

Life of Fred Apples

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A Note Before We Begin

How quickly the days of childhood pass. One moment, they are a little bundle on the bed.



The next moment, they have discovered the delights of triple integrals (as we find the weight of one of Aunt Dorothenia's raisin-and-apple muffins on page 310 in *Life of Fred: Calculus*.)

Fred (and I) would like to be a part of that journey with you. And we would like to do our best to make those years as joyful as they can be. So often mathematics seems to be the most terrifying and tear-filled subject in the curriculum.

It does not have to be.

One mom emailed me that she had to set a time limit on how long her child was spending with Fred. Her daughter would start the day with Fred's adventures and not want to study the other subjects.



Math need not be a terrifying experience.

THE WAY MATH IS USUALLY TAUGHT

Pages and pages of worksheets.
Circle the three alligators. Underline the two hippos.
Drill-and-kill.
No motivation.

When I taught at the high school and college levels, the most frequent question that other math teachers and I got was, “Why are we studying this stuff?”

The traditional approach in, say, algebra is to show the students how to factor $x^2 + 7x + 12$ * into $(x + 3)(x + 4)$. Then they get 40 problems to do for homework.

If they asked, “Why are we learning to factor $x^2 + 7x + 12$?” the usual answer was something like, “So that you can simplify fractions

like $\frac{x^2 + 7x + 12}{x + 4}$ ** which is today’s lesson.”

. . . and 40 more problems to do for homework.

- | |
|----------------------|
| 1. $x^2 + 9x + 14$ |
| 2. $x^2 + 6x + 5$ |
| 3. $x^2 + 5x + 6$ |
| 4. $x^2 + 8x + 7$ |
| 5. $x^2 + 20x + 100$ |
| 6. $x^2 + 14x + 49$ |
| 7. $x^2 + 11x + 18$ |
| 8. $x^2 + 9x + 18$ |
| 9. $x^2 + 19x + 18$ |
| 10. $x^2 + 9x + 20$ |
| 11. $x^2 + 10x + 21$ |
| 12. etc. |
| 13. etc. |
| 14. etc. |

the traditional approach

Few students have the courage to ask, “And why are we learning how to simplify fractions?” They just bow their heads and suffer through it.

Is there any wonder that kids don’t seem to remember the math that they “learned”?

* To factor $x^2 + 7x + 12$, you find two numbers that add to 7 and that multiply to 12. That gives you the answer of $(x + 3)(x + 4)$.

** $\frac{x^2 + 7x + 12}{x + 4} = \frac{(x + 3)(x + 4)}{x + 4} = \frac{(x + 3)\cancel{(x + 4)}}{\cancel{x + 4}} = x + 3$

In contrast, in the *Life of Fred* series, every piece of mathematics first happens in Fred's everyday life, he needs it, then we do it.

Everything is motivated—everything from introducing the number zero in this book (as the number of elephants that Fred owns) to hyperbolic trigonometric functions, where we find three(!) uses for them on page 250 of *Life of Fred: Calculus* when Fred and the 8'2" lion enter an all-you-can-eat buffet.

Mary Poppins said that a spoonful of sugar isn't a bad thing. We use lots of sugar.

HOW THIS BOOK IS ORGANIZED

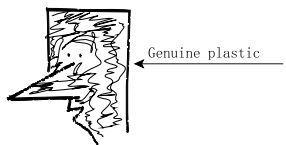
Each chapter is about six pages. At the end of each chapter is a Your Turn to Play.

Have a paper and pencil handy before you sit down to read.

Each Your Turn to Play consists of about three or four questions. Have your child write out the answers—not just orally answer them.

After all the questions are answered, then take a peek at my answers that are given on the next page. At this point your child has earned the right to go on to the next chapter.

Don't just allow your child to read the questions and look at the answers. Your child won't learn as much taking that shortcut. Put something over the answers if there is a temptation to cheat. Or use clothes pins to prevent premature turning of the page. One reader suggested that I sell plastic Fred Heads to cover the answers.




CALCULATORS?

Not now. There will be plenty of time later (when you hit Pre-Algebra). Right now in arithmetic, our job is to learn the addition and multiplication facts by heart.

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Chapter One

Early in the Morning

Fred lay in his sleeping bag. It was early in the morning, and it was still dark outside. Fred took his flashlight and shined it on the clock on the wall.



It was five o'clock. If this were summertime, it would be getting light by now. But it was February. It would be dark for another couple of hours.

Fred liked to go jogging in the morning, but he knew that if he jogged in the dark he would trip and fall a lot. He was going to wait two more hours until it was seven o'clock before he went out running.

Fred did not sleep in a regular bed like most five-year-olds. He did not own a bed. He slept in a sleeping bag.



Kingie

Five years ago when he came to KITTENS University, he owned nothing except his doll, Kingie.

