Learning Math with Kayla

Book 1: Adding and subtracting like fractions

Vicki Meyer

Illustrator Sue Lynn Cotton

The Learning Math with Kayla Books

Book 1 Adding and subtracting like fractions

Book 2 Multiplying fractions

Book 3 Learning multiplication facts

Book 4 Place values, Multiplying large numbers

Book 5 Adding and subtracting unlike fractions

Book 6 Learning about improper and mixed fractions

Book 7 Dividing fractions

Book 8 Adding and subtracting large numbers

Book 9 Solving long division problems

Book 10 Working with decimals and percents

Book 11 Learning about negative numbers

Book 12 Problem solving!

Website: **www.learningwithkayla.org**

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About the Kayla Books

The Kayla books tell the story of a fourth grade girl who has gotten so far behind in her math class that she is not able to understand what her teacher is trying to teach her. So rather than pay attention, she spends her class time drawing pictures.

Her math teacher, Mr. Williams, is aware of how poorly Kayla is doing. He decides a tutor would be the best way to help Kayla learn her math.

In this first book, Kayla is introduced to Ms. Gibbs, her new math tutor. Ms. Gibbs begins by teaching Kayla how to add and subtract like fractions. She soon discovers, however, that Kayla needs help with the math covered in earlier grades. In the later books in this series, Ms. Gibbs teaches Kayla much of the math she needs to be more successful in school.

There are twelve books in this series. Whether you're a fourth grader, in middle school or in high school; a Mom or Dad or a Grandparent, you can learn along with Kayla.

The story is told by Kayla right before she goes off to college.

About Kayla

I have been asked if Kayla is a real person. She and others in the book are composites of the many kids I have tutored, plus myself as a kid. I remember in elementary school, drawing flowers rather than playing attention to my teacher. And, more recently, I remember walking with a girl to the tutor room and talking about our shoes *and* our shoe laces.

About the Author

After Vicki raised six really smart kids, she began studying for her Ph.D. in order to keep up with them. She taught at the university level for about 25 years, then began tutoring elementary school students. Vicki soon found a new career for herself tutoring math for at-risk kids, writing about her experiences, and putting together the Kayla books.

Vicki lives with her husband, Ed, in Sarasota, Florida.

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And a special thanks to my husband, Ed, for all of his great suggestions, his skillful editing, and especially his patience. I would not be able to complete the books without him.

DEDICATION

To my Mother, Phyllis Hurtova, who was prevented from going past the fourth grade due to political unrest in Czechoslovakia, yet continued to be a life-long learner.

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Introduction

Hi, my name is Kayla. I have an amazing story to tell you and I need to tell it to you right away. You see, in just a few weeks I am going off to college and I know I'll be real busy. I'll be even busier than I have been since I began fourth grade.

That's when I first met Ms. Gibbs. She was my tutor and she is my friend still. I want to tell you all about her and all about my other friends too. I'll begin my story on the day I first met Ms. Gibbs.

Chapter 1

Meeting Ms. Gibbs

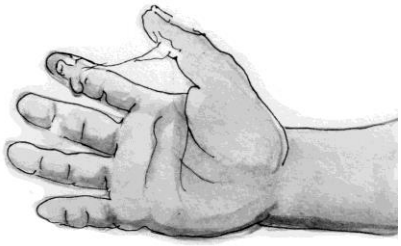
It was just a few weeks after I started fourth grade. I remember that day well. I especially remember what I was eating for lunch - chips and gooey cheese sauce.

I was almost done eating when I heard Mr. Williams, my math teacher, call my name. He was standing by the door and waved for me to come over to him. I quickly took my last chip and swirled it around in the cheese sauce. I stuck the chip in my mouth and hurried to the door.

Next to Mr. Williams was a woman in a dark suit with a nice white shirt. She had short, natural, afro-textured hair and her skin was dark like mine. She looked important.

Mr. Williams made the introductions. “Ms. Gibbs, I’d like you to meet Kayla. Kayla, this is Ms. Gibbs. She is going to be your math tutor,” Ms. Gibbs held out her hand to shake mine.

I remember how shy I was back then. I had never shaken a grown-up’s hand before. I did see my Momma do it, though, so I extended my hand to her.



At that instant, I remembered the gooey cheese sauce. I could feel it on my fingers but it was too late. Ms. Gibbs was firmly clasping my hand.

I was mortified. She looked directly at me in a quiet, kind sort of way. Then, almost without notice, she took a handkerchief from her pocket and wiped her hand.

I stood frozen, waiting for her to bawl me out. My throat tightened up. Then Ms. Gibbs simply said that she would return next week to help me with my math.

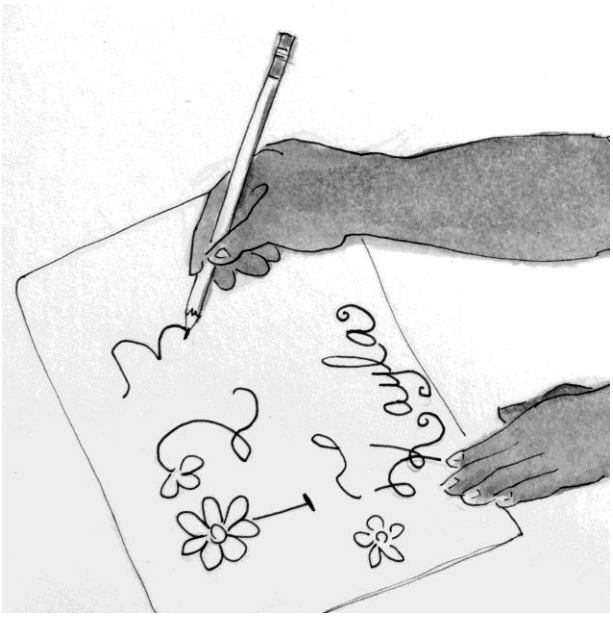
I didn't, I *couldn't*, say anything, I just quickly turned around and returned to my table. Little did I know at that time that Ms. Gibbs would change the direction of my life.

