# Right-Brained Multiplication & Division

## a Forget Memorization book

*Effortless learning through images, stories, hands-on activities, and patterns*

by Sarah Major

www.child1st.com

Right-Brained Multiplication & Division



ISBN: 978-1-936981-19-9

Printed in the United States of America



Child1st Publications LLC

800-881-0912

info@child1st.com

For other teaching and learning resources designed for visual, tactile, kinesthetic and other right-brained learners, visit www.child1st.com.

Other books and materials by this author:

*Alphabet Tales*
*The Illustrated Book of Sounds & Their Spelling Patterns*
The Easy-for-Me™ Books, sets A and B
The Easy-for-Me™ Reading Program
Kid-Friendly Math Series
*Writing the Visual, Kinesthetic and Auditory Alphabet*
SnapWords® sight word cards and SnapLetters™ stylized alphabet
*I Can Sing from 1 to 10*
*SnapWords® Spelling Dictionary*

# ABOUT THIS BOOK

This book is for children who are strongly visual, who learn all at once through pictures, are drawn to patterns, rely on body motions, and who need to understand the process behind each math problem they solve. Child1st teaching and learning resources all follow the principle of conveying learning pieces using a variety of right-brain-friendly elements. We take learning tidbits that utilize symbols (numbers and letters) and abstractions, which are left-brained, and embed them in right-brained elements to beautifully integrate the left and right hemispheres in the brain.

### RIGHT-BRAINED ELEMENTS:

1- We embed symbols in ***VISUALS*** so that the child can take a quick look, absorb the learning piece, and store it as an image to be retrieved intact later.

2- We use ***PERSONIFICATION*** which is a powerful element in teaching and learning. The use of personification makes for rapid learning because the very look and personality of the character conveys the substance of the learning. For example, Zeroman with his circular body, bouffant hair style, leer, and magic wand will be an unforgettable visual reminder that when a child multiplies or divides by zero, the magic wand will slash the air and the number will be transformed into a zero. POOSH! Instant learning!

3- We rely on ***PATTERN DISCOVERY*** as a way of making numbers come alive and as a means of conveying the amazing relationships between numbers. What results is number sense. Because the brain is a pattern seeking organ, it is drawn to material that follows patterns. It is my desire that through this teaching resource, many children who are overwhelmed or daunted by math might come to truly be fascinated by it instead.

4- We use ***STORY*** to contain the meaning of what we are teaching in math. Stories, like visuals, make learning unforgettable. They explain the “why” behind math concepts and tie everything together, creating a vehicle for meaning and for recall.

5- We use ***BODY MOTION—***both gesture and whole body movement. Some of the movement includes clapping and chanting, while some is acting out the story of the individual table. Again, body movement is a powerful agent for learning and remembering. For many people, body motion makes recall effortless if the learning piece is directly tied to a unique motion.

6- We employ ***VISUALIZATION—***a powerful tool for right-brain-dominant learners. If they are given time to transfer the image on the paper in front of them to their brains (prompt them to close their eyes and SEE it in their mind’s eye), they will be able to retrieve that image later. If the image contains learning concepts, this is how they will remember what you want them to learn. So in this book, each time a visual is introduced, prompt the student(s) to “see” the image in their mind, eyes closed.

# Multiplication and Division TEACHING CARDS

We’ve created full color teaching cards for classroom display to accompany this book. The cards each have a character such as Zeroman or a visual of a problem such as 5 x 9 = 45. While all the visuals are included in this book, if you desire to display the stylized facts on a wall, bulletin board or in a pocket chart, visit www.child1st.com and search for Multiplication and Division Teaching Cards. Use code MDCARDS for 10% off your order. Color, 8.5” x 5.5”.

This chart shows the multiplication and division facts your child(ren) need to learn. The brown bar at the top shows the order in which we will learn the tables. As the child learns one set of facts, she should color in those boxes so she can chart her progress. 10s are done for you.

Because many facts overlap (such as 2 x 5 and 5 x 2) we have not included the bottom half of the chart. Your child will be excited to see his progress!

