#### MATHEMATICS: Fractions and decimals SCIENCE: Measurement LANGUAGE ARTS: Following directions

**AIM:** Students recognize and generate equivalent forms of fractions and decimals.

**BACKGROUND:** For students to excel in math, they need to have a basic understanding of mathematical terms. Before beginning this activity, it would be helpful to discuss the following terms and have students come up with examples of each:

- •Whole number
- •Fraction
- Numerator
- Denominator
- •Mixed number
- •Improper fraction
- •Decimal

#### **BEFORE PLAYING**

**Discussion:** Ask students to describe their favorite homemade meal. For homework, give each student an index card. Have them ask their parent or guardian for the recipe to the meal. Tell students to write the recipe on the card and then bring the card in the next day. (On the index card, students should indicate serving size.) As a class, discuss the recipes: What do they have in common? (They all use measurements, have instructions, and

so on.) How do they differ? (The ingredients, instructions, serving sizes, and so on vary from recipe to recipe.)

#### AFTER PLAYING

**Activity:** Once students have completed the two After Playing Worksheets, make the pudding according to the recipe on the second worksheet.

**ASSESSMENT:** Assess students' answers on the After Playing Worksheets. Observe students as they measure ingredients during the After Playing Activity.

**EXTENSION:** Collect the index cards from the Before Playing discussion. Photocopy the recipes. Construct a classroom cookbook and sell the cookbook throughout the school as a classroom fundraiser.

#### RESOURCES

**<u>Comic-Strip Math: Mini-Story Problems</u>**, by Dan Greenberg (Scholastic, 2000, \$9.95, ISBN 0-43904-383-2). Tackle math the fun way! The cartoons and accompanying word problems in this book help students master fractions, measurement, problem solving, and more. To order, call 1-800-SCHOLASTIC.

#### http://www.funbrain.com/numbers.html

To help your students strengthen their math skills, visit this site from the Learning Network. The site includes games covering fractions, arithmetic, measurement, coordinates, and more.

#### http://www.pbs.org/wgbh/amex/kids/flight/feature\_barn.html

Visit PBS's web site and read all about Bessie Coleman and her life as a barnstormer. Follow the links to learn about other famous fliers.

#### ANSWERS

**Brave Bessie, Worksheet**: (1. She heard exciting tales from soldiers returning from World War I. 2. France. 3. Bessie believed in equality for all and she only wanted to support those who shared her ideals. Answers will vary.)

Before Playing, Worksheet: (Get to THE POINT.)

After Playing, Worksheet I: (Across: 1. Decimal. 2. Numerator. 3. Improper fraction. Down: 1. Denominator. 4. Mixed number. 5. Whole number.)

After Playing, Worksheet II: (Ingredients: 1 package Jello Instant white chocolate pudding; 1 3/4 cup dry milk; 2/3 cup water.)



#### CONNECT TO YOUR CURRICULUM

This activity can help you meet these National Standards:

#### Mathematics:

- •Understand numbers, ways of representing numbers, relationships among numbers, and number systems
- •Compute fluently and make reasonable estimates
- •Understand measurable attributes of objects and the units, systems, and processes of measurement
- •Apply appropriate techniques, tools, and formulas to determine measurements

#### Science:

Change, constancy, and measurement
Abilities necessary to do scientific inquiry

#### **CURRICULUM AREAS**

Math: fractions; decimals; mixed numbers; volume; measurement; computation; order of numbers. Language Arts: following directions; giving directions. Technology: computer science.



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

Brave Bessie (Student Article)

Date:

Speeding, spinning, reeling—performing tricks. Bessie Coleman, the first African-American woman pilot and the first woman stunt pilot, put on a good show for spectators. But her fame didn't come easy.

Born to a poor family in Atlanta, Texas in 1892, Bessie Coleman grew up determined to escape poverty and achieve success. When she turned 23, she moved to Chicago. As she heard returning soldiers tell wild tales of flying in World War I, she decided to become a pilot.

Bessie applied to flying schools around the U.S. But she was a woman—and she was black. Very few women of any race held a pilot's license in 1918. Those who did were white and wealthy. School after school refused to admit Coleman.