Chapter 2

First day of tutoring

“Kayla, there is someone here to see you.” I jumped when Mr. Williams called my name. I quickly covered up my drawings. This was math class and I always drew pictures in my math class even though I wasn’t supposed to.

I usually drew flowers but sometimes I drew the numbers Mr. Williams was talking about. I tried to make them look fancy.

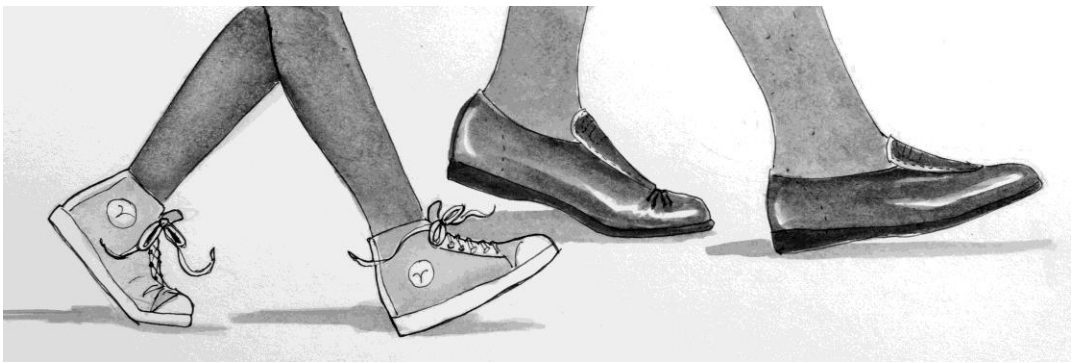


I walked over to the door where Mr. Williams and Ms. Gibbs were standing. “Ms. Gibbs is here to tutor you,” Mr. Williams said. “You remember Ms. Gibbs, don’t you? I introduced you to her last week.”

I nodded my head yes but I didn’t say anything. I remembered that hand shake and my throat began to tighten up again. I didn’t think I would see Ms. Gibbs again, but there she was.

We walked down a long hall together. Ms. Gibbs was tall and thin. She had long legs and walked briskly. I had trouble keeping up with her.

She must have been wearing some kind of special shoes because she didn't make any noise when she walked. My shoes made a clumping sound that echoed. I tried hard to walk quietly. The clumping sound did lessen but I could still hear it and it still echoed.



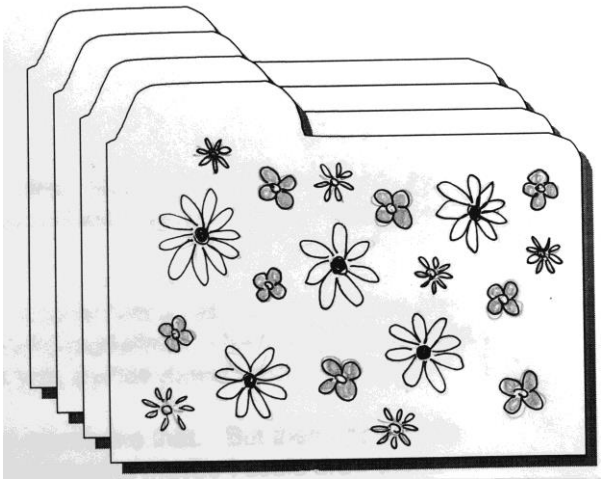
We came to a room at the far end of the hall. The room was small. There was just one table in it and four chairs. No other furniture.

Right away, I noticed a large window on the back wall. I could see trees and flowers through that window. The opposite wall had a big window too but all I could see were people passing in the hall. There was a whiteboard on the third wall but nothing else. The fourth wall was completely bare. No pictures. No whiteboard. Nothing!

Ms. Gibbs sat down on one of the chairs. She motioned for me to sit right next to her. She opened her big bag and took out four folders. She asked me to pick the one I liked best.

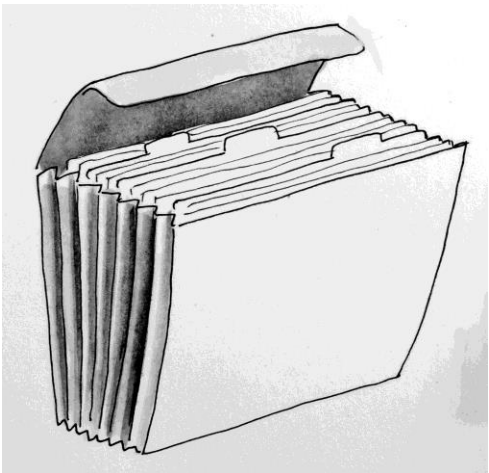
One folder had a cat on the cover. Another had pretty flowers on it. The third folder had kids playing basketball. The cover of the fourth folder had a picture of a nice house with a white picket fence all around it.

I liked that house. I'd like to live in a house like that. But then I pointed to the folder with the flowers on it. I was thinking maybe I could draw them.



Ms. Gibbs said it would be my special folder for all my math papers. She put the other three folders back into her bag. Then she took a big green folder out of her bag. It was thick with papers.

"This is my folder and this is where I keep all my math papers." Ms. Gibbs said.



Chapter 3

Learning to add and subtract like fractions

Ms. Gibbs opened her folder. She took out a piece of paper and put it in front of us. It had circles, squares, and other shapes on it. Each of the figures was divided into sections.

Oh no! This looks a lot like the fraction papers Mr. Williams hands out. I don't like fractions. They don't make any sense.

Ms. Gibbs reached in her bag again. She took out a box of colored pencils and said gently, "Let's color."

I can color? She wants me to color? I asked myself.

The first figure on the paper was a big circle. It was divided into three sections. It looked like this:

Ms. Gibbs said, "I'll color in one section and you can color in another. Would you like to do that?"

I nodded my head yes. Ms. Gibbs picked a green pencil and colored

in a section. She asked me to color in another section with whatever colored pencil I wanted. I picked a red pencil and I colored in a section red.

Reader, please color the sections for Ms. Gibbs and Kayla

"See, this circle is divided into three equal sections. Each section is one third of the circle," Ms. Gibbs said.