**Multiplication & Division Facts** Name_____

| Start date: | | #3 | #7 | #8 | #5 | #9 | #10 | #11 | #6 | #1 | #2 | #4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1x | 2x | 3x | 4x | 5x | 6x | 7x | 8x | 9x | 10x | 11x | 12x |
| 1= | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| 2= | | 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 | 20 | 22 | 24 |
| 3= | | | 9 | 12 | 15 | 18 | 21 | 24 | 27 | 30 | 33 | 36 |
| 4= | | | | 16 | 20 | 24 | 28 | 32 | 36 | 40 | 44 | 48 |
| 5= | | | | | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 |
| 6= | | | | | | 36 | 42 | 48 | 54 | 60 | 66 | 72 |
| 7= | | | | | | | 49 | 56 | 63 | 70 | 77 | 84 |
| 8= | | | | | | | | 64 | 72 | 80 | 88 | 96 |
| 9= | | | | | | | | | 81 | 90 | 99 | 108 |
| 10= | | | | | | | | | | 100 | 110 | 120 |
| 11= | | | | | | | | | | | 121 | 132 |
| 12= | | | | | | | | | | | | 144 |

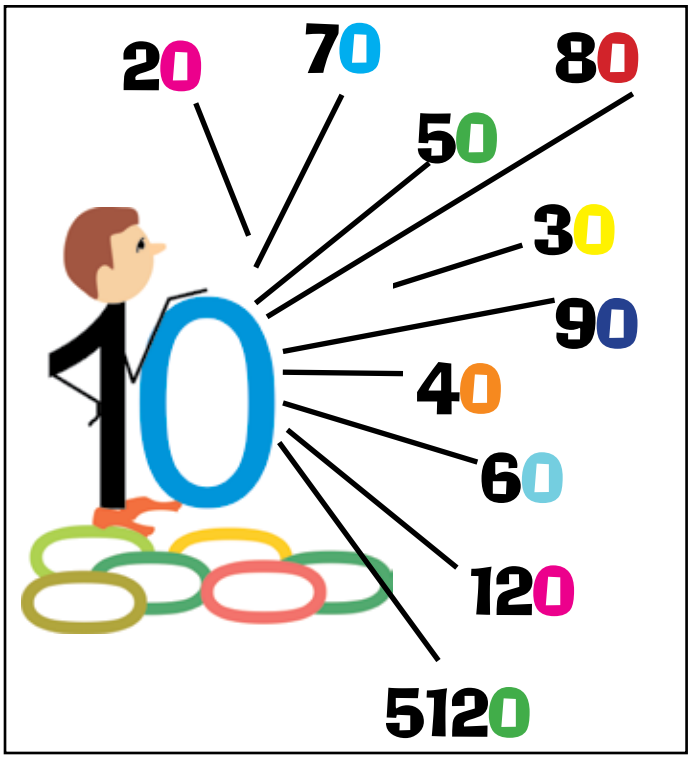
## DAILY PROCEDURE:

- Copy necessary practice sheets.
- Display appropriate teaching card if you are teaching more than one child (see info on the bottom of page 3).
- Share with the child(ren) the story that explains the chapter's character. ***Stories are in italics.*** *Story problems are blue.*
- Emphasize the visuals as a means of remembering how to solve each times table.
- Allow for plenty of practice. If you need more problem sheets than what is provided in Appendix A, any multiplication and division practice sheets will work to supply ample practice. Be sure to do the hands-on activities.
- Teach multiplication and division together as mirror processes—trios of numbers allow for both functions. For example, 3 x 5 = 15, 5 x 3 = 15, 15 ÷ 3 = 5, and 15 ÷ 5 = 3. Make sure the child(ren) understand that the two small numbers in each trio can switch places with each other, but the large number in each trio stays put. You could not, for example, say 15 ÷ 3 = 5 and 3 ÷ 15 = 5. The 15 stays put and the small numbers, 3 and 5, can switch places.

# TABLE Of CONTENTS & LEARNING FOCUS FOR EACH CHAPTER

*Each chapter is different from the others. Below each chapter title, the focus provided will be the pathway to the brain or the primary elements that will help the student(s) learn and recall the multiplication and division facts. Emphasize these as you go through the lesson. After each lesson, take time to ask the student(s) which element was most effective in helping them learn and remember their facts.*

# MR. 10 TOSSES RINGS:




*Mr. 10 is a guy who loves colored rings. He has collected rings in many colors. He loves to share, so whenever anyone comes by, he quickly tosses them a ring. Look what happened when these numbers came into his room!*

When you multiply by 10, you can be Mr. 10 tossing brightly colored rings to any number you are multiplying by.

