



GRADE 4 SUPPLEMENT

Set A2 Number & Operations: Multiplication

Includes

Activity 1: 100th Day, How Many?	A2.1
Independent Worksheet 1: An Array of Fact Families	A2.5
Independent Worksheet 2: Fact Family Triangles	A2.7
Independent Worksheet 3: Fact Families for the Tens	A2.11
Independent Worksheet 4: Multiplying by One Hundred	A2.13

Skills & Concepts

- ★ understand the relationship between multiplication and division
- ★ use patterns to develop fluency with multiplication to 10×10
- ★ use patterns to multiply by 10 and by 100

Bridges in Mathematics Grade 4 Supplement

Set A2 Numbers & Operations: Multiplication

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

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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.

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Set A2 ★ Activity 1



ACTIVITY

100th Day, How Many?

Overview

Students work as a class, followed by independent practice, to use patterns to multiply numbers by 100.

Skills & Concepts

★ use patterns to multiply by 10 and by 100

You'll need

- ★ 100th Day, How Many? (page A2.3, run 1 copy on a transparency)
- ★ 100th Day at Storybook School (page A2.4, run a class set)
- ★ a piece of paper to mask parts of the overhead

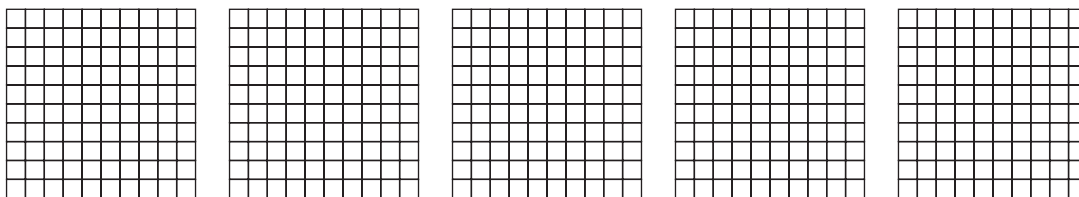
Instructions for 100th Day, How Many?

1. Give each student a base 10 mat and explain that you're going to use them to solve some problems together. Then explain that in some schools (perhaps including yours), primary students bring in collections of 100 items on the 100th day of school. Some students bring in 100 sports cards; others bring in 100 noodles, paperclips, pennies, or pieces of cereal. They use their collections to learn more about counting and grouping. Today, you're going to pose and solve some problems about collections of 100.

2. Display the first problem of the 100th Day, How Many? on the overhead, leaving the rest covered for now. Read it together.

5 kids each brought a collection of 100 objects to school. How many objects in all?

Chances are, most students will know that the answer is 500. To reinforce their thinking with a visual model, ask 5 children to bring their base 10 mats to the front of the room. How many units are they holding up in all? Ask students to explain their answers.



Students *Each unit is 1 tiny square, right? Each mat has 100 because there are 10 rows of 10. So then you can just count 100, 200, 300, 400, 500.*

I just know there are 100 units on each mat, and 5 hundreds is 500.

There are 500 units because 5 hundreds makes 500.

3. Work with input from the class to record the equation $5 \times 100 = 500$ under the first problem at the overhead.

4. Continue as described in steps 2 and 3, revealing each problem on the overhead, inviting students forward in groups, and writing equations. After you've worked your way through the 6 problems, ask

Activity 1 100th Day, How Many? (cont.)

students to describe any patterns they noticed and make generalizations about what happens when you multiply a number by 100. Summarize their comments at the bottom of the overhead.

5. Give each student a copy of 100th Day at Storybook School. Review the sheet together and then ask students to complete the sheet independently. Encourage them to share and compare results with a partner when they're finished.



INDEPENDENT WORKSHEET

See Set A2 Independent Worksheets 1–4 for more practice using patterns to multiply by 100.

100th Day, How Many?


- 1** 5 kids each brought a collection of 100 objects to school. How many objects in all?
- 2** 8 kids each brought a collection of 100 objects to school. How many objects in all?
- 3** 10 kids each brought a collection of 100 objects to school. How many objects in all?
- 4** 14 kids each brought a collection of 100 objects to school. How many objects in all?
- 5** 16 kids each brought a collection of 100 objects to school. How many objects in all?
- 6** 32 kids each brought a collection of 100 objects to school. How many objects in all?
- 7** What happens when you multiply any number by 100?

NAME _____

DATE _____

100th Day at Storybook School

At Storybook School, the characters are excitedly preparing for the 100th day of school. Each character is planning to bring 100 items to share with the rest of the class. Many of the families have to send more than 100 items because they have multiple characters in one family. Please help them to figure out how many items each storybook family needs to send.

