

National Council of Teachers of Mathematics

THE NCTM is the world's largest mathematics education organization. NCTM publishes four professional journals including *Teaching Children Mathematics* and *The Mathematics Teacher*. For more information go to www.nctm.org

Process standards are embedded in every activity and assessment. We use problem solving as an application of skills. We invite our students to reason through math processes and make sense of their answers. We have students represent values in a multitude of ways, from pictures and symbols to fractions and decimals. Students make connections between math content areas such as addition and multiplication, and between math and other subject areas through problem-solving applications. Finally, activities encourage the students to communicate their understanding in speaking, writing, and computation.

Children and Math

Fifth-grade students are generally self-directed, with a growing understanding of the outside world. Students can understand abstract ideas and make choices about how they learn. Allow them to share suggestions with you and the class.

Students will begin the year at different stages of readiness, and core knowledge will vary from one individual to another. Because students have different styles and rates of learning, there are inclusion strategies provided throughout, as well as suggestions for integrated learning that can motivate students and help them to make real-life connections. Use activities to show math skills at work in games, sports, shopping, cooking, and scheduling. To address a variety of learning styles, we have included active, engaging activities that appeal to multiple intelligences. These can be supported with observation, demonstration, and manipulatives.

Good Advice!

Working through a single problem or two daily will keep skills fresh in a student's mind. Begin each class with a short skills review before a new skill is addressed. For bulletin boards and math kits that can help with this, go to www.mtmath.com.

Exploring the Distributive Property

Have students shade grids and write corresponding number sentences to show how they might find the product of 4 and 18 by using the distributive property. Here is one possible response:

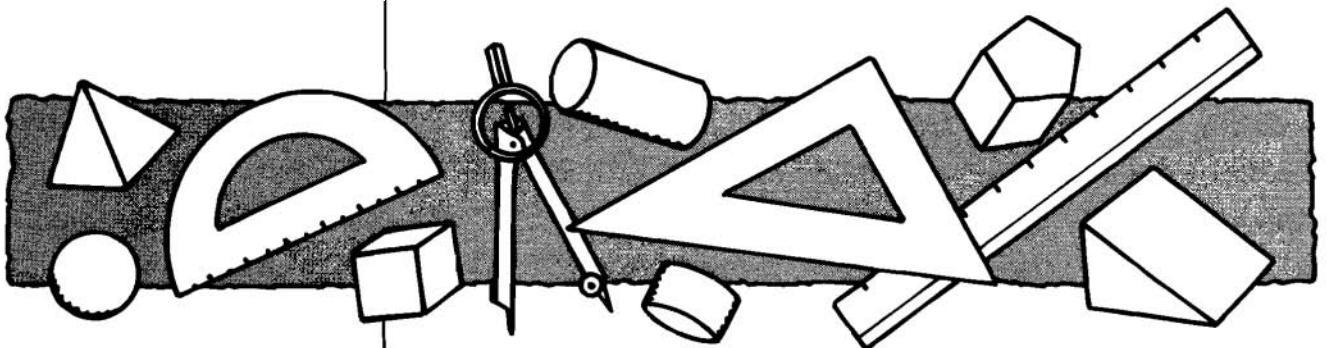
$$\begin{aligned}4 \times 18 &= 4 \times (10 + 8) \\ &= (4 \times 10) + (4 \times 8) \\ &= 40 + 32 = 72\end{aligned}$$

Acting Out

To keep math interesting, give students a break from writing answers. Set aside class time to “act out” math stories. If the story involves splitting up cookies among a number of students, bring in the cookies and have the class act out the solution. They can use manipulatives or real objects to help with visualizations.

Teacher Tips

The Math League was formed in 1911 by Steven R. Conrad and Daniel Flegler, both recipients of presidential awards for "Excellence in Mathematics Teaching." The Math League holds contests for grades 4 through 8 each year. Each contest consists of 30 multiple-choice questions that cover basic fourth- and fifth-grade topics, including properties of addition, subtraction, multiplication, and division; time and calendar questions; shapes; perimeter; money; basic ratio and percent; rounding numbers; remainders; integers; and more. Awards are certificates of merit. For further information go to <http://www.mathleague.com/>.



Where Does It Belong?

Directions:

Circle the correct answer for each question.

