

Arithmetic

3 Work-text

Sixth Edition



$$\begin{array}{r} 21 \\ 4 \overline{)84} \\ \underline{-8} \\ 04 \\ \underline{-4} \\ 0 \end{array}$$

$$n+3=5$$

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

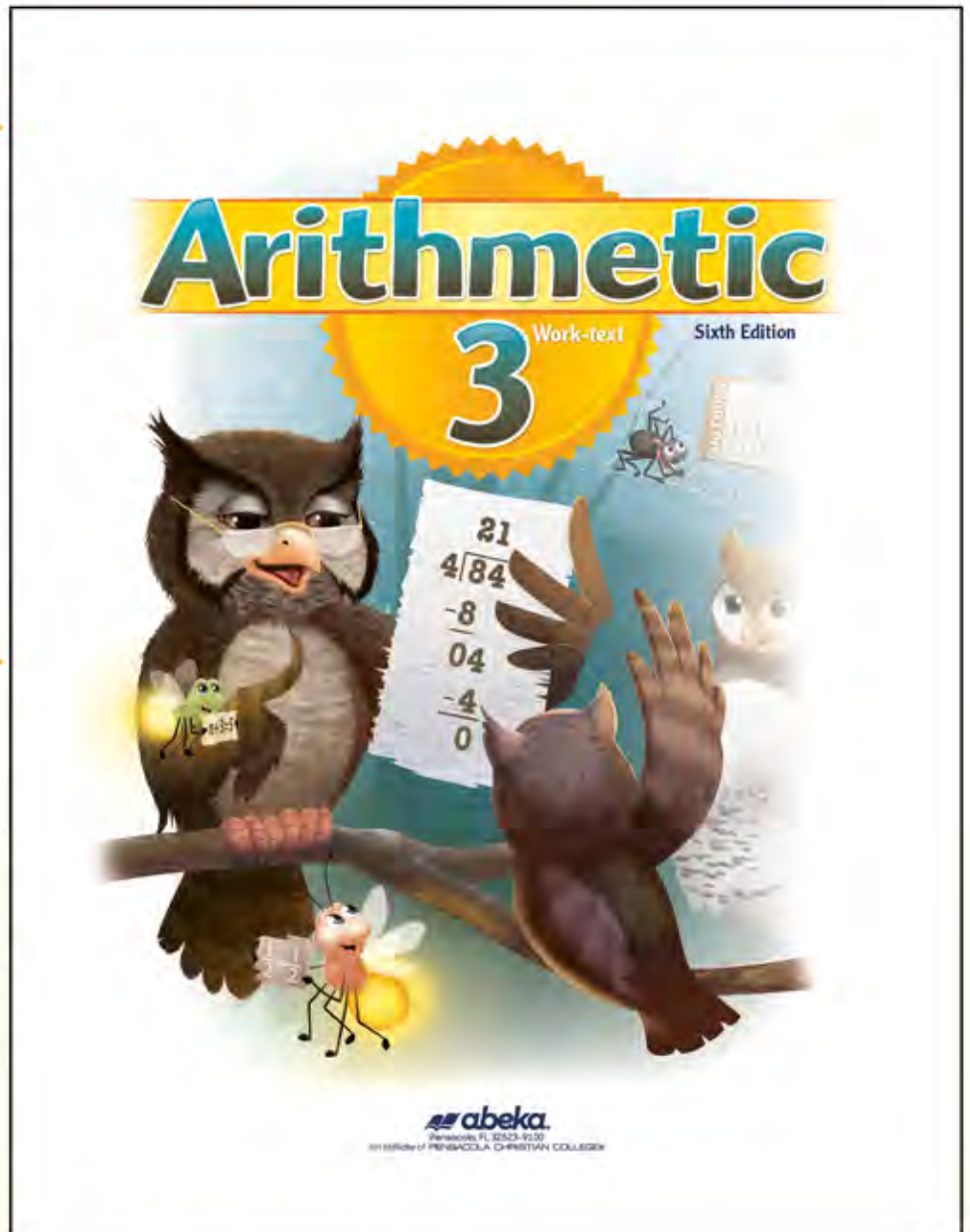
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About the Text

Arithmetic 3 contains a variety of exercises including review material and application of new concepts. It is vital that students *hear* a thorough explanation of each concept and *see* procedures demonstrated step by step by the teacher. Each work-text page is designed to be classwork, completed during class time and worked together. A Homework section is provided once a week up to Lesson 120 and twice a week thereafter.

Arithmetic 3 Teacher Edition contains Arithmetic Skills and Application for each lesson. Use this resource to further develop the quality of application of skills on each work-text page. The Teacher Edition coordinates with the *Arithmetic 3 Curriculum Lesson Plans* and includes 170 lessons. *Arithmetic 3 Tests & Speed Drills* is also available and correlates with the work-text.