Storybook Family	Multiplication Expression	Value (How many items will this storybook family need to send?)
1 Goldilocks	100×1	100
2 Cinderella, 2 stepsisters, stepmother		
3 5 Little Monkeys		
4 3 Billy Goats Gruff		
5 Hansel and Gretel		
6 Charlotte, Wilbur, Templeton, Fern, 2 geese, (sheep don't go to school)		
7 Boxcar Children: Henry, Jessie, Violet, Benny		
8 Snow White and the 7 Dwarfs		
9 3 Blind Mice		
 10 101 Dalmations		

NAME _____

DATE _____

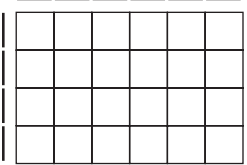
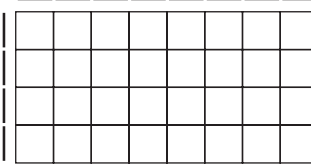
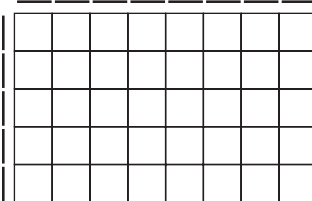
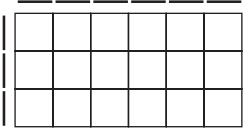
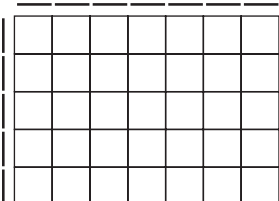
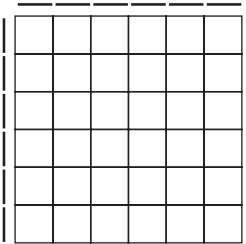
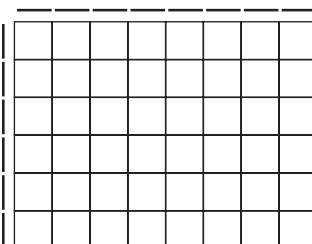
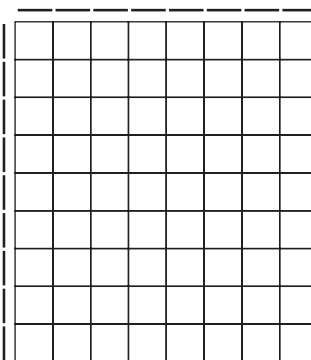
Set A2 ★ Independent Worksheet 1



INDEPENDENT WORKSHEET

An Array of Fact Families

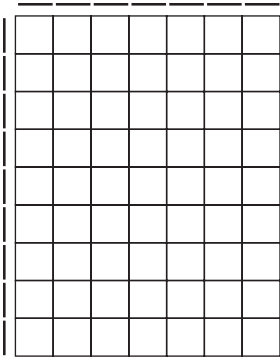
Write the fact families for each array. The first one has been done for you.

<p>example</p>  $4 \times 6 = 24$ $6 \times 4 = 24$ $24 \div 6 = 4$ $24 \div 4 = 6$	<p>1</p> 
<p>2</p> 	<p>3</p> 
<p>4</p> 	<p>5</p> 
<p>6</p> 	<p>7</p> 

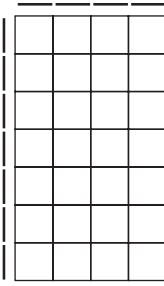
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Independent Worksheet 1 An Array of Fact Families (cont.)

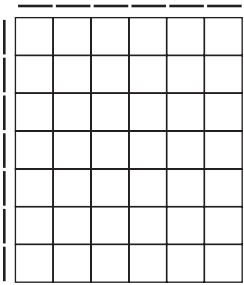
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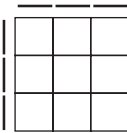
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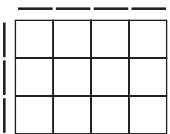
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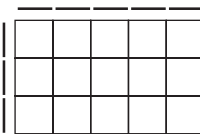
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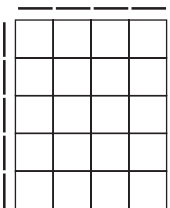
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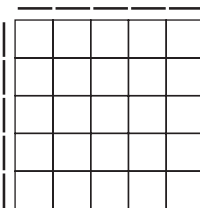
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15



