MY COOKING WITH FRACTIONS COOKBOOK

Overview

You are about to create one of the most exciting cookbooks ever! All of the recipes included will be created by you utilizing your imagination.   The recipes will contain fractions and mixed numbers which you will work with in a variety of ways. This project has been designed to allow you to discover fractions on your own with minimal assistance from your teacher. There will be checkpoints along the way to make sure you are making good progress.

After completing a recipe you will have several tasks to complete using the ingredients.
All work for a particular recipe should be completed on the back of the recipe page.

RECIPE #5: *A recipe for being an American   [SAMPLE]*

We are all proud to be living in the United States of America, where we have so many freedoms. Across the 50 states there are so many wonderful places to visit, people to see, and things to do. What qualities do you think are most important in being an American? Create your patriotic recipe.

BEING AN AMERICAN	
$2\frac{1}{4}$ quarts	Patriotism
$3\frac{1}{8}$ quarts	Democracy
$1\frac{1}{2}$ quarts	Independence
$2\frac{5}{8}$ quarts	Diversity
$1\frac{7}{12}$ quarts	Generosity
$3\frac{2}{3}$ quarts	Right to Vote

After you have completed your ingredients, print this page (page 6). Then visit the Activities Section for Recipe #5.

Recipe #5
1. Write three word problems which require the subtraction of fractions or mixed numbers. Solve them.
2. Write three word problems which require the addition of fractions or mixed numbers. Solve them.
3. Convert all ingredients into pints.
4. Convert all mixed numbers into improper fractions.
5. Convert all fractions into decimals.
6. Write three word problems which involve this recipe and also include your three favorite states in some way.

WORD PROBLEMS - Recipe #5   [*SAMPLE]*

Section 1: Three word problems – subtraction

BASIC

1. How much more Patriotism is required than Independence?
2. Which is greater: Diversity or Generosity? By how much?
3. Is the difference between the Right to Vote and Democracy more or less than $\frac{1}{2}$?

ADVANCED

1. In Canada they have only Patriotism and Democracy. In Germany they only have Independence and Generosity. How many more quarts does Canada have than Germany?

2.   Which two ingredients are exactly $\frac{1}{2}$ of a quart apart?

3. Suzie started with 20 quarts in Americanism, which is a mixture of all of the ingredients plus a Mystery Ingredient. Beginning with Patriotism, subtract each ingredient one at a time from the previous total to determine the amount of Mystery Ingredient. List all answers along the way.

Section 2: Three word problems - addition

BASIC

1. In making the recipe Will combined Diversity and Generosity first. How many total quarts did he have?
2. Since Leslie only liked fractions with numerators of 1, she decided to use only those ingredients. How many total quarts did she use?
3. Jason loves being an American so much that he has triple the amount of Generosity than the recipe requires. How much Generosity does Jason have? (Note: You must add to get the answer. You are not allowed to multiply.)

ADVANCED

1. Freddie has everything required to be an American, except that he has no generosity. How many quarts full is Freddie?

2. Billy is trying to figure out which three ingredients can add up to exactly $7\frac{1}{4}$. Can you help him determine the answer?

3. Gina decides to only add together the ingredients which have denominators that are factors of eighty. What is the sum of all of her ingredients?

Section 6: Three word problems – use favorite states

1. The Griswolds visit these states in order: Texas, Oklahoma, Kansas, Nebraska, South Dakota, North Dakota and Minnesota. If the dropped the smallest ingredient in a river in Texas and the largest ingredient in a river in Minnesota (they went in order from least to greatest), list which states they dropped off which ingredients in.
2. Mr. Mangham loves Rhode Island because his mom lives there. In Rhode Island whole numbers are not allowed and all fractions must have a denominator of 48. Rewrite the recipe so that it is legal in Rhode Island and uses the same amount of each ingredient.
3. In Georgia many of the people love peaches. A strange law says that a person can vote more than once. In fact for every time they peaches equal to the amount in the Right to Vote ingredient, they will get one vote. Jimmy ate 25 quarts of peaches. Through subtraction, show how many votes he will get?

RECIPE #1: *A recipe for happiness and success*

Happiness and success require a lot of hard work. What other things do you think combine to create happiness and success? By filling in the table below, you will have completed your first recipe. While you get to choose the ingredients, the amounts of each one have already been filled in for you. (As we go along some amounts will be already completed and some you will get to decide.)

HAPPINESS AND SUCCESS	
$\frac{3}{4}$ cup	
$\frac{5}{8}$ cup	
$\frac{6}{7}$ cup	
$\frac{6}{11}$ cup	
$\frac{7}{10}$ cup	
$\frac{8}{9}$ cup	

See the Activities Section for Recipe #1.

RECIPE #2: *A recipe for living a long life*

Americans are living almost 30 years longer than we were just 100 years ago. What has changed that allows us to live so long? You decide!