Arithmetic 3 Teacher Edition

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Teaching Materials

Student Materials

Arithmetic 3 Work-text
Arithmetic 3 Quizzes, Tests & Speed Drills

Teacher Materials

Arithmetic 3
Teacher Edition
Quiz, Test & Speed Drill Key
Curriculum Lesson Plans
Numbers Flashcards
Addition Flashcards
Subtraction Flashcards
Multiplication Flashcards
Division Flashcards
Arithmetic 3 Concept Cards
Classroom Coins
Arithmetic 3 Charts and Games
Arithmetic 3–8 Tables and Facts
Charts
Demonstration clock (purchase from local vendor)

Teacher Information

Time Allotment

In the *Abeka 3rd* grade curriculum, arithmetic is taught/practiced for 40–45 minutes.

Teaching Procedure

The *Arithmetic 3 Curriculum Lesson Plans* gives detailed guidance, helpful teaching tips, and suggestions for teaching each lesson. Arithmetic class generally begins with approximately ten minutes of combination practice, ending with *Rapid Calculation Practice* and a written speed drill. Speed drills are checked but not recorded as a grade.

A systematic oral review time follows the speed drill, covering recently taught material as well as earlier concepts. After this review time, new concepts

Contents

1	Nocturnal Creatures pages 1–70	Lessons 1–35
	<ul style="list-style-type: none"> • Place value to hundred thousands • Round numbers to nearest 10/100 • Addition/Subtraction Families 1–18 • Addition with carrying • Subtraction with borrowing • Multiplication/Division Tables 0–4 	<ul style="list-style-type: none"> • Addition/Subtraction of money • Geometric plane/solid figures • Geometric concepts • Linear/Time/Liquid measures • Clock to nearest minute/elapsed time • Measures to nearest $\frac{1}{2}$ inch
2	Travel across America pages 71–160	Lessons 36–80
	<ul style="list-style-type: none"> • Estimate sums/differences • Multiplication/Division Tables 5–7 • Multiplication with carrying • Multiplying money • Long division with remainders • Checking division using multiplication • Thermometer/Reference temperatures 	<ul style="list-style-type: none"> • Pictographs • Bar graphs • Line graphs • Metric linear/liquid measures • Measures to nearest cm • Dry/Calendar/Dozen/Mass measures • Converting measures
3	Zoos around the World pages 161–250	Lessons 81–125
	<ul style="list-style-type: none"> • Multiplication/Division Tables 8–11 • Order of operations • Fractional parts of whole numbers • Four-digit dividends • Measurement conversion story problems 	<ul style="list-style-type: none"> • Roman numerals • Adding/Subtracting fractions • Equivalent fractions • Reducing fractions • Adding/Subtracting mixed numbers
4	Space pages 251–340	Lessons 126–170
	<ul style="list-style-type: none"> • Multiplication/Division Table 12 • Division with fractional remainders • Dividing money • Averaging numbers 	<ul style="list-style-type: none"> • Two-digit multiplication with carrying • Two-digit divisors • Round money to nearest dollar • Making change

Arithmetic 3
Sixth Edition

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are introduced and practiced. The time needed depends on the difficulty and newness of the concept. Once the new concepts are taught, the teacher guides the class through work-text pages. The Brain Booster question often ends the lesson. The Brain Booster is designed to encourage students' thinking and listening skills.

Quizzes, Tests, and Speed Drills

Daily speed drills, bi-weekly quizzes, and bi-weekly tests are included in *Arithmetic 3 Quizzes, Tests & Speed Drills*. Answers/point values are included in *Arithmetic 3 Quiz, Test & Speed Drill Key*.

Lesson 36

Theme 2: Travel across the United States Lessons 36–80

Application

- **p. 71:** Read directions one section at a time, pacing students through paper.

🔔 **Reminder:** As time permits, call on students to give answers for sections worked independently, allowing students to check their answers.

Review steps of division, using information/example to illustrate.

- ▶ **Sect. 1:** Students write 4 steps of division.

- ▶ **Sect. 2:** Work problems as a class, guiding students step by step. Before working each step, students write symbol for it next to corresponding number.

🔔 **Learning/practicing** steps of long division using simple problems allows students to focus on steps rather than complexity of problem.

- ▶ **Sect. 3:** Read story problem twice, having students do computation in workspace/write answer in blank. **The 2 pencil holders on Mrs. Harrington's desk have the same number of pencils in each. If there are 10 pencils altogether, how many pencils are in each holder?**

- ▶ **Sect. 4:** Review finding unknown addend. When you feel your class is confident, have students work independently as you assist individuals.