NAME _____

DATE _____

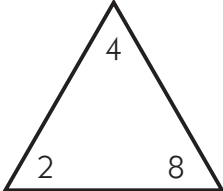
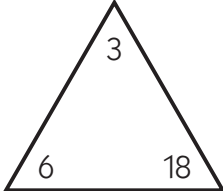
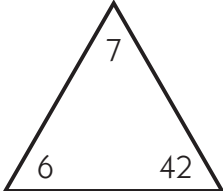
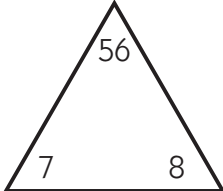
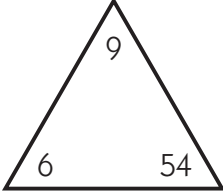
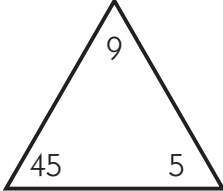
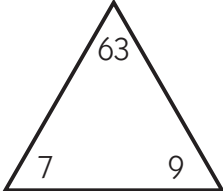
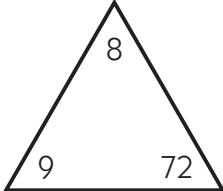
Set A2 ★ Independent Worksheet 2



INDEPENDENT WORKSHEET

Fact Family Triangles

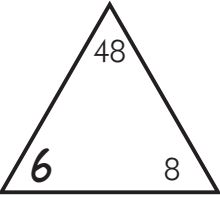
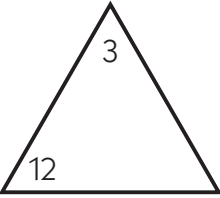
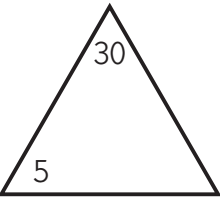
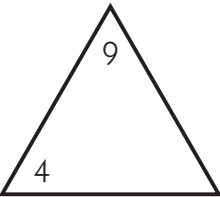
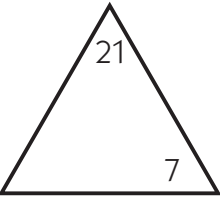
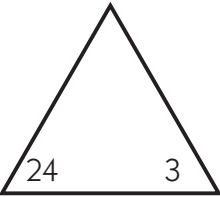
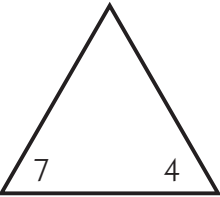
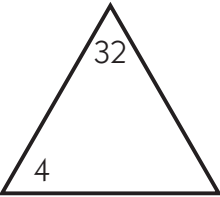
1 2×4 and 4×2 are 8, $8 \div 2 = 4$ and $8 \div 4 = 2$. Can you see how 2, 4, and 8 are related? That's why they're called a fact family. Each of the triangles below shows a fact family. Write 2 multiplication and 2 division facts for each family. The first one has been done for you.

<p>example</p>  $2 \times 4 = 8$ $4 \times 2 = 8$ $8 \div 2 = 4$ $8 \div 4 = 2$	<p>a</p> 
<p>b</p> 	<p>c</p> 
<p>d</p> 	<p>e</p> 
<p>f</p> 	<p>g</p> 

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Independent Worksheet 2 Fact Family Triangles (cont.)

2 Several Fact Families went to the amusement park. One member of each family got lost. Write in the missing member of each family. The first one has been done for you.

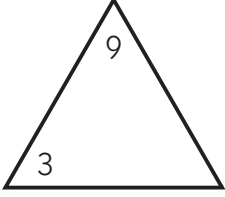
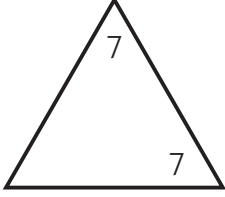
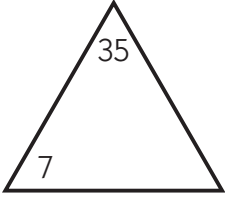
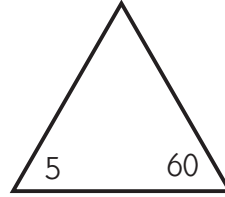
<p>example</p>  <p>Write in 6 because $6 \times 8 = 48$</p>	<p>a</p>  <p>Hint: 3 times what equals 12?</p>
<p>b</p> 	<p>c</p> 
<p>d</p> 	<p>e</p> 
<p>f</p> 	<p>g</p> 

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NAME _____

DATE _____

Independent Worksheet 2 Fact Family Triangles (cont.)

h 	i 
j 	k 

**CHALLENGE**

3 Ten of the Fact Families for numbers to 100 have “twins” or family members with the same number. One of these families is $6 \times 6 = 36$ and $36 \div 6 = 6$. Another is $3 \times 3 = 9$ and $9 \div 3 = 3$. List all ten of the Fact Families whose numbers are 100 or less that have twins. Circle the Family that has triplets. Record at least 2 patterns you notice in the Families.