"I colored one of the sections green," she pointed to the one she colored, "that's one-third. You colored one section red. That's another one-third of the circle," she pointed to the one I colored.

"When we add them together we get two-thirds. It is written like this:

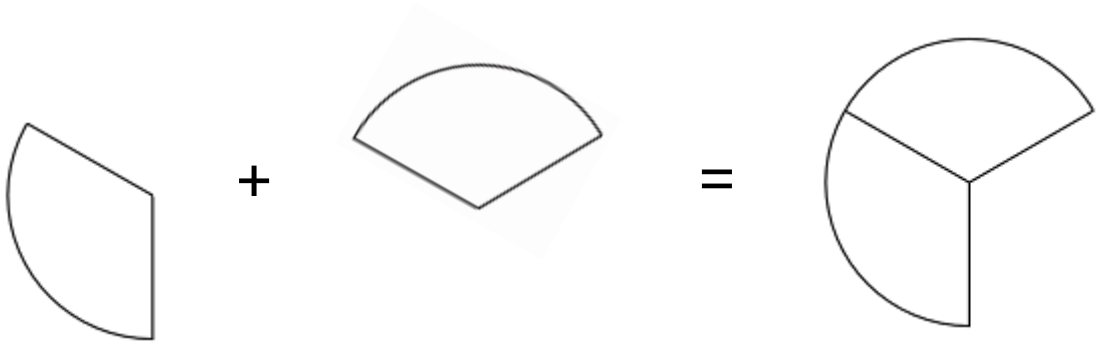
$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

"As you can see, we colored less than one whole circle, we colored only two-thirds of it. Using fractions is a good way to talk about something less than one, now, isn't it?" Ms. Gibbs asked.

I didn't say anything. I didn't even nod my head. I just looked at what she wrote. And then I looked at the circle.

"Notice the bottom numbers are the same, they are both threes. That's because the circle is divided into three equal parts. Since we're adding thirds, the answer has to be in thirds, it couldn't be anything else.

"To add fractions with the same bottom number," Ms. Gibbs explained, "just add the top numbers to get the top number of the answer. Since the bottom numbers in this problem are both threes, the bottom number in the answer has to be a three. That's because we're adding thirds.

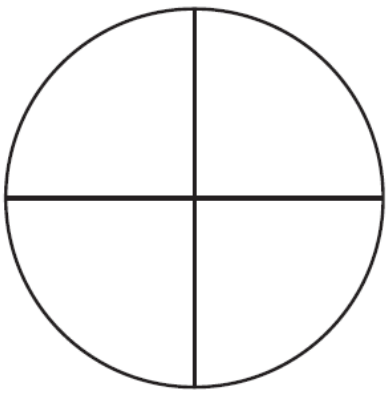


$$\frac{1}{3} + \frac{1}{3} = \frac{2}{3}$$

“As you can see, when we add one-third of a circle to another one-third of a circle, we get two-thirds of a circle,” Ms. Gibbs explained.

I still didn’t say anything. I just looked back at the circle we had colored, and then at what Ms. Gibbs wrote.

The next figure on the paper was another circle, but this one was divided into four equal sections instead of just three. Ms. Gibbs picked up the orange pencil and colored in one section. “Would you like to color in two sections this time?” she asked.



I nodded my head yes. I still hadn't said a word to Ms. Gibbs even though my throat didn't feel tight anymore.

I first picked a blue pencil and colored in one of the sections blue. I colored another section red.

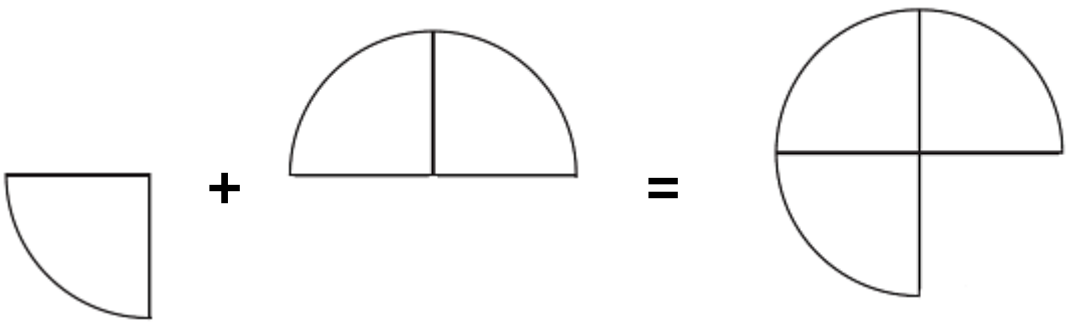
Reader, please color the sections for Ms. Gibbs and Kayla

"See, this circle is divided into four equal sections. I colored one-fourth of the circle," Ms. Gibbs said as she pointed to the section she colored. "And you colored two-fourths of the circle." She pointed to the ones I colored. "To see how many fourths of the circle are colored, we just add the fourths together. As she explained, she wrote:

$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

"And as you can see, three-fourths of the circle is colored.

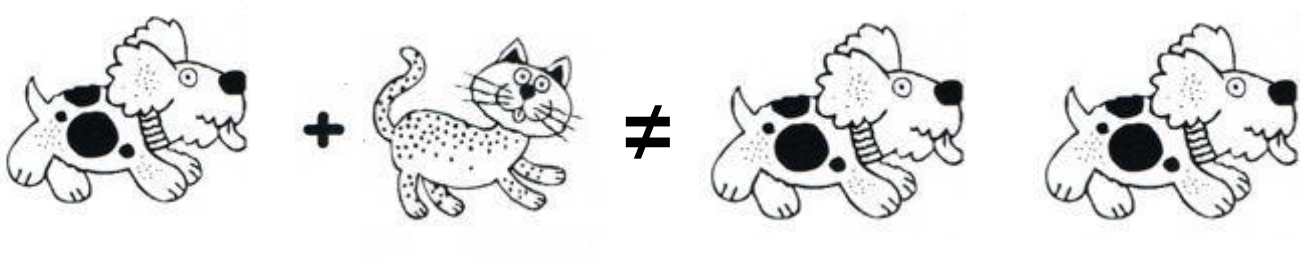
"We can also visualize adding these fourths of a circle together like we just did for thirds of a circle:



$$\frac{1}{4} + \frac{2}{4} = \frac{3}{4}$$

Hmmm. I was sorta, kinda getting it.