10 x 2 = 2 and a ring, or 20

10 x 4 = 4 and a ring, or 40

10 x 9 = 9 and a ring, or 90

10 x 5 = 5 and a ring, or 50

10 x 512 = 512 and a ring, or 5120

Check out the chart for 10x and look for patterns. What do you see?

**Chart for 10x**

| | | | | |
|---|---|---|---|---|
| 10 x 1 = 10 | 10 x 2 = 20 | 10 x 3 = 30 | 10 x 4 = 40 | 10 x 5 = 50 |
| 10 x 6 = 60 | 10 x 7 = 70 | 10 x 8 = 80 | 10 x 9 = 90 | 10 x 10 = 100 |
| 10 x 11 = 110 | 10 x 12 = 120 | | | |

**HANDS-ON:**

Take a piece of scratch paper. Write 10 numbers on the paper—any numbers you want. Now exchange papers with a friend. Each of you will multiply your ten numbers by 10. Talk about your answers when you are finished. Wasn't that easy?

**PRACTICE PROBLEMS:**

Use sheet 1.3 from page 93.

**RULE: 10 x any number = that number with a 0 after it**

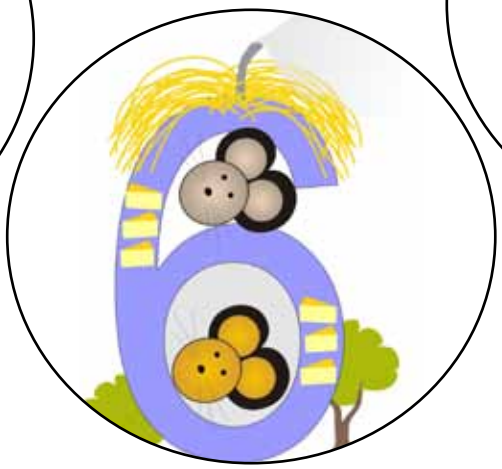
---

Division with 10s is really fun! Start with a big number that ends in a zero, say 510; if you divide it by 10, you just take the zero off the end! When you are practicing, just put your thumb over the zero and you will see the answer.

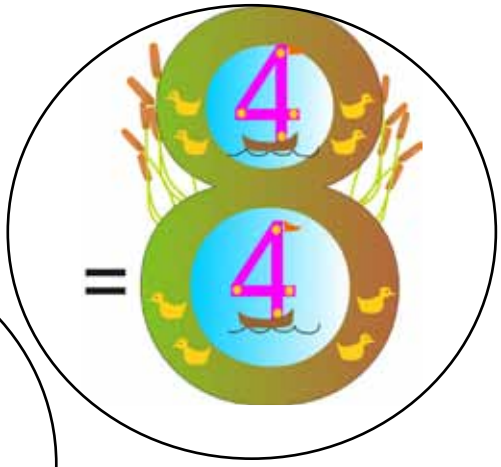
40 ÷ 10 = 4  230 ÷ 10 = 23  150 ÷ 10 = 15

*When Miss 2 got home, she fell asleep in her chair and dreamed about all the pairs she'd found on her walk.*

**2 x 2 = 4 on the shore**



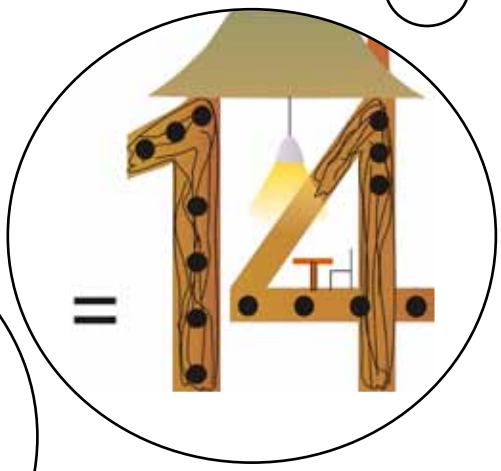
**2 x 3 = 6 gather sticks**



**2 x 4 = 8 by the lake**

**2 x 5 = 10 see the men**

**2 x 6 = 12 on the shelves**



**2 x 7 = 14 the house is clean**

**2 x 8 = 16 they look mean**

**2 x 9 = 18 what a scene**

**PRACTICE PROBLEMS:**
Use sheets 3.1 and 3.2 from page 101.

---

# Tactile and kinesthetic activities for learning 2s

## IN THE CLASSROOM:

Choose a child to be Miss 2. Divide the rest of the class into the various groups of characters Miss 2 encountered on her walk. Each of the groups can prepare their props if desired (boat, house, lake, spiderweb, etc). Have Miss 2 walk around the classroom saying what she sees at each station.