Name _____ Date _____

Solving Division Problems

$$\begin{array}{r} 3 \\ 2 \overline{)6} \\ -6 \\ \hline 0 \end{array}$$

1. Divide ÷
2. Multiply ×
3. Subtract −
4. Compare c

The steps of division make it possible to solve any division problem.

1. Write the steps of division in order.

1. ÷ 2. × 3. − 4. c

2. Divide. Write the steps as you do them.

a.
$$\begin{array}{r} 2 \\ 2 \overline{)4} \\ -4 \\ \hline 0 \end{array}$$

1. ÷
2. ×
3. −
4. c

b.
$$\begin{array}{r} 4 \\ 2 \overline{)8} \\ -8 \\ \hline 0 \end{array}$$

1. ÷
2. ×
3. −
4. c

c.
$$\begin{array}{r} 2 \\ 3 \overline{)6} \\ -6 \\ \hline 0 \end{array}$$

1. ÷
2. ×
3. −
4. c

3. Write the answer to the listening skills question.

Show your work in the workspace. **5 pencils**

Workspace

$10 \div 2 = 5$
5 pencils

4. Find the unknown addend.

a.
$$\begin{array}{r} 62 \\ + 21 \\ \hline 83 \end{array}$$

$$\begin{array}{r} 83 \\ - 62 \\ \hline 21 \end{array}$$

b.
$$\begin{array}{r} 325 \\ + 312 \\ \hline 637 \end{array}$$

$$\begin{array}{r} 637 \\ - 325 \\ \hline 312 \end{array}$$

c.
$$\begin{array}{r} 2,476 \\ + 1,213 \\ \hline 3,689 \end{array}$$

$$\begin{array}{r} 3,689 \\ - 2,476 \\ \hline 1,213 \end{array}$$



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Lesson 36 71

Arithmetic Skills

- Identifying steps of solving long division problem
- Applying steps of division to long division problem
- Interpreting dictated information to solve oral story problems
- Applying inverse properties of addition/subtraction to find unknown addend
- Identifying place value in large numbers
- Identifying geometric plane shapes/solid figures
- Determining perimeter/area of geometric shapes
- **Brain Booster:** Determining measurement of one side of triangle using perimeter/2 given lengths

5. Write the name of the place for each circled digit.

a. 25,695

ten thousands

b. 86716

thousands

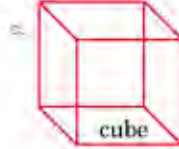
c. 475826

hundreds

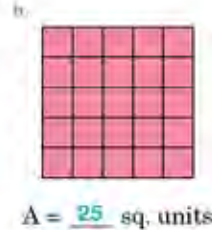
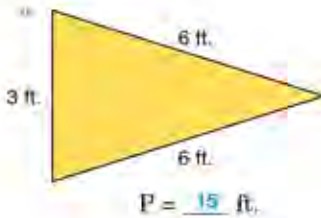
d. 612,469

hundred thousands

6. If the label for the geometric shape is incorrect, cross it out and write the correct name in the shape.



7. Find the perimeter and area.



Application

- **p. 72:** Read directions one section at a time, pacing students through paper.
 - ▶ Sect. 5: Review place value, calling on student to give place for circled digit in a. Students work independently as you assist individuals.
 - ▶ Sect. 6: Work section as class, calling on students to identify incorrect labels. You may wish to assist students with spelling.
 - ▶ Sect. 7: Students complete section independently.
- Walk around room, marking papers/checking to see how students did. Students may take completed worksheet home.

Brain Booster

- **The perimeter of a triangle is 12 feet. If one side of that triangle is 4 feet long and the second side is 5 feet long, how long is the third side?** Allow students to volunteer ideas for determining missing measurement. You may wish to draw triangle on board/label two sides. $4 + 5 = 9$ $12 - 9 = 3$ ft.

Teaching Notes

Lesson 149

Application

- **p. 297:** Read directions one section at a time, pacing students through paper.

Review multiplication with carrying, using information/sample problem to illustrate.

- **Sect. 1:** Copy/demonstrate first problem(s) step by step on board. Call on students to give steps/answers. Continue working problems as class until you feel your class is confident to work independently. Check independent work as class.
- **Sect. 2:** Students read each story problem, determine question/information given, solve problem in workspace/write answer, including label, in blank. To check work, call on students to explain process/answer for each story problem.

Name _____ Date _____

More Multiplication with Carrying

$$\begin{array}{r} +1 \\ +2 \\ 56 \\ \times 34 \\ \hline 224 \\ +1680 \\ \hline 1,904 \end{array}$$

1. First, multiply the top factor by the ones digit in the bottom factor. Carry if needed. Cross out any carrying number.
2. Next, multiply the top factor by the tens digit in the bottom factor. Carry if needed.
3. Add the two partial products.