Not one to give up, Bessie learned French, withdrew her savings, and set off for Paris in 1920. In France, she enrolled in an aviation class. Seven months later, Bessie knew how to fly and received her international pilot's license. She headed home to the U.S.

Over the next five years, Coleman performed at many air shows. Reporters publicized her events as "heart-thrilling stunts." People flocked to watch Bessie's air tricks. She used her fame to encourage other African Americans to fly. She also took a stand against racism by refusing to perform at locations that wouldn't admit African Americans.

On April 30, 1926, Bessie took her last flight. While preparing for an air show in Florida, one of her control gears got caught and her plane unexpectedly plunged toward earth. Despite her tragic death, "Brave Bessie"—as the press called her—reached more than just her personal goals. She helped achieve equality in the air.

#### **Questions:**

1. How did Bessie Coleman become interested in flying?

2. Where did Bessie have to go to get her pilot's license?

**3.** Why did Bessie refuse to perform at locations that wouldn't admit people of her race? Have you ever stood up for something you believed in? Explain.



SA-3a.1

### CHILI PARLOR ACTIVITY I (Before Playing)

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

1/<sub>2</sub> = .5

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

**Q: What did one decimal say to the other decimal?** To find out, use math! Circle the correct answer to the questions below. Then write the letter in the blank above the number of the problem. The letters will spell out the answer to the riddle.

1.)	is a	also the mixe	ed number, 2	1/3.		
T)	7/3	<b>A)</b> 1/2	<b>N)</b> 5/3	<b>D)</b> 4/3		
2.)	Order the f	ollowing dec	imals from lo	west to high	est: .4, .7, .1	500
R)	.4, .1, .7	<b>H)</b> .1, .4	,.7 <b>L)</b> .7	7, .4, .1	<b>J)</b> .7, .1, .4	
3.)	ha:	s a denomin	ator.			a hun
Y)	7 E	<b>E)</b> 2/5	<b>I)</b> 2.9	<b>F)</b> 3		
4.)	is e	equal to 1/4				
H)	.75	<b>&lt;)</b> .5	<b>P)</b> .25	<b>S)</b> 2.25		
5.)	Which of th	ne following i	s the smalles	t fraction?		
O)	1/6 <b>l</b>	<b>J)</b> 1/2	<b>H)</b> 2/3	<b>I)</b> 1/3	$\frown$	
6.)	is a	an improper	fraction.			
B)	4/9 <b>I</b>	<b>_)</b> .7	<b>N)</b> 10/11	I) 5/3		
<b>7.)</b> 2 2/5 + 3 1/2 =						
C)	4 7/8	<b>F)</b> 6	1/8	<b>N)</b> 5 9/10	<b>U)</b> 3	3/10
8.)	1 1/4 + 2	1/3 =				
T)	3 7/12	<b>H)</b> 1	2/12	<b>C)</b> 3 1/6	<b>K)</b> 1	1/3
An	<b>swer:</b> Get t	to	2 3	4 5	6 7	 8

(After Playing Worksheet, #1)

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

Date:

Read the clues below to fill in the crisscross puzzle with the correct words.

#### Across



(After Playing Worksheet, #2)

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

Date:

We've given you a tasty recipe below—minus the ingredients! Follow each set of directions, then circle the word next to the correct answer. Write the word in the blank above the letter of the problem.

-Convert each of the following mixed numbers to improper fractions.

<b>A.)</b> 1 2/3	5/3	chocolate	1/3	vanilla
<b>B.</b> ) 2 4/7	14/4	eggs	18/7	milk
<b>C.)</b> 5 7/8	40/8	sugar	47/8	pudding

-Convert each fraction below to a decimal.

<b>D.)</b> 1/2	.5 instant	.75	mix
E.) 2/5	.6 <b>salt</b>	.4	water
<b>F.)</b> 9/10	.9 package	.3	strawberry

-Add the following mixed numbers. Reduce.

<b>G.)</b> 1 1/2 + 2 1/2 =	3 icing	4 cup
<b>H.)</b> 2 2/3 + 2 1/3 =	2 teaspoon	5 Jello
I.) 5 1/6 + 3 5/12 =	8 7/12 <b>dry</b>	8 5/6 flour
<b>J.)</b> 3 2/5 + 2 1/15 =	5 7/15 white	11 4/15 <b>brownie</b>