Ms. Gibbs continued to explain. “Just imagine if you were adding puppies. One puppy plus one puppy equals two puppies. That makes sense. But what would we get if we tried to add one puppy plus one kitten? It just doesn’t make sense to say we get two puppies, now, does it, Kayla?”



Reader, that equal sign with a line through it just means “not equal.”

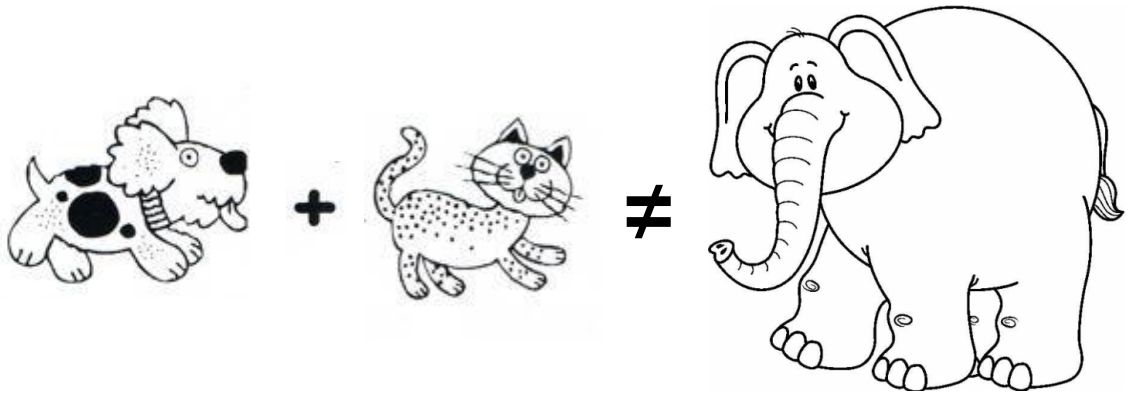
I shook my head no. Then I thought, how silly it would be to say one puppy plus one kitten equals two puppies. That wouldn’t make any sense at all! But then I thought, they make two *animals*, but I didn’t say that to Ms. Gibbs.

“One-third and one-fourth are as different from each other as a puppy and a kitten. ‘Third’ is the name of a fraction just like ‘puppy’ is the name of an animal. ‘Fourth’ is the name of a *different* fraction, just like ‘kitten’ is the name of a *different* animal. We cannot add these different fractions together to get two-thirds or two fourths any more than we can add a puppy and a kitten and get two puppies - or two kittens.

“And you must NEVER, EVER, add the bottom numbers together like this:

$$\frac{1}{3} + \frac{1}{4} \neq \frac{2}{7}$$

“That would be like adding a puppy and a kitten and getting something altogether different – like an elephant!



I thought to myself, that would be even sillier than getting two puppies!

Ms. Gibbs continued, “Now here is a fraction bar that’s divided into five equal sections. Each section is one-fifth of the bar. This time, I want you to color three sections. I’m going to color two sections.”

I colored one of my sections yellow, one orange, and the third one blue. Ms. Gibbs picked up a pink and a green pencil and colored her sections with them.

Reader, please color the sections for Ms. Gibbs and Kayla

“You colored three-fifths of the bar and I colored two-fifths of the bar. How much of the fraction bar is colored?” Ms. Gibbs asked.

I was looking at the fraction bar as Ms. Gibbs spoke. I noticed how nice the colors looked all together. And I could see all the sections of the bar were colored.

“All of it.” I quickly answered.

That was the first thing I said out loud to Ms. Gibbs. But right after I said that, I thought to myself, that can’t be right. The answer was supposed to be a fraction. I knew that!

“That’s right,” Ms. Gibbs said with a smile. “As you can see, we colored the whole bar. Whenever the top number is the same as the bottom number, the fraction equals one. Three-fifths and two-fifths equal five-fifths and five-fifths equals...?”

“One?” I was almost sure I was right.

“Yes,” she said; “It couldn’t be anything else but one. As you can see, together we’ve colored one whole bar, you and I.” As she explained, Ms. Gibbs wrote:

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

“And, Kayla, if the top number and the bottom number are the same, the fraction is equal to one:

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

Hmm, adding fractions doesn’t seem so hard any more. It’s just a little tricky, that’s all.

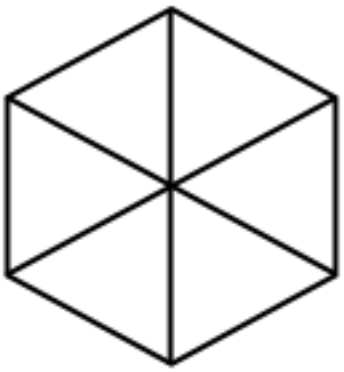
“Now I’m going to show you how to subtract fractions.” Ms. Gibbs said.

Oh, no, I'm just learning how to add fractions. Now I have to subtract them!

"You understand that with addition, if the bottom numbers are the same, you just add the top numbers." Ms. Gibbs continued on, "Well in subtraction, you just subtract the top numbers, but that's only if the bottom numbers..."

"are the same!" I finished Ms. Gibbs' sentence for her because I kinda knew what she was going to say. Hmmm, I wonder what we would do if the bottom numbers are different.

Ms. Gibbs said, "Here is a hexagon. As you can see it's divided into six sections. Please color two of the sections."



I colored them red and yellow.

Reader, please color the sections for Kayla.

I waited for Ms. Gibbs to color in her sections but she didn't. Instead, she asked me how many sections of the hexagon were left uncolored.

I counted them out loud as I pointed, "1, 2, 3, 4."

"That's right. And how many did you color?" Ms. Gibbs asked.