- Which number is in the tens place in 426.3?
a. 4 b. 2 c. 6 d. 3
- Which number is in the thousands place in 25,632.19?
a. 2 b. 5 c. 6 d. 3 e. 1 f. 9
- Which number is in the tenths place in 305,678.94?
a. 3 b. 0 c. 5 d. 6
e. 7 f. 8 g. 9 h. 4
- Which number is in the ones place in 4,752.8?
a. 4 b. 7 c. 5 d. 2 e. 8
- Which number is in the hundredths place in 58.349?
a. 5 b. 8 c. 3 d. 4 e. 9
- Which number is in the hundredths place in 463.821?
a. 4 b. 6 c. 3 d. 8 e. 2 f. 1
- Which number is in the hundred thousands place in 763,952.4?
a. 7 b. 6 c. 3 d. 9
e. 5 f. 2 g. 4
- Which number is in the thousandths place in 45.836?
a. 4 b. 5 c. 8 d. 3 e. 6
- Which number is in the ten thousands place in 854,536.01 ?
a. 8 b. 5 c. 4 d. 5
e. 3 f. 6 g. 0 h. 1
- Which number is in the ones place in the number 4,279.3?
a. 4 b. 2 c. 7 d. 9 e. 3

Answer Key

MATHO, page 47

- 12.8, 8.59, 8.97, 6.76, 9.45
- 12.383, 5.04, 2.369, 9.18, 13.21
- 17.6, 10.77, 1.45, 9.078, 10.17
- 6.36, 8.44, 6.97, 8.79, 18.395

M	A	T	H	O
17.6	1.7	8.59	10.17	9.45
2.99	2.369	6.97	8.97	5.76
10.77	9.18	5.04	9.97	9.078
6.36	13.27	3.92	12.383	7.45

A Perfect 1.0, page 48

- 0.14, 0.81, 0.743, 0.509, 0.1
- 0.62, 0.891, 0.588, 0.985, 0.645
- 0.98, 0.951, 0.159, 0.922, 0.691
- 0.71, 0.101, 0.401, 0.119, 0.402
- 0.519, 0.684, 0.190, 0.601, 0.092
- Answers will vary.
- Answers will vary.

Breaking the Code, page 49

- 6,408
- 4,884
- 4,113
- 1,430
- 46,435
- 12
- 5
- 22
- 115
- 57

Knight Gown

Who Am I?, page 50

- | | |
|-----------|-----------|
| A. 615 | B. 10,218 |
| E. 15,042 | I. 4,500 |
| I. 11,567 | M. 20,188 |
| N. 14,970 | O. 10,612 |
| R. 2,604 | R. 25,848 |
| S. 1,078 | S. 11,466 |
| T. 11,011 | T. 23,180 |
| U. 7,133 | Y. 47,318 |

I am your sister.

Cross-Quotient Puzzle, page 51

Across

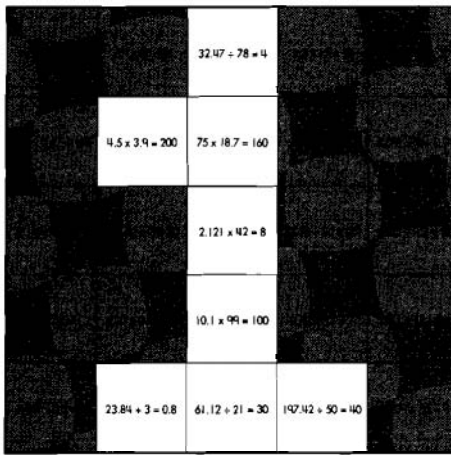
- | | |
|-------------|--------------|
| 1. 16 R 25 | 3. 41 R 35 |
| 6. 501. R 3 | 1. 49 R 26 |
| 9. 6 R 51 | 11. 44 R 76 |
| 12. 85 R 1 | 14. 598 R 29 |
| 15. 19 R 10 | |

Down

- | | |
|-------------|------------|
| 1. 19 | 2. 55 R 66 |
| 3. 4 R 41 | 4. 739 |
| 5. 302 | 8. 621 R 9 |
| 10. 59 R 50 | 11. 43 R 9 |
| 13. 50 R 1 | |

Color by Estimate, page 52

Answers will vary.