Alternately, the children might enjoy each making a booklet in which they draw and illustrate the 2s facts. They can make up their own rhythmical wording for the problems (Ex: 2 x 4= 8 by the lake). Encourage them to share with the class their own best way of remembering, whether it be movement, drawings, jingles they say, or practice verbally answering from flashcards.

## AT HOME:

Your child can make a book of the facts and write a simple story line for it. Or you could give her big cut-outs of the numbers, have her glue them into place, one problem per page, and have her embellish the numbers to show the scenes in the story.

Your child might enjoy making up new rhymes for each problem, or he might love to build each scene out of playdough.

---

**STORY PROBLEMS:**
*The goal behind including story problems is to build fluency with math procedures; after all, the point of learning math facts is to be able to use them in real life. As you read the problems to the student(s), have them draw stick figures and coins to represent what you say.*

1- "How would you solve this? Multiplication or division? Ben and Jane saved their allowance for the whole summer. By September, they had $24.00 all together. How much money did each child have?" (For this problem, have them draw stick figures, then draw a pile of money representing $24. As you ask the question, have them study what they drew. Answer: Division.)

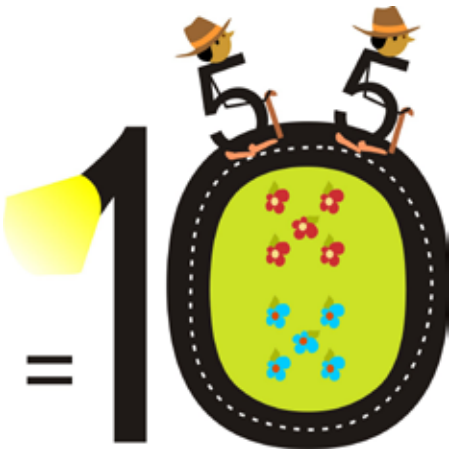
2- "How would you solve this? Multiplication or division? Jack washed cars on Saturday and earned $2.00 for each car he washed. Altogether, he washed 8 cars. How much money did he earn?" (For this problem, they could either draw 8 cars or use circles to represent cars. If they put $2 inside each car, they will study what they drew as they determine to multiply to solve this problem.)

---

**PRACTICE PROBLEMS:**
Use sheet 3.3 from page 102.

# 5 HIGH FIVES

You can learn a ton about 5s from your own two hands. If you do high fives with a friend, both your fives together make a ten. Your hand by itself, of course, is just a five.



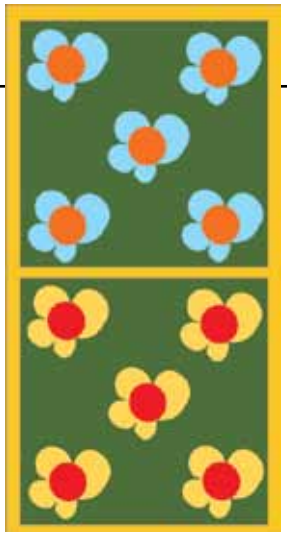

5s are cool because we use them a lot for counting money, for telling time, and for all sorts of other really useful activities.

*Remember from Chapter 3 that two Mr. 5s went walking on the track around the park. In the park were two patches of flowers with five flowers in each patch.*

**Chart for 5x**

| | | | | |
|---|---|---|---|---|
| 5 x 1 = 5 | 5 x 2 = 10 | 5 x 3 = 15 | 5 x 4 = 20 | 5 x 5 = 25 |
| 5 x 6 = 30 | 5 x 7 = 35 | 5 x 8 = 40 | 5 x 9 = 45 | 5 x 10 = 50 |
| 5 x 11 = 55 | 5 x 12 = 60 | | | |

Notice in this chart that you already know five of the boxes. That leaves us with only 7 combinations to learn! Study the chart for a bit and see what patterns you can discover in the array of numbers.