“Two.” I didn’t have to count them.

And that’s two-sixths of the hexagon. Do you remember how much is six-sixths?” Ms. Gibbs asked.

“It’s one! If the top number and the bottom number are the same, the fraction is always one,” I answered proudly.

“So,” Ms. Gibbs asked, if you take the whole hexagon, six-sixths, and subtract what you colored, two-sixths, what do you get?”

Hesitantly I answered, “four-sixths?”

Ms. Gibbs waited until I answered and then she wrote:

$$\frac{6}{6} - \frac{2}{6} = \frac{4}{6}$$

“That’s right, six-sixths, the whole hexagon, minus two-sixths, what you colored, equals four-sixths,” Ms. Gibbs continued to explain. “See, I just subtracted the two sections you colored, from six, the total number of sections in the hexagon. Since both fractions are sixths, we just need to subtract the top numbers.

“Now let’s add what you colored, two-sixths, to what was left uncolored, four-sixths. What does that equal?”

“Six-sixths,” I answered tentatively.

“Yes, that’s right. As you can see, subtraction is the inverse of addition. That means it undoes addition,” Ms. Gibbs explained. “Subtracting two-sixths from six-sixths gives you four-sixths. By adding the two-sixths right back to four-sixths, you get ...” Ms. Gibbs waited for me to answer.

“Six-sixths!” I answered and then quickly added. “And that’s one whole hexagon!”

Ms. Gibbs waited until I finished answering to write:

$$\frac{6}{6} - \frac{2}{6} = \frac{4}{6}$$

$$\frac{2}{6} + \frac{4}{6} = \frac{6}{6}$$

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

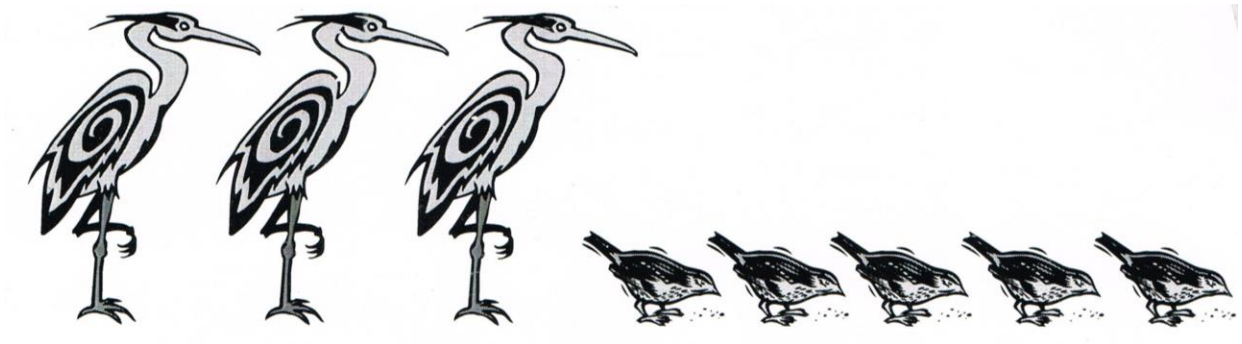
“Why Kayla, I do think you’re starting to see the logic in math,” Ms. Gibbs exclaimed.

Hmm. I don’t know about logic, but fractions are starting to make sense to me.

“Now there’s one more thing I want you to learn about fractions today. Up to now, we’ve been using figures and I have emphasized that the sections need to be the same size,” Ms. Gibbs continued.

“But fractions can also be used to describe members of a group and the members may not be the same size at all.”

Ms. Gibbs took a piece of paper from her folder with lots of birds on it. “Now here is a picture of a group of birds.” She said. “Let’s talk about these birds using fractions.



“As you can see in this picture, there are eight birds,” Ms. Gibbs continued. “Three of the birds are big, five are little. If we want to talk about these birds using fractions, we can say that three-eighths of the birds are big and five-eighths of the birds are little. Why am I using eighths to describe how many birds are big and how many are little?” Ms. Gibbs asked.

“Because there are eight birds altogether?” I was pretty sure I was right.

“Yes,” Ms. Gibbs answered, “Eight represents the total number of birds and that’s the bottom number. There are three big birds and that’s represented by three-eighths. What fraction represents the little birds?”

I counted the little birds in my head and answered, “five-eighths.”

“Yes, and how much is three-eighths and five-eights?” Ms. Gibbs asked.

"Eight-eighths and that equals one,” I answered confidently. “That’s all the birds in the picture!”

Ms. Gibbs smiled and said, “Yes, that’s right. Now this time, I’d like you to write the equation.”

“The equation?” I asked.

“Yes, the equation. I’ve been writing the equations all along. I’d like you to begin writing them.”

I held the pencil in my hand but I didn’t know what I was supposed to write. I didn’t know what an equation was. Hmm, maybe I should just ask. I looked up at Ms. Gibbs.

“Kayla,” Ms. Gibbs said, “an equation is just a math sentence with an equal sign in it. And a math sentence is just a sentence that uses numbers and symbols instead of words. Just watch me. I’ll write out the equation this time and then you can write it out the next time. All right?”

“OK,” I mumbled.

