Lakeshore®

OPERATIONS & ALGEBRAIC THINKING
ELEMENTARY FOLDER GAMES

HH423

Targets standards in these areas:

- **Operations & Algebraic Thinking**
- **Number & Operations in Base Ten**
- **Mathematical Practice**

For full description, see page 2.

What's Included

- 10 activity folders
- 10 storage pouches with manipulatives
- 10 answer cards
- Flip-top storage box
- Reproducible assessment (on page 3 of this guide)
- Reproducible versions of game pieces (on pages 4–10 of this guide)

Before You Begin

- To set up the folder games, place the game pieces and answer cards in their corresponding storage pouches. (The pieces are color-coded to match the pouches and folders.) Place one pawn each in the Around the Track, Ready to Ride?, and Joe's River Run pouches. You will also need to attach one spinner each to the Around the Track and Ready to Ride? folders, and two spinners to the Soccer Match folder. Simply snap the front and back of each spinner together through the hole in the folder. Slip the pouches inside their folders in the storage box, and your folder games are ready to use!
  Note: For your convenience, reproducible versions of the game pieces are included on pages 4–10 of this guide. If any of the tokens for the Garden Patch and Ready to Ride? folders are lost, you can either photocopy the reproducible versions or use plastic chips instead.

About the Folder Games

Ten easy-to-play folder games provide independent, hands-on practice with operations and algebraic thinking. Each folder includes materials and simple, illustrated instructions for an engaging, focused activity—plus a bonus activity to reinforce the new concept. You can set the games in your math center and have students rotate through them, or invite students to select games to play on their own at their desks. However you use them in your classroom, these folder games are a great way to boost students' math skills!

Getting Started

Before students play the games on their own, be sure to model each one. Invite volunteers to help you. Select a folder and point out that the front of the folder shows the materials students need. Next, read the instructions together. Remind students to look at the illustrations to make sure they understand what to do. Have volunteers take turns playing the game and prompt them to check their work with the answer card.

Assessment

- An assessment can be found on page 3 of this guide. The assessment can be used as a pre-assessment tool to identify which folders students should be able to work on independently. It can also be used to identify which skill sets students need to develop further before they play the games independently.
- As a post-assessment tool, the questions can be used to check student understanding and record student progress. Each question on the assessment corresponds to a skill covered in a specific folder. See below for a complete listing.

Folder Skills

Folder	Skill
Garden Patch	Adding 3-Digit Numbers
Soccer Match	Subtracting 3-Digit Numbers
Doughnut Shop	Algebraic Thinking
Around the Track	Multiplying 2-Digit Numbers
Treasure Chest	Multiplying 3-Digit Numbers
Ready to Ride?	Dividing 2-Digit Numbers
Miniature Golf	Dividing 3-Digit Numbers
Joe's River Run	Division with Remainders
Across the Desert	Factor Trees
Track & Field	Mixed Operations

Standards Correlation

Folder(s)	Operations & Algebraic Thinking
Doughnut Shop	Multiplying or dividing to solve **word problems** involving multiplicative comparison
Across the Desert	Finding all **factor pairs** for a whole number within 100; determining whether a whole number within 100 is a **multiple** of a given one-digit number, and whether a whole number within 100 is **prime** or **composite**
Track & Field	Using parentheses, brackets, or braces in **numerical expressions**, and evaluating expressions with these symbols
Folder(s)	**Number & Operations in Base Ten**
Garden Patch; Soccer Match	Fluently **adding** and **subtracting multi-digit** whole numbers
Around the Track	**Multiplying** a whole number of up to four digits by a one-digit whole number, and multiplying two two-digit numbers; explaining using equations, rectangular arrays, and area models
Around the Track; Treasure Chest	Fluently **multiplying multi-digit whole numbers** using the standard algorithm
Ready to Ride?; Miniature Golf; Joe's River Run	Finding **whole-number quotients** of whole numbers with up to four-digit dividends and two-digit divisors using various strategies
Folder(s)	**Mathematical Practice**
Doughnut Shop; Joe's River Run	Making sense of problems and persevering in solving them
Garden Patch; Soccer Match; Doughnut Shop; Around the Track; Treasure Chest; Ready to Ride?; Miniature Golf; Joe's River Run; Across the Desert; Track & Field	Modeling with mathematics
Garden Patch; Soccer Match; Doughnut Shop; Around the Track; Treasure Chest; Ready to Ride?; Miniature Golf; Joe's River Run; Across the Desert; Track & Field	Attending to precision

Meeting Individual Needs

❑ ELL

Review any unfamiliar vocabulary before students begin the game. Then have students create a flash card for each of the 10 topics covered in the set. Have them label each card with the name of the folder that covers that topic. On the cards, students can record information about the topics. For example, the Garden Patch folder covers addition with three-digit numbers. Select a problem from the game and write it on your board or chart paper. Walk students through the problem and have them record their work on a flash card. Students can keep their cards in an envelope or on a binder ring and use them for reference when playing the games.

