



# GRADE 4 SUPPLEMENT

---

## Set A4 Number & Operations: Estimating to Multiply & Divide

### Includes

Independent Worksheet 1: Using Compatible Numbers	A4.1
Independent Worksheet 2: More Compatible Numbers	A4.3
Independent Worksheet 3: Reasonable Estimates	A4.5

### Skills & Concepts

- ★ use strategies including rounding and compatible numbers to estimate solutions to multiplication and division problems

**Bridges in Mathematics Grade 4 Supplement**

**Set A4** Numbers & Operations: Estimating to Multiply & Divide

The Math Learning Center, PO Box 12929, Salem, Oregon 97309. Tel. 1 800 575–8130.

© 2013 by The Math Learning Center

All rights reserved.

Prepared for publication on Macintosh Desktop Publishing system.

Printed in the United States of America.

P201309

The Math Learning Center grants permission to classroom teachers to reproduce blackline masters in appropriate quantities for their classroom use.

*Bridges in Mathematics* is a standards-based K–5 curriculum that provides a unique blend of concept development and skills practice in the context of problem solving. It incorporates the Number Corner, a collection of daily skill-building activities for students.

The Math Learning Center is a nonprofit organization serving the education community. Our mission is to inspire and enable individuals to discover and develop their mathematical confidence and ability. We offer innovative and standards-based professional development, curriculum, materials, and resources to support learning and teaching. To find out more, visit us at [www.mathlearningcenter.org](http://www.mathlearningcenter.org).

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Set A4 ★ Independent Worksheet 1



## INDEPENDENT WORKSHEET

### Using Compatible Numbers

Some people estimate answers to multiplication and division problems by using compatible numbers. Compatible numbers are numbers that make it easier to estimate the answer to a problem.

**example a** A page has 11 words in one line and 28 lines on the page. *About* how many words on the whole page? If you don't need an exact answer, you can estimate what  $11 \times 28$  is by using compatible numbers.

11 is close to 10

28 is close to 30

$10 \times 30 = 300$ , so the page has about 300 words.

**example b** 10 kids want to share 97 marbles equally. About how many marbles will they each get? If you don't need an exact answer, you can estimate by using compatible numbers.

97 is close to 100.

10 is already a friendly number. You don't have to change both numbers.

$100 \div 10 = 10$ , so they'll each get about 10 marbles.

**1a** Choose a chapter book from your classroom. Turn to a page in the middle of the book. *About* how many words do you think there are on the page? To find out, count the number of words in one line. Next, count the number of lines on the page. Record the information:

Words in one line: \_\_\_\_\_

Lines on the page: \_\_\_\_\_

(Continued on back.)

**Independent Worksheet 1** Using Compatible Numbers (cont.)

**1b** Use compatible numbers to estimate the number of words on the page. Show your work.

**2** The 4th grade is taking a field trip to the zoo. There are 86 students. The bus company plans to use 3 buses. Estimate how many students will ride in each bus. Use compatible numbers to help you. Show your work.

**3** Estimate the answers to the following division problems. Use compatible numbers to help you. Show your work. The first one is done for you.

<p><b>example</b> <math>89 \div 10</math></p> <p><i>89 is close to 90.</i>  <math>90 \div 10 = 9</math>, so the answer is about 9.</p>	<p><b>a</b> <math>25 \div 4</math></p>
<p><b>b</b> <math>39 \div 4</math></p>	<p><b>c</b> <math>48 \div 10</math></p>

**CHALLENGE**

**4** Use compatible numbers to estimate the answer to  $24 \times 21$ . Use a calculator to check your answer. How close was your estimate?

NAME \_\_\_\_\_

DATE \_\_\_\_\_

## Set A4 ★ Independent Worksheet 2



### INDEPENDENT WORKSHEET

### More Compatible Numbers

1 Which 2 numbers in the box could you multiply to come closest to 420? Show your thinking.

<b>39   47   5   11   62   87   26</b>
--

2 Estimate the answers to the following multiplication problems. Use compatible numbers to help you. Show your work.

<p><b>example</b> <math>19 \times 6 =</math></p> <p><i>19 is close to 20 6 is close to 5 <math>20 \times 5 = 100</math> My estimate is 100</i></p>	<p><b>a</b> <math>39</math> <math>\times 12</math></p>	<p><b>b</b> <math>84 \times 9 =</math></p>
--	--	--

3 Estimate the answers to the following division problems. Use compatible numbers to help you. Show your work.

**a** About how much does each can of soda cost if a 6-pack costs \$1.19?

**b** Abbie and her 3 friends want to split a bag of 72 peanuts equally. About how many peanuts will each of the 4 children get?

(Continued on back.)

## Independent Worksheet 2 Using Compatible Numbers (cont.)



### CHALLENGE

**4** Estimate  $726 \div 11$ . Record and explain your estimate. Use a calculator to check your answer. How close was your estimate?

NAME \_\_\_\_\_

DATE \_\_\_\_\_

# Set A4 ★ Independent Worksheet 3



## INDEPENDENT WORKSHEET

### Reasonable Estimates

**1** Circle the answer that gives a reasonable estimate for each problem. (Hint: try using compatible numbers to help.) To the right of the problem, use words, numbers and/or pictures to explain why you think it is a reasonable estimate. The first one is done for you.

<p><b>example</b>     <math>16</math>                   <math>\times 4</math></p> <p>32            16 is close to 15</p> <p><u>60</u>            <math>15 \times 2 = 30</math>, so <math>15 \times 4 = 60</math>.</p> <p>94            60 is the closest estimate</p> <p>104</p>	<p><b>a</b>     <math>23</math>           <math>\times 5</math></p> <p>75</p> <p>95</p> <p>120</p> <p>175</p>
<p><b>b</b>     <math>26</math>        <math>\times 3</math></p> <p>50</p> <p>75</p> <p>100</p> <p>125</p>	<p><b>c</b>     <math>206 \div 10 =</math></p> <p>10</p> <p>20</p> <p>30</p> <p>120</p>

(Continued on back.)

**Independent Worksheet 3** Using Compatible Numbers (cont.)

<b>d</b> $74 \div 7 =$	<b>e</b> $101 \div 9 =$
10	7
12	8
15	9
20	10

**2** Randy has \$7.00. Basketball trading cards cost \$0.49 each. He estimates that he will be able to buy about 19 cards with his money. Is this a reasonable estimate? Use words, numbers and/or pictures to explain your answer.