Ms. Gibbs explained as she wrote out the equation. “Three-eighths represents the fraction of birds that are big, the plus sign is the symbol telling me to add, and five-eighths represents the fraction of birds that are small. The equal sign is another symbol. It tells me that what I wrote on the left side of the equation must equal what I will now write on the right. So I add the fractions on the left side and put the sum on the right side:

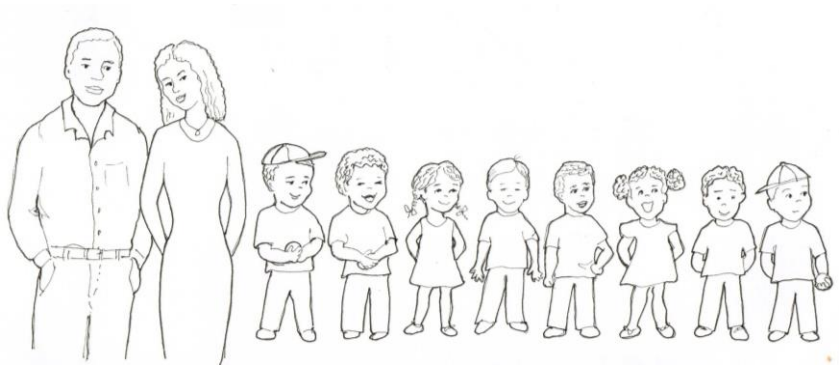
$$\frac{3}{8} + \frac{5}{8} = \frac{8}{8}$$

This sum has to equal one because it’s all the birds in the picture and as you can see, it does. The top number and bottom number of the fraction are both eights and eight-eighths equal one.” Ms. Gibbs wrote:

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

Hmm. I knew how to do that! I thought the word “equation” meant something real hard but it doesn’t. It just sounds hard. Next time I’m going to write the equation myself.

“I have one more picture of a group,” Ms. Gibbs said. “This is a picture of ten people in a room. It’s a little light, but you can see there are 2 adults and 8 children.”



"What fraction of the people in this picture is adults?" she asked.

I thought for a bit. “Two-tenths"? I answered hesitantly.

“And what fraction is children?” Ms. Gibbs asked.

Again I thought, but just for a bit, then answered confidently. “Eight-tenths. And two-tenths and eight-tenths are ten-tenths and that’s everyone in the picture.”

"Very good. Do you want to write out the equation?” Ms. Gibbs asked.

I did and it was easy:

$$\frac{2}{10} + \frac{8}{10} = \frac{10}{10}$$

Ms. Gibbs nodded and then asked, "Now what fraction of the people in this picture is males?"

Hmm, I thought to myself, one of the adults was a man and six of the kids were boys, so that makes seven males.

“Seven,” I answered. I was sure I was right.

But Ms. Gibbs said, "I asked what *fraction* is males."
"Oh, I mean seven-*tenths*." I answered.

"That’s right. And what fraction is females?"

I answered quickly, "Three-tenths. And three-tenths and seven-tenths are ten-tenths and that’s everyone in the picture."

I amazed myself how fast I was getting it. I think Ms. Gibbs was really amazed too but all she said was, “Very good.” She then asked me to please write out the equation.”

I wrote:

$$\frac{7}{10} + \frac{3}{10} = \frac{10}{10}$$

That was easy.

And then I added:

$$\frac{10}{10} = 1$$

That was easy, too.

Ms. Gibbs smiled. Then she looked at her watch and said. “Oh, our time is just about up.”

““Kayla,” she said very seriously, “you have learned a lot of new math today. It’s very important to remember all that you learned. The only way to do that is to practice adding and subtracting a lot of fractions.”

She took some papers from her folder and said, “Here are some more fraction problems. Working these problems will help you review what you learned today.”

Then Ms. Gibbs picked up the box of colored pencils and said, “These pencils might help you with your fractions. You can take them home with you just as long as you bring them back. Would you like to do that?”

I nodded my head yes. Wow! I get to take Ms. Gibbs’ colored pencils home with me!

“Now remember, I want you to work on your math every evening, fifteen minutes seems like the right amount of time. Can you do that, Kayla?” Ms. Gibbs asked.

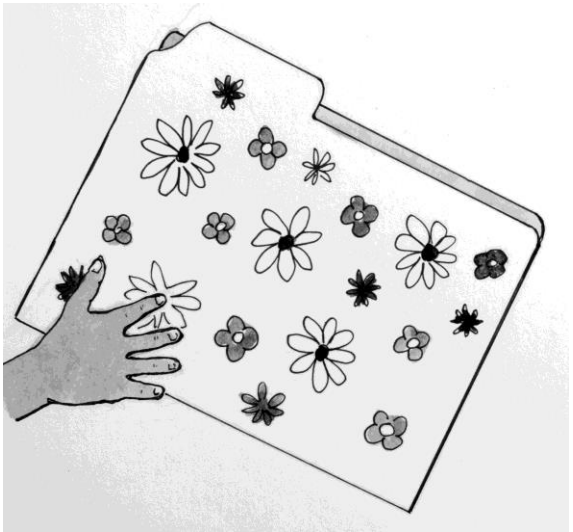
I slowly nodded my head yes but I was thinking that fifteen minutes is a long time to do homework. I usually don’t spend *any* time on homework. I’m too busy doing other stuff.

“Remember,” Ms. Gibbs continued, “Fifteen minutes each evening is all it will take to get your math down-pat. ‘Down-pat’ means that you understand your math so well that when you learn math that’s just a little harder, it won’t seem too hard at all.”

I just nodded my head again. Fifteen minutes seems awfully long. But maybe I can with my -- oh, I mean Ms. Gibbs’ -- colored pencils.

Ms. Gibbs began to put her folder in her bag. I quickly reached over to take my folder - the one with the flowers on it. I want to draw those flowers. And now that I have colored pencils, I’ll be able to color

them too.



But Ms. Gibbs put her hand on my folder. She said rather sternly, "Oh, no! That's not for you to take home now."

I looked up at her surprised and asked. "What? I can't take my folder home?"

"Oh, I'm sorry," she said. "I didn't really explain to you about your folder, now, did I?" And then she explained.

"I'll be keeping your folder in my bag. Each week I will put your math papers in it. At the end of the school year, you'll get to take your folder home. By that time, it will be thick with papers, just like mine. It will have all the math work we've been doing for the whole year."

I didn't say anything. I just wanted my folder.

Ms. Gibbs continued, "Then you'll be able to use your own papers to study math every day during your summer vacation. Not for very long, just about 15 minutes each day. That's about the same length

of time you will be studying your math during the school year.

“And at the end of the summer, you’ll be all ready for fifth grade. Now won’t that be nice?” Ms. Gibbs asked with a big smile.

Hmmm. I didn’t return her smile. I wasn’t thinking about fifth grade right now and I wasn’t thinking about math any more either.