LIVING A LONG LIFE	
$2\frac{3}{4}$ cups	
$1\frac{5}{8}$ cups	
$3\frac{1}{2}$ cups	
$\frac{7}{8}$ cup	
$2\frac{1}{4}$ cup	
1 cup	

See the Activities Section for Recipe #2.

RECIPE #3: *A recipe for passing sixth grade*

Do you think you will pass sixth grade? Maybe you will have one of the top averages in the entire school. Share your secrets with the rest of the kids. What do you do to make good grades?

PASSING SIXTH GRADE	
$1\frac{2}{4}$ tbsp.	
$3\frac{6}{8}$ tbsp.	
$2\frac{3}{9}$ tbsp.	
$\frac{2}{8}$ tbsp.	
$4\frac{9}{12}$ tbsp.	
$1\frac{10}{15}$ tbsp.	

See the Activities Section for Recipe #3.

RECIPE #4: *A recipe for Mud Pie*

Have you ever heard of Mud Pie? It is a real dessert, except that no mud is used to make the pie, of course. Chocolate would be the main ingredient in a real Mud Pie. But what if it truly was MUD Pie? List your ingredients below to make this wonderful ☺ treat for your whole family (pigs will love it too!).

MUD PIE	
$\frac{10}{4}$ pints	
$\frac{10}{8}$ pints	
$\frac{13}{2}$ pints	
$\frac{30}{8}$ pints	
$\frac{21}{12}$ pints	
$\frac{16}{3}$ pints	

See the Activities Section for Recipe #4.

RECIPE #5: *A recipe for being an American*

We are all proud to be living in the United States of America, where we have so many freedoms. Across the 50 states there are so many wonderful places to visit, people to see, and things to do. What qualities do you think are most important in being an American? Create your patriotic recipe.

BEING AN AMERICAN	
$2\frac{1}{4}$ quarts	
$3\frac{1}{8}$ quarts	
$1\frac{1}{2}$ quarts	
$2\frac{5}{8}$ quarts	
$1\frac{7}{12}$ quarts	
$3\frac{2}{3}$ quarts	

See the for Recipe #5.

RECIPE #6: *A recipe for summer fun*

People love the summer. Kids love the summer even more. No school. No homework.
No mean teachers. What is the most exciting part of summer for you? Create your own
summer fun by combining the ingredients you choose below.

SUMMER FUN	
$\dfrac{7}{8}$ gallons	
$3\dfrac{5}{8}$ gallons	
$\dfrac{3}{4}$ gallons	
$\dfrac{13}{16}$ gallons	
$\dfrac{8}{9}$ gallons	
$2\dfrac{2}{3}$ gallons	

See the Activities Section for Recipe #6.

RECIPE #7: *A recipe for* _____

Now it is your turn to decide for what you wish to create a few recipes. Be as creative as you wish and make it something relevant to you. Sports? Books? Friends? Movies? School? You pick the topic and you make the recipe. Just be sure to follow the guidelines about the fractions in each recipe.

All ingredients must be listed as fractions or mixed numbers. All numerators must be 1.

See the Activities Section for Recipe #7.

RECIPE #8: *A recipe for* _____

Now it is your turn to decide for what you wish to create a few recipes. Be as creative as you wish and make it something relevant to you. Sports? Books? Friends? Movies? School? You pick the topic and you make the recipe. Just be sure to follow the guidelines about the fractions in each recipe.

You must use 2 whole numbers, 2 fractions, and 2 mixed numbers.

See the

RECIPE #9: *A recipe for* _____

Now it is your turn to decide for what you wish to create a few recipes. Be as creative as you wish and make it something relevant to you. Sports? Books? Friends? Movies? School? You pick the topic and you make the recipe. Just be sure to follow the guidelines about the fractions in each recipe.

You must use improper fractions for all of your ingredients.

See the Activities Section for Recipe #9.

RECIPE #10: *A recipe for* _____

Now it is your turn to decide for what you wish to create a few recipes. Be as creative as you wish and make it something relevant to you. Sports? Books? Friends? Movies? School? You pick the topic and you make the recipe. Just be sure to follow the guidelines about the fractions in each recipe.

You must use mixed numbers for all of your ingredients. Each one must have a different denominator.

See the Activities Section for Recipe #10.

RECIPE #11: *A recipe for* _____

This is your last one to dream up for now so make it a good recipe. It could be a recipe that will make you famous!

You must use fractions or mixed numbers that are not in simplest form for all of your ingredients.

See the Activities Section for Recipe #11.

RECIPE #12: *A recipe for teamwork*

Whether you are at school, at home, or playing soccer, teamwork is an important part of everyday life. Have you ever been in a group that didn't seem to have any teamwork? What qualities do you think make up good teamwork? Your recipe for the team can be typed below.

TEAMWORK	

See the Activities Section for Recipe #12.

RECIPE #13: *A recipe for an excellent teacher*

Have you ever asked your parents if they remember any of their teachers from elementary or middle school? Almost everyone can think of a couple of teachers that had an impact on their life in some way. You have had many teachers in your life…some at school and some outside of school. What qualities do you think make up a good teacher? Think of your favorite teacher and why you chose this particular person.