In this High Fives chapter, we will use dominoes that look a lot like the flower beds in the park.

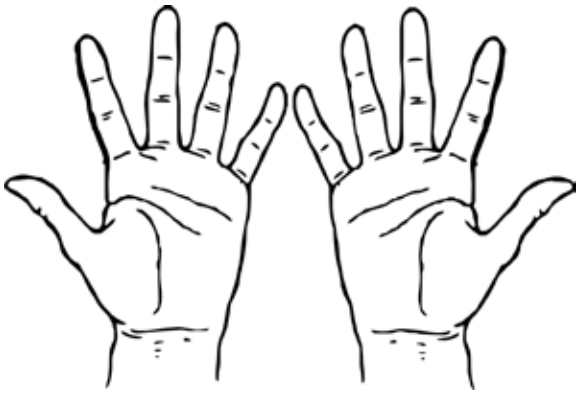
The square is a 5, while the rectangle is a 10:

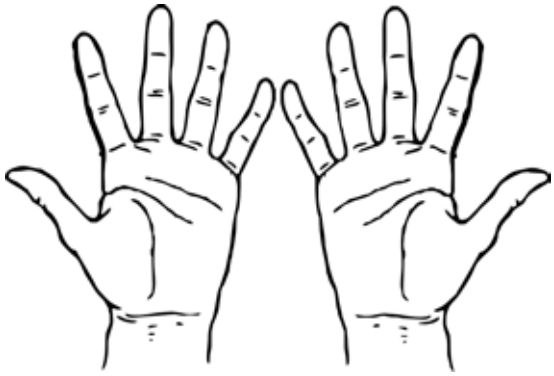
Whenever you see the square, you can think about 1 x 5. Whenever you see the rectangle, you can think about two 5s, or a 10 (2 x 5 = 10).

Use body motions for 5s and 10s to deepen learning.

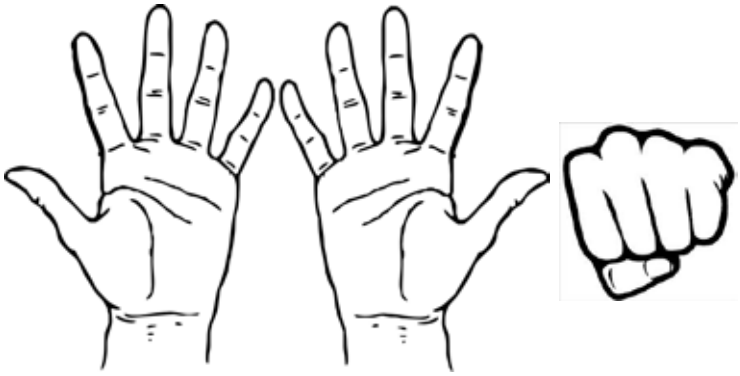
**Body motions for 5s and 10s:**

claps for 10s; fist for 5s





Body motion for even numbers—clap the # of 10s.



Body motion for odds—claps for 10s and a fist for the final 5.

## Tactile and kinesthetic activities for learning 5s

This activity will involve clapping and chanting. Child(ren) will say their 5x facts, clapping out the answer.

Say, "1 times 5 is 5." Make a fist as you say 5.
"2 x 5 = 10" Clap once as you say 10.
"3 x 5 = 15" Say "fif- (clap) teen (fist)."
"4 x 5 = 20" Say "twen- (slap legs) ty (clap)."
"5 x 5 = 25" Say "twen- (slap legs) ty (clap) five (fist)."
"6 x 5 = 30" Say "thir- (slap legs) (clap) ty (clap)."
"7 x 5 = 35" Say "thir- (slap legs) (clap) ty (clap) five (fist)."
"8 x 5 = 40" Say "for- (slap legs) (clap) ty (slap legs) (clap)."
"9 x 5 = 45" Say "for- (slap legs) (clap) ty (slap legs) (clap)" five (fist)."
"10 x 5 = 50" Say "fif- (slap legs) (clap) (clap) ty (slap legs) (clap)."
"11 x 5 = 55" Say "fif- (slap legs) (clap) (clap) ty (slap legs) (clap) five (fist)."
"12 x 5 = 60" Say "six- (slap legs) (clap) (clap) ty (slap legs) (clap) (clap)."