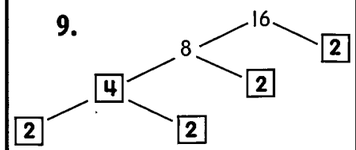
❑ Reteach/Extra Support

- Work with students in small groups or one-on-one. Read through the three-step illustrated instructions on a selected folder together. Then model the activity. Make sure students have a clear understanding of game play.
- Review multi-digit addition and subtraction. To ensure that numbers are lined up, have students write and solve problems on graph paper.
- Review basic multiplication. Give students a multiplication table (or have them make their own) to use for reference when playing the games.
- Review division with remainders. Have students use graph paper when they do long division to ensure that the numbers are lined up.
- Have students play with a partner and take turns solving problems.

❑ Challenge

- Have students complete the bonus activity on the front of each folder.
- Have students create and solve additional problems similar to the ones found in each folder.
- Have students time themselves each time they play the game. Have them graph or record the data to see if their time improves.

Assessment Answers

1. **A. 1,011**
2. **B. 70**
3. **C. 18**
4. **A. 459**
5. **C. 387,768**
6. **B. 7**
7. **C. 26**
8. **A. 6**
9. 

10. **C. 21**

Name _____ Date _____

OPERATIONS & ALGEBRAIC THINKING

1 Solve the problem.

309
+ 702

A. 1,011 B. 1,001 C. 1,100

2 Solve the problem.

359
− 289

A. 80 B. 70 C. 60

3 Solve for *n*.

$60 - n = 42$

A. 102 B. 16 C. 18

4 Solve the problem.

17
x 27

A. 459 B. 469 C. 349

5 Solve the problem.

453
x 856

A. 388,968 B. 378,867 C. 387,768

6 Solve the problem.

98 ÷ 14 =

A. 8 B. 7 C. 5

7 Solve the problem.

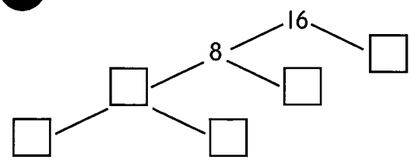
728 ÷ 28 =

A. 28 B. 30 C. 26

8 Art has 72 candy bars. If he divides them evenly among 11 friends and keeps the rest, how many does he keep?

A. 6 B. 5 C. 2

9 Complete the factor tree.



10 Solve the problem.

[4 x (16 ÷ 4)] + 5 =

A. 37 B. 9 C. 21

FOLDER 1 – GARDEN PATCH

1. 348 + 468 =

2. 118 + 624 =

3. 535 + 383 =

4. 197 + 157 =

5. 361 + 384 =

6. 602 + 289 =

7. 350 + 376 =

8. 160 + 255 =

9. 206 + 477 =

10. 256 + 256 =

11. 398 + 274 =

12. 105 + 219 =

FOLDER 2 – SOCCER MATCH

FOLDER 3 – DOUGHNUT SHOP

1. Nate picked 42 strawberries. He divided them equally into 7 baskets. How many strawberries were in each basket?

   42 ÷ n = 7

2. An airplane seats 230 people. If 204 people are on board, how many seats are empty?

   230 – n = 204

3. A newborn baby weighed 7 pounds. A year later, the baby weighed 22 pounds. How much weight did the baby gain?

   7 + n = 22

4. Rae baked a dozen cookies on Monday. By Friday, 4 cookies were left. How many cookies had been eaten?

   12 – n = 4

5. Ben went to the movies with $20. He bought a ticket and got $7 in change. How much did the ticket cost?

   $20 – n = $7

6. Yesterday Max had 104 toy cars. Today he has 127. How many cars did Max just add to his collection?

   104 + n = 127

7. A gallon is 16 cups. How many gallons is 80 cups?

   n x 16 = 80

8. Kate swims 8 laps in a swimming pool every day. How many days does it take her to swim 56 laps?

   8 x n = 56

9. Ms. Berman buys 60 candy canes. That's enough to give each student in her class 3 candy canes. How many students are in Ms. Berman's class?