Fred liked Kingie to sleep right next to him.

KITTENS University gave Fred a room on the third floor of the math building to use as his office. He made it into his home.

The only thing in that room was a big old desk. Fred used to sleep on the top of the desk. When the janitor found out what Fred was doing, the janitor gave him a little sleeping bag. It was only three feet long, but that was just the right size for Fred. He put the sleeping bag under his desk. That made it a safe little cave for Kingie and him.



Fred liked to talk to Kingie. Kingie didn't say very much, but he was a very good listener. Years ago Fred got Kingie as a free toy at the King of French Fries restaurant. When Kingie was new, Fred could squeeze his tummy and he would sing a little song about french fries:

♪♪ Butter fries are butter. ♪♪

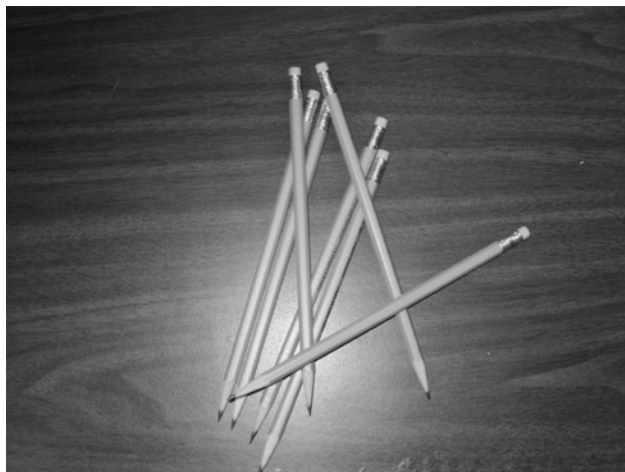
The song didn't make much sense.

About two weeks after Fred got Kingie, his battery died, and he stopped singing. Fred put a new battery in Kingie, but Kingie didn't sing the Butter fries song anymore. But Kingie still liked to listen to whatever Fred had to say.

Fred told Kingie, "Let's wait two hours before we get up. It's five o'clock now, and if we wait until seven o'clock it will be light outside."

Kingie didn't say anything, but Fred knew what Kingie was thinking: $5 + 2 = 7$.

Fred opened a desk drawer and took out some pencils.



7 pencils

Kingie counted them. There were seven pencils. Fred had a very smart doll.

Then Fred straightened out the pencils.



$$5 + 2 \text{ is } 7$$

He asked Kingie, “Now how many pencils are there?” Fred knew that Kingie was giggling since that was such a silly question. If you start with seven pencils and you move them around you will still have seven pencils. Even a doll knows that is true.



$$4 + 3 \text{ is } 7$$



$6 + 1$ is 7

Please take out a sheet of paper and write your answers. After you are all done, you can check your work on the next page.

Your Turn to Play

1. Sometimes, we write “ $6 + 1$ is 7 .” Sometimes, we use an equals sign and write “ $6 + 1 = 7$.”

How would you write “ $4 + 3$ is 7 ” using an equals sign?

2. We know that 4 pencils plus 3 pencils equals 7 pencils.

What does 4 trees plus 3 trees equal?

3. We know that $5 + 2 = 7$.

What does $2 + 5$ equal?

..... ANSWERS

1. $4 + 3 = 7$
2. 4 trees plus 3 trees equals 7 trees.
3. $2 + 5 = 7$

If $5 + 2 = 7$ then $2 + 5 = 7$.

If $8 + 5 = 13$ then $5 + 8 = 13$.

If $10 + 20 = 30$ then $20 + 10 = 30$.

$x + y$ always gives the same answer as $y + x$
where x and y can be any numbers.

Fred asked one of the monkeys, “What do you do all day long? I know you don’t stand still like the statues.”



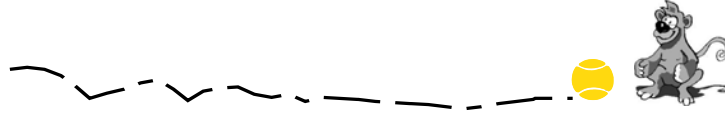
The monkey said, “We just monkey around.

3 We can’t read, so we don’t get smart.

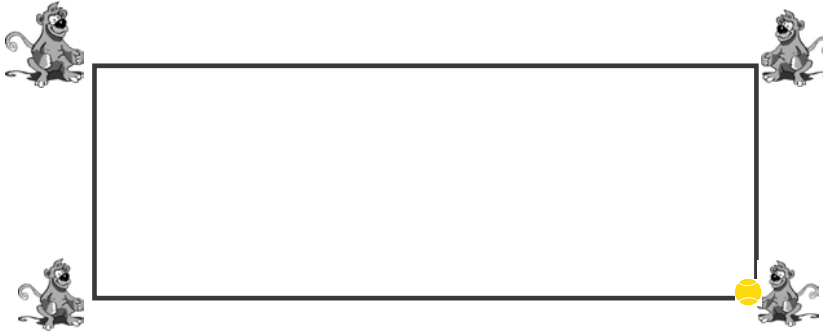
3 We don’t work, so we don’t make money.