I was still thinking about my folder. It was *my* folder! Ms. Gibbs said it was! I want to take it with me now! I want to show my Momma! I want to draw some of those flowers on the cover and I want to color them too!

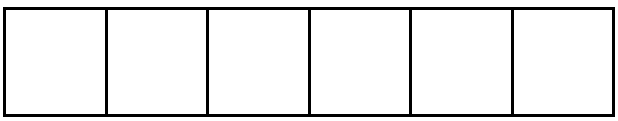
I didn’t say all that to Ms. Gibbs though. All I said was, “Hmmm…” – and I wasn’t smiling.

Chapter 4

Reviewing what I learned

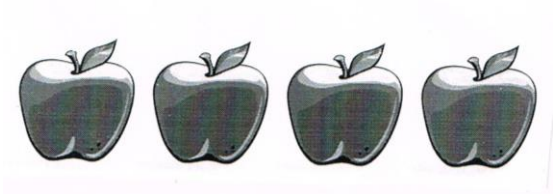
After I meet with Ms. Gibbs I try to review what I just learned so I won't forget. I don't want you to forget either. So here is a review for you.

When doing fractions, the first thing to figure out is what the bottom number is. That's the number of equal sections a figure is divided into. If a figure is divided into six sections, then the bottom number is six.



$\overline{6}$

Oh, it doesn't have to be a figure at all, it could be anything - objects, animals, or people. If there are four things in a group, then four is the bottom number.



$\overline{4}$

If there are eight things, then the bottom number is eight:

$$\frac{\quad}{8}$$

It's as simple as that.

The next thing to do is to figure out the top number. That's the number we're talking about. That sounds kinda funny so let me explain. Say a circle is divided into three sections and I colored one section. The section we're talking about is what I colored, that's one, and that's the top number. I colored one-third of the circle.

Ms. Gibbs colored one section of the circle too. So if the question is "what fraction of the circle did we color together?" You can just add the top numbers since the bottom numbers are the same. The answer is two-thirds.

But what if the question was "What fraction of the circle was left uncolored?" That's a subtraction problem. Since the bottom numbers are the same, you can just subtract the top numbers.

Three-thirds represents the whole circle, so I just subtract what was colored, that's two-thirds, from three-thirds and the answer is one-third. That's the part of the circle that was left uncolored. Look at the circle on page 8 and you'll see that I'm right.

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

If there is a plus sign, you just add the top numbers, if there is a minus sign, you just subtract. But only if the bottom numbers are the same. That's what Ms. Gibbs always says.

I remember wondering what to do if the bottom numbers are different. I now know that it does make it harder, but not too hard. If you stick with me and practice adding and subtracting these fractions you will be able to learn how to do harder fractions and a whole lot more.

Oh, I think I forgot to tell you this. If both the top number and the bottom number are the same, that means the fraction is equal to one. It doesn't matter how big the figure is.

Supposing there is a great big square divided into 121 sections and you colored all the sections. You would have colored the whole square. That's simple, right?

But if I said you colored 121 over 121 of the square and that equals one whole square, you might think that sounds kinda funny. Well it sounded funny to me too at first but that's what it is - just one! It's one whole square.

$$\frac{\mathbf{121}}{\mathbf{121}} = 1$$

I remember Ms. Gibbs had a great big square like that and I thought I would have to color in all the squares, but I didn't. I had to do something much harder than that! Oh boy, I'll tell you about that another time.

Ms. Gibbs always gave me problems to work at home. She asked me to work on my math for at least 15 minutes each evening. That seemed long to me at first but I decided to do what she asked.

So after supper, I cleaned up the kitchen table. Before I sat down to

do my practice problems I looked at the clock on the wall and wrote down the time. At first, I looked back at the clock every minute or so to see how much time was left. But in just a few weeks, when I looked back at the clock for the first time, I found that I was working on my math longer than 15 minutes! That's because I got so interested in what I was doing. I bet you will too.

If you need to draw a figure, don't worry about it being perfect. Just draw it the best you can. A computer made the figures in this book, that's why they're perfect. I put lots of them on my website so you can use those too.

If you have colored pencils, you can color in the sections just like I did. Maybe you can even pretend I'm the "you" in the problem. Or if you want, you can pretend that I am the "I" in the problem and you are the "you."

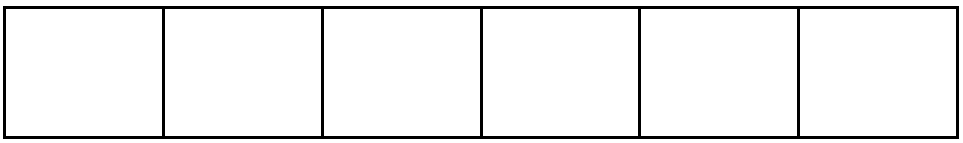
Whatever you decide, just make sure you practice for fifteen minutes a day. I did and now I'm doing real hard math but it doesn't seem so hard at all. In fact it's kinda fun.

On the next page are some of the problems Ms. Gibbs gave me. She asked me to do them at home and to bring them back to her. I put these problems on my website plus I added some more that I made up myself.

You can copy them from this book or print them out from my website (**www.learningwithkayla.org**). If you're not able to print them up at home, ask the librarian at your school or at your local library to help you print them up.

Practice Problems

1. This fraction bar has six sections. I colored in one-sixth of the bar red *(please do this for me).* Now you color three-sixths of the bar any colors you want.



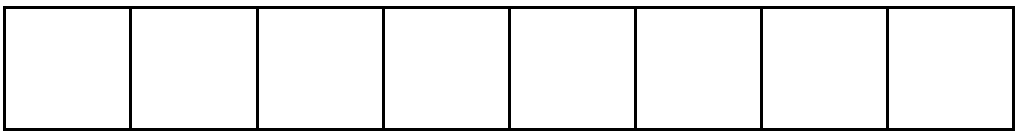
Write an equation showing what fraction of the bar is colored:

_____

Write an equation showing what fraction of the bar is left uncolored:

_____

2. Here's a fraction bar with eight sections. I colored in four sections blue *(please do this for me).* Now you color one section any color you want.