We're Going on a Picnic, page 53

- | | |
|------------|--------------|
| 1. \$1.11 | 2. \$17.95 |
| 3. \$9.31 | 4. \$3.48 |
| 5. \$5.23 | 6. \$9.88 |
| 7. \$26.91 | 8. \$5.67 |
| 9. \$33.52 | 10. \$113.12 |
| 11. \$1.05 | 12. \$5.00 |

Amuse Yourself, page 54

- | | |
|----------------|----------------|
| 1. \$22,221.00 | 2. \$6,278.75 |
| 3. \$219 | 4. \$1,191 |
| 5. \$3,646 | 6. \$11,973.50 |
| 7. 3,063 | 8. 2,396 |
| 9. 22,491 | |

Riddle Me, page 55

- | | |
|-----------|----------|
| 1. 1.2 | 2. 3.1 |
| 3. 1.31 | 4. 0.09 |
| 5. 0.1 | 6. 2.03 |
| 1. 2.56 | 8. 0.05 |
| 9. 1.2 | 10. 80.1 |
| 11. 5.12 | 12. 1.2 |
| 13. 80.1 | 14. 5.12 |
| 15. 0.016 | 16. 0.05 |

Pink Eucalipstick

Sunny Day, page 56

- 4, 90, 12, 6
- 10, 14, 72, 36
- 35, 18, 30, 24
- 8, 40, 20, 56
- 45, 50, 21, 63

In Common, page 57

- | | |
|----------------------------------|--------------------------------------|
| 1. 6: 1, 2, 3, 6 | 8: 1, 2, 4, 8 |
| 2. 9: 1, 3, 9 | 10: 1, 2, 5, 10 |
| 3. 12: 1, 2, 3, 4, 6, 12 | 15: 1, 3, 5, 15 |
| 4. 18: 1, 2, 3, 6, 9, 18 | 20: 1, 2, 4, 5, 10, 20 |
| 5. 24: 1, 2, 3, 4, 6, 8, 12, 24 | 30: 1, 2, 3, 5, 6, 10, 15, 30 |
| 6. 32: 1, 2, 4, 8, 16, 32 | 36: 1, 2, 3, 4, 6, 9, 12, 18, 36 |
| 7. 40: 1, 2, 4, 5, 8, 10, 20, 40 | 48: 1, 2, 3, 4, 6, 8, 12, 16, 18, 24 |
| 8. 50: 1, 2, 5, 10, 25, 50 | 64: 1, 2, 4, 8, 16, 32, 64 |
- A. 4 D. 16 H. 3 N. 8
O. 1 R. 12 S. 10 T. 6
U. 2 w. 18

A Thousand Words

Take the Hints, page 58

- | | | | |
|-------------------|--------------------|------------------|------------------|
| A. $\frac{7}{8}$ | E. $\frac{2}{3}$ | U. 1 | A. $\frac{3}{8}$ |
| L. $\frac{6}{7}$ | N. $\frac{1}{2}$ | R. $\frac{3}{4}$ | L. $\frac{4}{5}$ |
| M. $\frac{9}{10}$ | B. $\frac{11}{16}$ | | |

An Umbrella

Color by Sum, page 59

- $\frac{3}{4}, \frac{3}{8}, \frac{5}{6}$
- $\frac{7}{8}, \frac{1}{4}, \frac{5}{8}$
- $\frac{1}{2}, \frac{1}{6}, \frac{3}{5}$
- $\frac{2}{5}, \frac{4}{5}, \frac{1}{3}$
- $\frac{2}{3}, \frac{9}{10}, \frac{7}{12}$
- Sum = 1
- Answers will vary.

Picture Perfect, page 60

- | | | | |
|------------------|-------------------|-------------------|-------------------|
| 1. $\frac{1}{8}$ | 2. $\frac{1}{6}$ | 3. $\frac{5}{8}$ | 4. $\frac{1}{2}$ |
| 5. $\frac{1}{4}$ | 6. $\frac{3}{8}$ | 7. $\frac{2}{5}$ | 8. $\frac{1}{5}$ |
| 9. $\frac{1}{3}$ | 10. $\frac{3}{4}$ | 11. $\frac{5}{6}$ | 12. $\frac{2}{3}$ |

Mount Everest