3 We just watch a lot of television.”

Fred took a tennis ball out of his pocket and rolled it toward one of the monkeys.

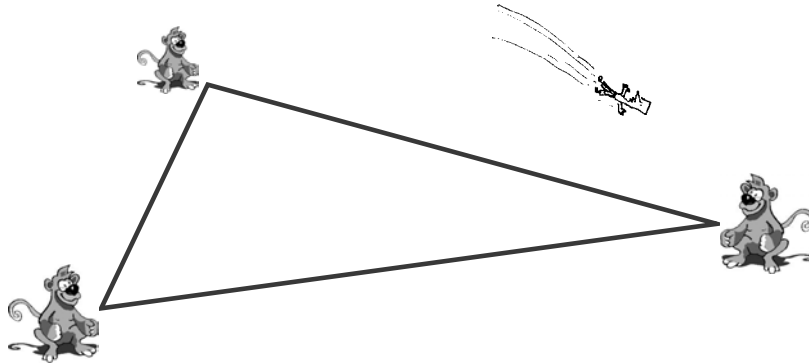


Four of the monkeys made a rectangle and started playing catch with the ball.



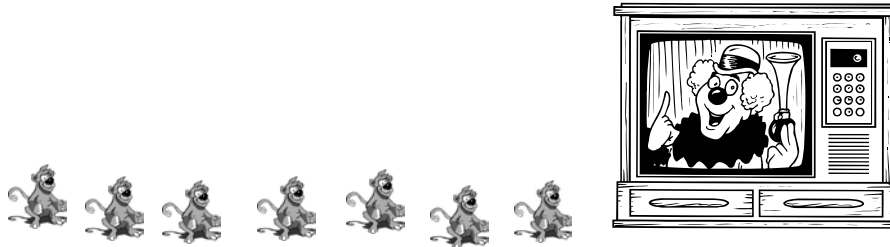
There were seven monkeys. Four of them were standing at the corners of a rectangle playing catch with Fred’s ball. The other three monkeys couldn’t make a rectangle.

So they made a triangle. Since they didn't have a ball to play with, they used Fred.



At first, Fred was frightened, but after a while it became fun. He was happy they were playing catch and not football with him!

After a while, the monkeys got tired and went back to watching television.

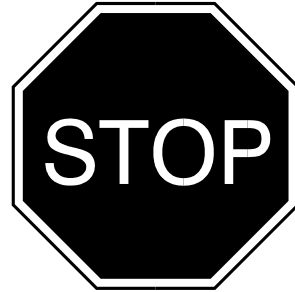


4:00

Fred didn't want to spend his time watching some clown on television. It was getting late and he needed to get home to take care of his doll, Kingie.

Your Turn to Play

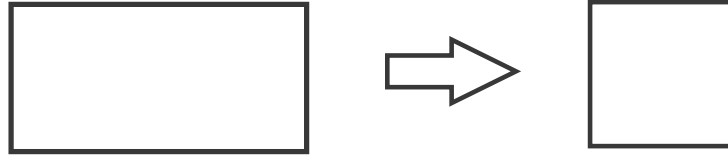
1. On a piece of paper, draw a rectangle where all four sides have the same length. What do you call this special rectangle?
2. Draw a figure that has four sides that is not a rectangle.
3. Draw a figure that has five sides.
4. How many sides does a stop sign have?



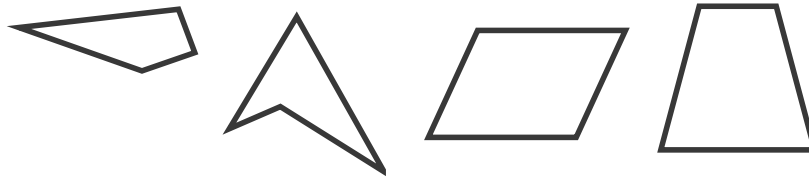
5. $5 + 2 = ?$
6. If tomorrow is Tuesday, what day is today?
7. If an hour from now it will be five o'clock, what time is it now?
8. If a month from now it will be March, what month is it now?

..... ANSWERS

1. If you take a rectangle and make all four sides equal, you get a square.



2. There are lots of four-sided figures that are not rectangles.



3. You could make all five sides have the same length, or you could make all five sides have different lengths.



4. Stop signs have eight sides.

5. $5 + 2 = 7$

6. The day before Tuesday is Monday.

7. The hour before five o'clock is four o'clock.

8. The month before March is February.

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