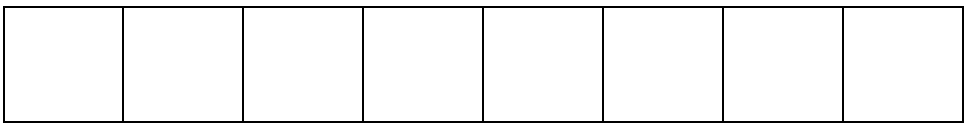
Write an equation showing what fraction of the bar is colored:

_____

Write an equation showing what fraction of the bar is left uncolored:

_____

3. Here's another fraction bar:



I colored in three sections green *(please do this for me)*. You color in four sections any colors you want.

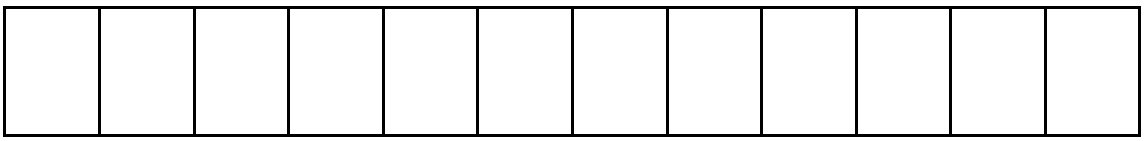
Write an equation showing what fraction of the bar is colored:

_____

Write an equation showing what fraction of the bar is left uncolored:

_____

4. Here is a great big fraction bar:



I colored in two sections purple and my friend Cleveland colored in four sections yellow *(please do this for Cleveland and me)*. Now you color in five sections any colors you want.

Write an equation showing what fraction of the bar is colored:

_____

Write an equation showing what fraction of the bar is left uncolored:

_____

5. Here are twelve problems without figures and without words. If you get stuck, just draw a fraction bar. That's what I did when I got stuck. Watch the signs!

a. $\frac{2}{8} + \frac{3}{8} =$

b. $\frac{5}{8} - \frac{3}{8} =$

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

d. $\frac{7}{12} - \frac{3}{12} =$

e. $\frac{4}{14} + \frac{10}{14} =$

f. $\frac{2}{7} + \frac{4}{7} =$

g. $\frac{5}{5} - \frac{2}{5} =$

h. $\frac{12}{12} - \frac{7}{12} =$

i. $\frac{4}{10} + \frac{5}{10} =$

j. $\frac{9}{12} - \frac{6}{12} =$

k. $\frac{8}{10} - \frac{5}{10} =$

l. $\frac{6}{12} - \frac{2}{12} =$

Answers are on page 36

That's all that I put in this book. But don't worry. I have more on my website. When you have adding and subtracting like fractions down-pat, get my next book. In it, I learned how to multiply fractions. It's easy, especially if the numbers are small. But if they're big ...

Something extra

When I got to middle school, I began to do a lot of writing. I was getting so good at it, that in my junior year of high school I was asked to write for the school newspaper. Imagine that!

The reason why I'm telling you this now is because I've learned a lot of neat words while writing for the newspaper. I put one I thought you would like into this book.

The big word is right on page 4. It's "mortified." Did you guess its meaning? It means ashamed or embarrassed.

You'll never guess where the word comes from. It comes from the word "death". Isn't that creepy? When I was really embarrassed, I used to say, "I could have died."

Actually, that's what I did say to myself when Ms. Gibbs shook my hand that first day but I decided to write "I was mortified." I think it sounds cooler, don't you?

And I thought it would be cool to put that nice word in this book. Now that you know what it means you might want to use it too. You might already know it, but I bet a lot of kids don't.

Next time, I might have another neat word for you or maybe something else. Oh, and I'll be sure to have a lot more math too. See you then.

Answers

1. $\frac{1}{6} + \frac{3}{6} = \frac{4}{6}$, $\frac{6}{6} - \frac{4}{6} = \frac{2}{6}$

2. $\frac{4}{8} + \frac{1}{8} = \frac{5}{8}$, $\frac{8}{8} - \frac{5}{8} = \frac{3}{8}$

3. $\frac{3}{8} + \frac{4}{8} = \frac{7}{8}$, $\frac{8}{8} - \frac{7}{8} = \frac{1}{8}$

4. $\frac{2}{12} + \frac{4}{12} + \frac{5}{12} = \frac{11}{12}$, $\frac{12}{12} - \frac{11}{12} = \frac{1}{12}$

5a. $\frac{5}{8}$ 5b. $\frac{2}{8}$ 5c. $\frac{3}{8}$ 5d. $\frac{4}{12}$ 5e. $\frac{14}{14} = 1$ 5f. $\frac{6}{7}$

5g. $\frac{3}{5}$ 5h. $\frac{5}{12}$ 5i. $\frac{9}{10}$ 5j. $\frac{3}{12}$ 5k. $\frac{3}{10}$ 5l. $\frac{4}{12}$

Did you notice that 5b is the inverse of 5a? Inverses "undo" each other. That sounds funny, so let me explain: In 5a, you added two-eighths to three-eighths to get five-eighths. In 5b, you took the answer to 5a (five-eighths) and subtracted one of the things you added (three-eighths) to get the *other* thing you added (two-eighths). So we can say that 5b "undid" 5a. That's pretty cool, isn't it? I've got a lot more cool stuff in my other books. Oh, in my next book, you'll meet my friend, Cleveland. He's cool, too!

About Tutoring Math

There are lots of kids who need someone to help them with their math, but there are simply not enough math tutors. You could be a math tutor even if you don't think you're very good at math. In fact, you might make a better tutor than someone who is a math whiz because you have a greater understanding of what makes math so hard for some kids.

If you're a kid learning the math in the Kayla books, think of sharing what you've learned with other kids. Sharing is what tutoring is all about. If you're an adult, think of volunteering for an hour or two a week to help someone better understand math. This could be done informally in your own family and neighborhood or more formally at a local school. Just think, you could be another Ms. Gibbs! Tutoring math is a good way to make the world a better place.