BEING A EXCELLENT TEACHER	

See the Activities Section for Recipe #13.

RECIPE #14: *A recipe for a mystery*

Do you like a good mystery? Whether it is a book, a movie, or a TV show, many people love mysteries. The Hardy Boys and Nancy Drew series are some of the best selling books of all-time. Scooby-Doo was always trying to help solve a mystery. What ingredients do you think mix together to form a thrilling mystery?

MYSTERY	

See the Activities Section for Recipe #14.

RECIPE #15: *A recipe for the future*

What do you think life will be like in 50 years? Fifty years ago TV was new. There was no such thing as the internet or even a personal computer. CD's and DVD's had never been heard of. Fifty years from now will we have flying cars? Be traveling into space all the time? Have robots run our homes? What things do you think will be important to making an exciting future?

THE FUTURE	

See the Activities Section for Recipe #15.

<u>ACTIVITIES SECTION</u> - As always, show all your work!!!!!

<u>Recipe #1</u>
1. Choose two ingredients. Find a common denominator and determine which fraction is the largest. Repeat three more times with different fractions.
2. Choose one ingredient. Write four equivalent fractions.
3. Choose two ingredients. Find the total number of cups.
4. Choose two ingredients. Determine which one uses more cups and by how much more.
5. Place all of the ingredients in order from least to greatest. Use any method you choose to determine how to best accomplish this.
6. Rewrite each fraction so that it is not in simplest form.

<u>Recipe #2</u>
1. Place the ingredients in order from greatest to least.
2. Convert all mixed numbers to improper fractions.
3. Choose one ingredient. Write three equivalent fractions with denominators greater than 100.
4. Write the numerators of each fraction. Find the LCM of all of the factors.
5. Write three word problems relating to your recipe which require the addition of fractions or mixed numbers. Solve them.
6. Write three word problems relating to your recipe which require the subtraction of fractions or mixed numbers. Solve them.

<u>Recipe #3</u>
1. Look only at the fractions involved (delete all whole numbers). Place these fractions in order from least to greatest.
2. Write all fractions or mixed numbers in simplest form.
3. Write all mixed numbers as improper fractions.
4. Write a subtraction word problem relating to your recipe which requires renaming (borrowing/regrouping) from the whole number. Solve it. Draw a picture of the fractions involved which explains what happened when you "borrowed" from the whole number.
5. Write three word problems relating to your recipe which require addition of fractions or mixed numbers. Solve them.
6. Write two word problems relating to your recipe of your choice involving the fractions or mixed numbers. These problems should be designed for extremely smart math students. Solve them.

<u>Recipe #4</u>
1. Convert all improper fractions into mixed numbers.
2. Write three word problems relating to your recipe which require the subtraction of fractions or mixed numbers. Solve them.
3. Convert all ingredients into cups, quarts, and gallons.
4. Write your own problem relating to your recipe that involves equivalent fractions in some way. Solve it.
5. Represent all of the fractions with pictures.
6. How much total mud is in the pie (the sum of all of the ingredients)?

1. Write three word problems relating to your recipe which require the subtraction of fractions or mixed numbers. Solve them.
2. Write three word problems relating to your recipe which require the addition of fractions or mixed numbers. Solve them.
3. Convert all ingredients into pints.
4. Convert all mixed numbers into improper fractions.
5. Convert all fractions into decimals.
6. Write three word problems relating to your recipe which involve this recipe and also include your three favorite states in some way.

1. If you had to add all of the mixed numbers, what would the LCD be?
2. Your summer was cut in half because of summer school. Cut all ingredients in half as well.
3. Write three word problems relating to your recipe which require the subtraction of fractions or mixed numbers. At least one problem must involve renaming. Solve them.
4. Write three word problems relating to your recipe which require the addition of fractions or mixed numbers. Solve them.
5. Draw a number line from 0 to 4. Place all the ingredients in the correct position on the number line.
6. You need to make five servings of Summer Fun. Assuming the recipe is originally for one serving, determine the new amount of each ingredient required.

For each of these recipes create 10 word problems. Assuming that you are writing these problems relating to your recipe for a typical sixth grader, write three easy problems, four average problems, and three difficult problems. Solve each of the problems.

These recipes are to be used to teach students who are just studying fractions for the first time. Use each recipe in a method that you choose to teach one of the following topics:
1. Comparing and ordering fractions
2. Converting between improper fractions and mixed numbers (either way)
3. Simplifying fractions and equivalent fractions
4. Adding fractions and mixed numbers
5. Subtracting fractions and mixed numbers

Pick a different topic for each recipe. Be sure the use appropriate quantities to teach your chosen skill.

To teach the concept, explain as if you are writing instructions for someone who has very little prior knowledge of fractions. Use WORDS and PICTURES to help teach your chosen concept.