---

**STORY PROBLEMS:**

1- "How would you solve this? Multiplication or division? The garden club decided they needed to plant new flower beds in the park. 6 people showed up on Saturday to make the flower beds. By the end of the day, each person had planted 5 beds. How many new beds were made?" (Multiplication)

2- "How would you solve this? Multiplication or division? During May, the garden club made 45 flower beds. If each person made 5 beds, how many people worked on the flower beds?" (Division)

---

**PRACTICE PROBLEMS:**

Use sheet 5.3 from page 106.

# 10 SEVENS & THE HELIUM BALLOON FAIR

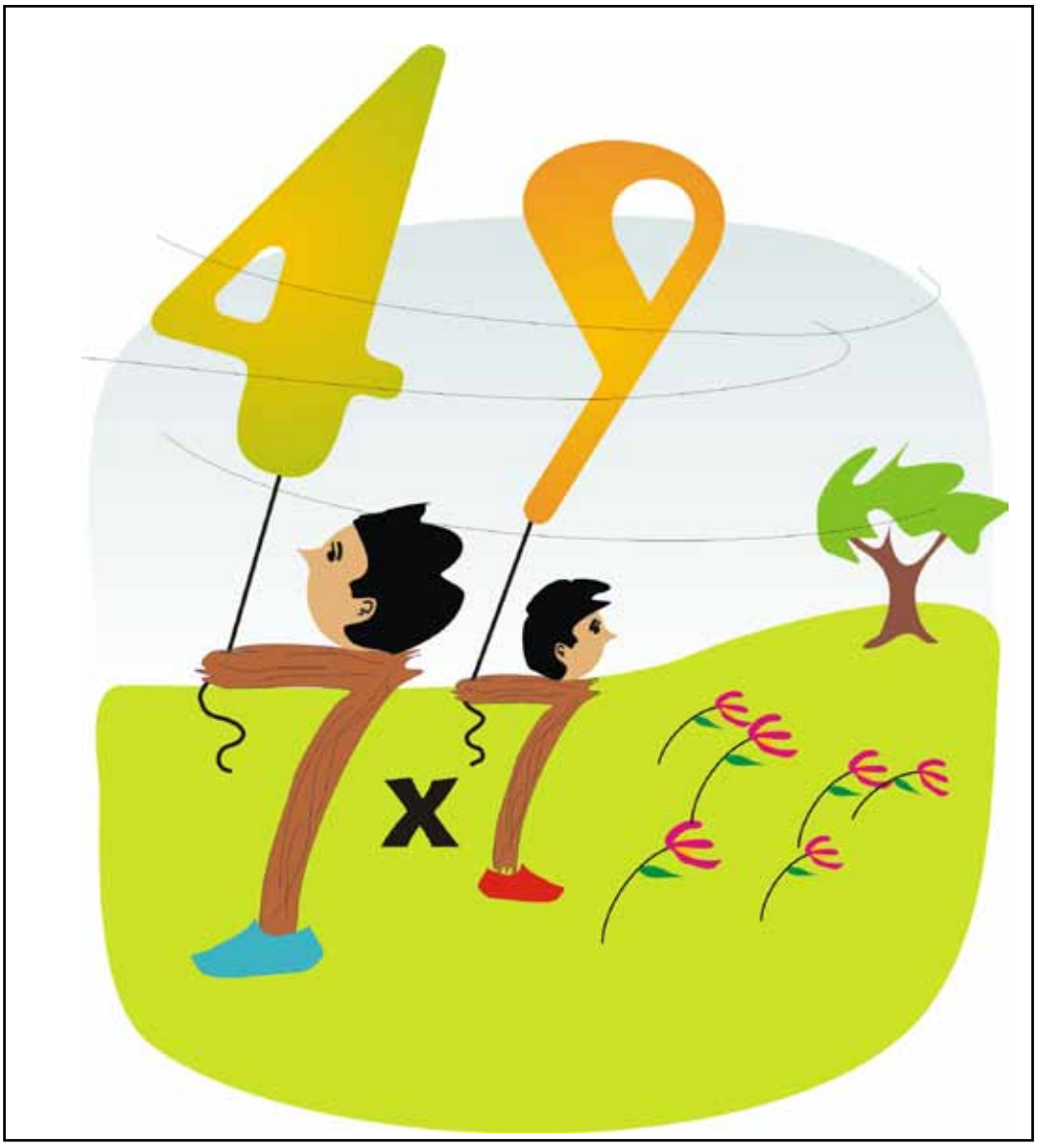
*Summer had come with its warm, windy days that made everyone want to be outside enjoying the sun after a long winter. The Sevens decided it would be a super idea to have a balloon fair. What is a balloon fair, you ask? I asked the Sevens the same thing, and frankly I don't think they knew themselves. I think their basic idea was to invite a lot of people to the fairgrounds and then show off a lot of unusual helium balloons and offer them for sale.*