1. Write the quotients.

$$\begin{array}{r} +1 \\ +3 \\ 74 \\ \times 35 \\ \hline 370 \\ +2220 \\ \hline 2,590 \end{array}$$

$$\begin{array}{r} +2 \\ +3 \\ 37 \\ \times 44 \\ \hline 148 \\ +1480 \\ \hline 1,628 \end{array}$$

$$\begin{array}{r} 82 \\ \times 41 \\ \hline 82 \\ +3280 \\ \hline 3,362 \end{array}$$

$$\begin{array}{r} +3 \\ +3 \\ 63 \\ \times 18 \\ \hline 504 \\ +630 \\ \hline 1,134 \end{array}$$

$$\begin{array}{r} +1 \\ +3 \\ 58 \\ \times 29 \\ \hline 522 \\ +1160 \\ \hline 1,682 \end{array}$$

2. Solve the story problems.

- a. Mr. Yamada bought supplies for the church work day. He bought a gallon of paint for \$27.98, a mop for \$20.05, and 3 packages of sponges for \$3.46 each. How much change did he get back from \$75.00? \$16.59

Workspace - a

\$3.46	\$27.98	\$75.00
× 3	+10.38	-58.41
\$10.38	\$58.41	\$16.59

- b. Olivia's family went on vacation. They traveled 276 miles on Monday, twice as far on Tuesday as on Monday, and $\frac{1}{3}$ as far on Wednesday as on Tuesday. How far did they travel on all three days? 1,012 miles

Workspace - b

276	184
× 2	3 552
552	-3 ↓
	25
	-24 ↓
	12
	-12
	0
276	
552	
+ 184	
1,012	

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Lesson 149 297

Arithmetic Skills

- Solving multiplication problems with two 2-digit factors/carrying
- Interpreting information to solve story problems
- Identifying equivalent measures
- Applying inverse properties to solve for unknown numbers in equations
- Applying concepts of addition/division to average numbers
- Applying concept of division to reduce fractions to lowest terms
- Interpreting number words to write numbers
- Demonstrating value of money by identifying dollars/cents needed to equal given amount
- **Brain Booster:** Relating metric units of weight

3. Write the answers.

- a. 1 mi. = 5,280 ft. b. 1 ton = 2,000 lb. c. 1 yd. = 36 in.
 d. 1 bu. = 4 pk. e. 1 yr. = 365 days f. 1 kg = 1,000 g
 g. 1 gal. = 4 qt. h. 1 lb. = 16 oz. i. 1 yd. = 3 ft.
 j. 1 year = 12 mo. k. 1 pk. = 8 qt. l. 1 week = 7 days

4. Solve the equation and check.

$$n + 6 = 14 \div 2 + 9$$

$$\begin{array}{r} n + 6 = 16 \\ -6 = -6 \\ \hline n = 10 \end{array}$$

$$10 + 6 = 14 \div 2 + 9$$

$$16 = 16 \quad \checkmark$$



Because there is no wind on the moon, the footprints made by the astronauts are still there today.

5. Find the average.

Circle the answer.

$$\begin{array}{r} 25 \\ 27 \\ 38 \\ + 34 \\ \hline 124 \end{array}$$

$$\begin{array}{r} 4 \overline{)124} \\ \underline{-12} \\ 04 \\ \underline{-4} \\ 0 \end{array}$$

31

6. Reduce these fractions.

- a. $\frac{15}{20} = \frac{3}{4}$ b. $\frac{8}{64} = \frac{1}{8}$ c. $\frac{9}{15} = \frac{3}{5}$ d. $\frac{4}{22} = \frac{2}{11}$

7. Write the number.

- a. five hundred ninety-three thousand, sixty-two 593,062
 b. two million, eight hundred 2,000,800

8. Write the number of bills and coins needed.

Amount								
\$77.23	7	1	2		2		3	

Application

- **p. 298:** Read directions one section at a time, pacing students through paper.
 - ▶ Sect. 3: Students complete section independently.
 - ▶ Sect. 4–5: Students work independently as you assist individuals.
 - ▶ Sect. 6–7: Students complete sections independently. To check work, you may wish to have some students write answers on board.
 - ▶ Sect. 8: Students work independently as you assist individuals. Check work as class.
- Walk around room, marking papers/checking to see how students did. Students may take completed worksheet home.

Brain Booster

- A 200-kilogram weight on Earth would weigh only 33 kilograms on the moon.
 - ▶ How much would a 400-kilogram weight weigh on the moon? *66 kg*
 - ▶ How much would a 600-kilogram weight weigh? *99 kg*

Teaching Notes