frac{11}{12}$  cup of oats. Her mom takes  $\frac{1}{12}$  cup of oats. Then she multiplies her oats by 3. How many cups of oats does Lakeesha have?

Day 7			
		<b>Date</b>	3-10-14
<b>Subject/ Course</b>	Math	<b>Grade</b>	4
		<b># of Students</b>	28
		<b>Class Length</b>	45 minutes
<b>Unit Topic or Theme</b>	Like denominators	Day <b>7</b> of <b>7</b>	<b>CMT Initials</b>

**Central Focus:** Real life application

### Standards

.MD.A1 “Know relative sizes of measurement units”

### Learning Objectives/Rationale

- At the end of the lesson, students will be measure the ingredients of the recipe.
  - At the end of the lesson, students will make no bake cookies.
- I am having the students actually follow the recipe so that they have an authentic experience adding and subtracting fractions. Also, it is a fun end to the unit for the students!

### Planned Assessments

- Formative Assessment- I will monitor students as they make their cookies to see how they use the measuring utensils.

### Differentiated Instructional Strategies

- Students will be placed in groups of varying abilities.
- Kinesthetic learners will learn by making cookies.

### List Resources

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- Spoons
- Measuring cups
- Teaspoons
- Peanut butter
- Coco
- Milk
- Butter
- Large bowls
- Vanilla
- Wax paper

## THE LESSON PROCEDURES

### 1. READINESS Allotted Time: 5 mins

- The teacher will pass back the quiz and pass out the recipe worksheet.
- The teacher will review the measuring tools.
- The teacher will pass out the materials.
- The teacher will demonstrate how to use each measuring tool.

### 2. CENTRAL ACTIVITY Allotted Time: 40 mins

- The teacher will explain “sometimes we need to double recipes, or we want to add or subtract some of the ingredients, this is when you would need to add and subtract fractions”.
- The students will follow the recipe and make cookies.
- The students will eat the cookies

### 3. CLOSURE

Allotted Time: 5 mins

- The students will clean up the supplies
- The teacher will say “now you have experience using fractions in real life”

Homework: None

## **Lessons Learned: Implications for Teaching this Unit in my Future Classroom**

Because of the pacing of the year in my fourth grade class, I wasn't able to implement the unit in my actual classroom. However, I have had valuable experience in the classroom with actual fourth grade students so I can reflect on how I think the unit would go. I have some changes that I would make since I first started the project in January. However, for the most part, I think that this unit plan would be very successful.

First, after knowing the speed of fourth grade students, I would lengthen the timeline of the unit. I have noticed that fourth grade students don't remember previous concepts very well. For example, my students cannot subtract multi-digit numbers that are required in the decimal unit although they had already had a whole unit on the topic in the fall. This happens with every topic that the students need to build upon. Whenever multiplication is needed for a unit, we have to reteach multiplication before we can learn the unit that we are actually supposed to be on. Therefore, my students would probably need a whole day reviewing simplifying fractions.

In addition, my students would need more than 3 days on practicing adding and subtracting fractions with numbers and story problems. I would lengthen the unit to probably 10 days because I would add more days of continuing practice. Also, I need to provide more time for students to practice the Reader's Theatre. At the beginning of student teaching I was unaware of the age level. Now I see that fourth grade students are quite a bit slower than middle school students. They need more time writing or even getting their supplies out. If I move too quickly they get completely lost. However, I do not think that my unit had too much information to get in. From experience, I know that my unit is concise enough so that students' understand.

I also see just how important it is to reinforce language arts skills in math class. Some of my best math students are struggling readers and writers. Therefore, I want to improve these skills by relating it to a subject that they are confident in. Also, students who prefer language arts would be able to use that portion of the unit to better their mathematical skills. Lastly, in real life, I probably wouldn't do the cooking activity. Maybe I would give a demonstration at the front of the class with one batch. It would take fourth grade students more than 45 minutes to complete the recipe and we couldn't extend it into the next day. In addition, they would need a lot of assistance and I wouldn't be able to help each group by myself. Therefore, I would have more flexibility with the quiz because the answers wouldn't have to be recipe related. This would also eliminate the confusion with multiplying answers for the recipe.