Before we head out to the fairgrounds, let's look at the 7s table—I promise it won't take long!

**Chart for 7x**

| | | | | |
|---|---|---|---|---|
| 7 x 1 = 7 | 7 x 2 = 14 | 7 x 3 = 21 | 7 x 4 = 28 | 7 x 5 = 35 |
| 7 x 6 = 42 | 7 x 7 = 49 | 7 x 8 = 56 | 7 x 9 = 63 | 7 x 10 = 70 |
| 7 x 11 = 77 | 7 x 12 = 84 | | | |

Wow! We only have two problems left to look at. Pay close attention to the pictures for these problems.




*So off to the fairgrounds we go. Stay with me; this is going to be a quick trip!*

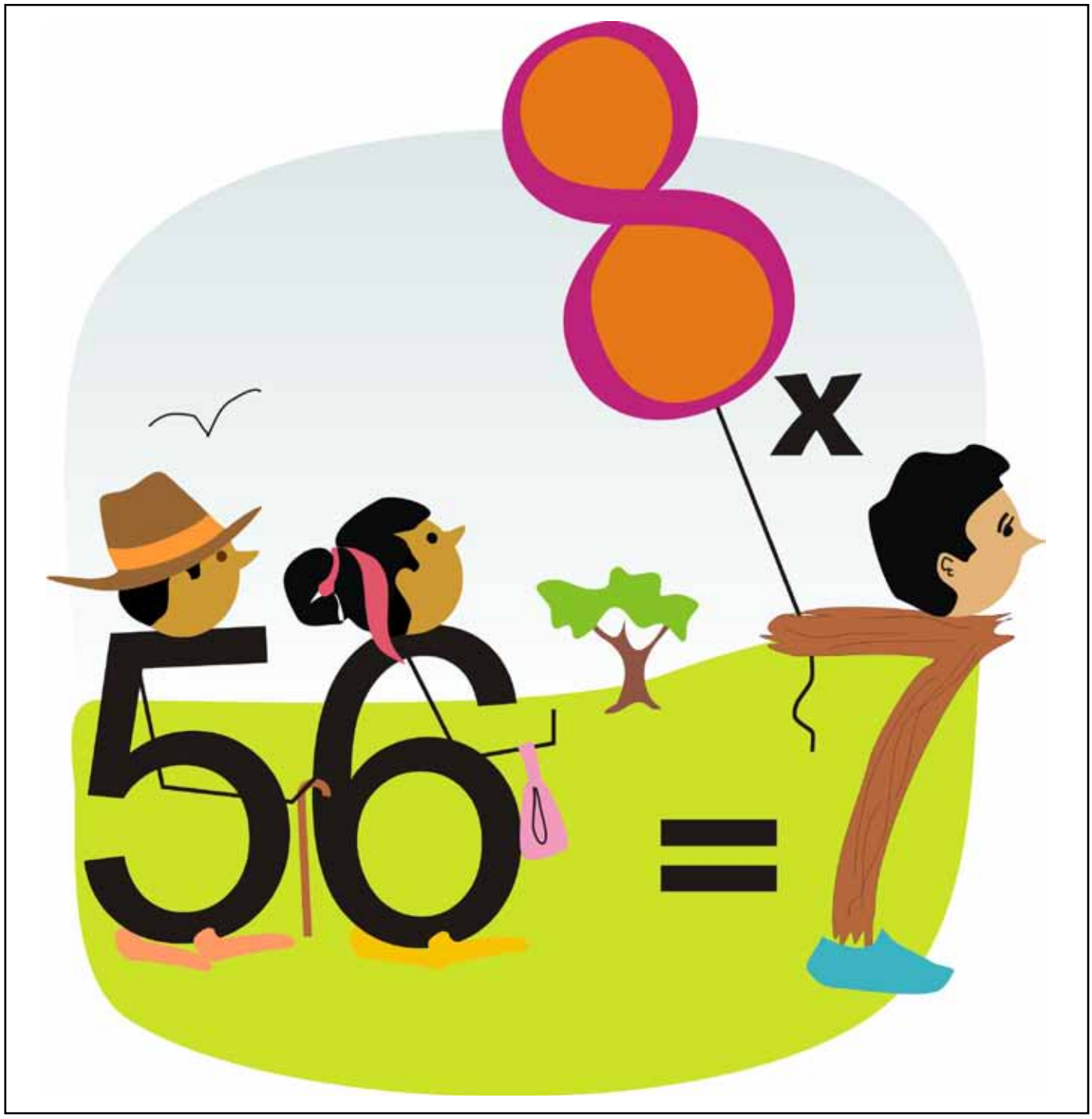
*At the field, sure enough, we find the Sevens—two of them. But no one has shown up, and we can see why! The wind is blowing up such a gale!*