NAME _____

DATE _____

Set A2 ★ Independent Worksheet 3



INDEPENDENT WORKSHEET

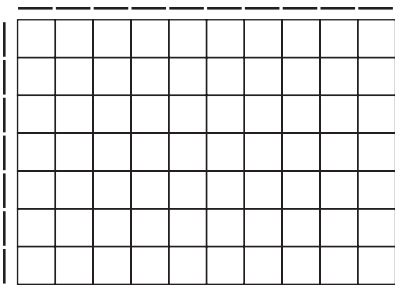
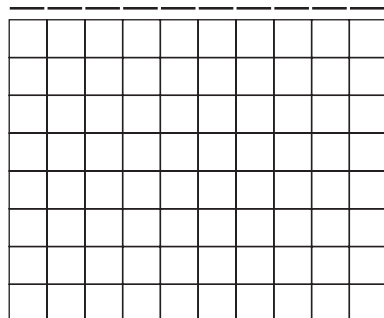
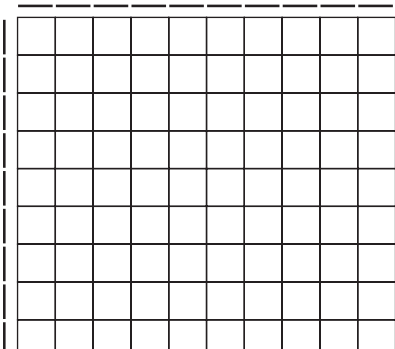
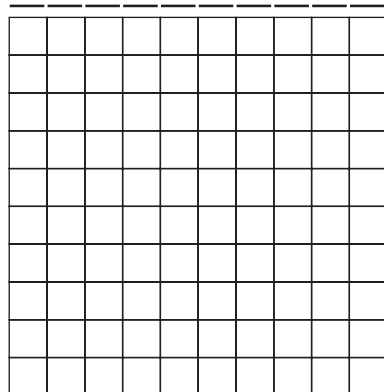
Fact Families for the Tens

1 Write the fact families for each array. The first one has been done for you.

<p>example</p> <div style="display: flex; align-items: center; margin-bottom: 10px;"> <div style="border: 1px solid black; width: 100px; height: 20px; margin-right: 10px;"></div> <div style="margin-left: 10px;"> $1 \times 10 = 10$ $10 \times 1 = 10$ $10 \div 1 = 10$ $10 \div 10 = 1$ </div> </div>	<p>a</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div>
<p>b</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div>	<p>c</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div>
<p>d</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div>	<p>e</p> <div style="border: 1px solid black; width: 100px; height: 20px; margin-bottom: 10px;"></div>

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Independent Worksheet 3 Fact Families for the Tens (cont.)

f 	g 
h 	i 

2 Describe the pattern for multiplying any number by 10.



CHALLENGE

3 Describe the pattern for multiplying any number by 100.

4 Describe the pattern for multiplying any number by 1000.

NAME _____

DATE _____

Set A2 ★ Independent Worksheet 4



INDEPENDENT WORKSHEET

Multiplying by One Hundred

1 Complete the following equations.

a $2 \times 100 =$ _____	b $100 \times 5 =$ _____	c $7 \times 100 =$ _____
d $\begin{array}{r} 100 \\ \times 8 \\ \hline \end{array}$	e $\begin{array}{r} 100 \\ \times 3 \\ \hline \end{array}$	f $100 \times$ _____ $= 900$

2 Brandon says that to multiply any number by 100, you just add 2 zeros to the end of the number. Do you agree? Why or why not?

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Independent Worksheet 4 Multiplying by One Hundred (cont.)**3** Complete the following equations.

a $35 \times 100 = \underline{\hspace{2cm}}$	b $\begin{array}{r} 100 \\ \times 26 \\ \hline \end{array}$	c $52 \times 100 = \underline{\hspace{2cm}}$
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**CHALLENGE****4** Complete the following equations.

a $\begin{array}{r} 100 \\ \times 100 \\ \hline \end{array}$	b $\underline{\hspace{2cm}} \times 100 = 3,900$	c $100 \times \underline{\hspace{2cm}} = 9,100$
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