   60 ÷ n = 3

10. Mr. Jacobs pays Ted $5 each time Ted mows the lawn. So far Ted has earned $45. How many times has he mowed the lawn?

    $5 x n = $45

11. Luke was 57 inches tall last year. Now he's 61 inches tall. How many inches has Luke grown?

    57 + n = 61

12. Jane read 13 books last year. Betty read 18 more books than Jane did. How many books did Betty read?

    n – 18 = 13

13. Jack divided his comic book collection among 6 friends. Each friend got 5 comic books. How many comic books did Jack have?

    n ÷ 6 = 5

14. James has saved $32. He wants to buy a $59 video game. How much more money does James need?

    $32 + n = $59

15. Liz makes it a point to read 20 pages every day. How many days does it take her to read 200 pages?

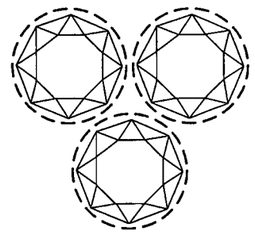
    20 x n = 200

FOLDER 4 – AROUND THE TRACK

384	1,089	966	4,930	2,379	925	1,008
144	3,478	351	2,745	726	252	880
272	380	4,900	6,318	6,231	4,840	

FOLDER 5 – TREASURE CHEST

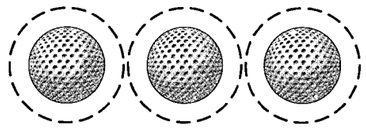
(1) 267 x 420	(2) 374 x 800	(3) 101 x 376	(4) 653 x 930
(5) 556 x 406	(6) 849 x 302	(7) 211 x 400	(8) 999 x 900
(9) 222 x 111	(10) 100 x 999	(11) 517 x 360	(12) 121 x 488
(13) 839 x 613	(14) 704 x 290	(15) 725 x 456	



FOLDER 6 – READY TO RIDE?

FOLDER 7 – MINIATURE GOLF

1. $20\overline{)940}$
2. $17\overline{)952}$
3. $16\overline{)288}$
4. $40\overline{)600}$
5. $21\overline{)630}$
6. $15\overline{)330}$
7. $16\overline{)224}$
8. $30\overline{)990}$
9. $20\overline{)380}$
10. $32\overline{)832}$
11. $40\overline{)480}$
12. $90\overline{)990}$
13. $54\overline{)918}$
14. $23\overline{)897}$
15. $24\overline{)576}$



FOLDER 8 – JOE'S RIVER RUN

1. Louis has 228 comic books. He divides them evenly between 11 friends. How many comic books does Louis have left?
2. Stan's book is 86 pages. He reads 13 pages every day. After 6 days, how many pages does Stan have to read before finishing the book?
3. A bakery made 272 doughnuts one morning. If it sold doughnuts by the dozen only, how many were left over?
4. An art museum has 117 paintings. Each room of the museum can display only 7 paintings. How many paintings have to be kept in storage?
5. Jenny bakes 71 cupcakes. She gives 11 to each of her friends and keeps the rest. How many cupcakes does Jenny keep?
6. Mo buys 35 pounds of soil. He uses 6 pounds of soil to plant each tree in his yard. How many pounds of soil are left?
7. A farmer has 124 chickens. He puts the same number of chickens into 9 chicken coops and lets the others go. How many chickens does the farmer set free?
8. Jerry has 103 pieces of candy. He gives 8 pieces to each of his classmates. How many pieces of candy does Jerry keep?
9. A train is carrying 343 people. 14 people get off the train at each stop. After the last stop, the only people left on the train are the crew. How many people is that?
10. Ray had 207 baseball cards. If he gave an even number of cards to 16 of his friends, how many did Ray have left?
11. Farmer Pete picks 406 peaches. He sells the same number of them to 17 markets and keeps the rest. How many peaches does he keep?
12. A school orders 435 new desks. Each classroom gets 20. How many extra desks does the school have?
13. Lucy baked 44 cookies. If she sold cookies in bags of 5, how many leftover cookies would she have?
14. You have $129. If you donated $25 to charity every month, how much money would be left after 5 months?
15. You have 49 apples. A recipe for apple pie calls for 9 apples. After you make as many apple pies as you can, how many apples do you have left?

FOLDER 9 – ACROSS THE DESERT

2	3	4	5	6	7	8	9	12
12	5	3	1	4	1	2	1	1

(Number of each tile needed to play the game.)

FOLDER 10 – TRACK AND FIELD

1 $(10 \times 9) - (8 \times 7)$ (bronze)	2 $[(5 + 4) \times 5] - 10$ (bronze)	3 $[11 \times (3 + 1)] \div 4$ (bronze)
4 $[20 \div (5 \times 2)] + 4$ (bronze)	5 $(12 + 8) \div (12 - 8)$ (bronze)	6 $(10 \times 2) + (16 \div 4)$ (silver)
7 $(5 \times 9) - (3 \times 9)$ (silver)	8 $5 \div (25 \div 5)$ (silver)	9 $(2 \times 40) \div 4$ (silver)
10 $[3 \times (8 \div 2)] - 3$ (silver)	11 $(8 \times 4) - (2 \times 5)$ (gold)	12 $(27 \div 3) + (2 \times 4)$ (gold)
13 $[2 \times (3 + 3)] - [2 \times (2 + 2)]$ (gold)	14 $[(3 + 5) \times 5] \div 4$ (gold)	15 $17 + (34 - 13)$ (gold)