*We catch a quick look at the Sevens' balloons—they sure are cool! One is shaped like a puffy 4 and the other like a puffy 9. Together they make a puffy 49. But take a look for yourself. Can't you just feel the wind blowing?*

*We don't stay at the fairgrounds very long.*

*We (that's Mr. 5 and I) do come back the next day. You can plainly see the wind has died down. Mr. Seven's hair is all coifed and neat instead of blowing straight back from his face. WOW. We really admire the lovely, brilliant 8-shaped balloon he's got today.*

*I open my pink purse and buy two matching 8 balloons. One is blown up but the other one isn't.*
*We look rather nice in this portrait don't we? It will remind us that 56 = 7 x 8. (Notice it is like counting up: 5, 6, 7, 8. So when you see 56 ÷ 7 you will remember the 8 balloon. For 56 ÷ 8 you will remember Mr. 7.)*




**PRACTICE PROBLEMS:**
Use sheets 10.1–10.3 from pages 115–116.
For follow-up, ask the child(ren) if they would like to draw their own pictures for these two problems.

# 1.3 PRACTICE PROBLEMS

10 x 6 = _____ 5 x 10 = _____ 10 x 3 = _____

13 x 10 = _____ 10 x 2 = _____ 9 x 10 = _____

10 x 125 = _____ 125 x 10 = _____ 10 x 4 = _____

7 x 10 = _____ 18 x 10 = _____ 10 x 8 = _____

# 1.4 PRACTICE PROBLEMS

20 ÷ 10 = _____ 420 ÷ 10 = _____ 50 ÷ 10 = _____

390 ÷ 10 = _____ 70 ÷ 10 = _____ 630 ÷ 10 = _____

80 ÷ 10 = _____ 940 ÷ 10 = _____ 30 ÷ 10 = _____

110 ÷ 10 = _____ 350 ÷ 10 = _____ 60 ÷ 10 = _____

# 6.3 PRACTICE PROBLEMS

| | | |
|---|---|---|
| 2 x 9 = _____ | 8 x 9 = _____ | 3 x 9 = _____ |
| 72 ÷ 9 = _____ | 45 ÷ 9 = _____ | 36 ÷ 9 = _____ |
| 5 x 9 = _____ | 7 x 9 = _____ | 4 x 9 = _____ |
| 90 ÷ 9 = _____ | 18 ÷ 9 = _____ | 27 ÷ 9 = _____ |
| 6 x 9 = _____ | 9 x 9 = _____ | 1 x 9 = _____ |
| 54 ÷ 9 = _____ | 108 ÷ 9 = _____ | 81 ÷ 9 = _____ |
| 9 x 10 = _____ | 11 x 9 = _____ | 9 x 12 = _____ |
| 63 ÷ 9 = _____ | 9 ÷ 9 = _____ | 99 ÷ 9 = _____ |

# APPENDIX B

## PRACTICE PROBLEM ANSWER KEY