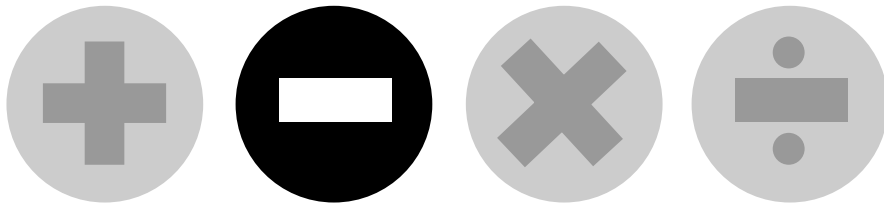


# THINKING STRATEGIES: SUBTRACTION

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BUILDING MASTERY OF SUBTRACTION FACTS

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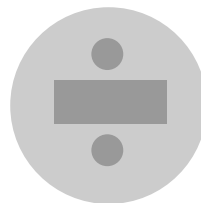
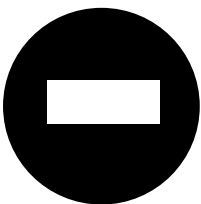


**CELIA BARON**



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# LESSON 3F: ZANY TABLE WITH SUMS LESS THAN 10

## TEACHER LESSON

The only facts with sums less than or equal to 10 that students have not yet been introduced to in the program are the facts  $8 - 4$ ,  $9 - 4$ , and  $9 - 5$ . These facts are introduced in this lesson.

### Modelling Facts

Present the fact  $4 + 4$  to the students. Remind the students that facts with the same addends are called *double facts*. Double facts can be completed with special pictures. The special picture for the fact  $4 + 4$  is a spider with 4 legs on each side.

Have the students name the related subtraction fact for the addition fact  $4 + 4 = 8$ .

■  $8 - 4 = 4$

Have students note that the fact family for a double fact consists of just two number sentences rather than four.

**Note:** Double facts with sums greater than 10 will be considered in Level 5.

### Applying Thinking Strategies

Suggest the students complete the fact  $8 - 4$  using the think-addition strategy as follows:

**8 - 4**

- Think-Addition:

4 and what makes 8?

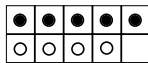
$4 + 4 = 8$

SO,  $8 - 4 = 4$

**Note:** Students can also complete this fact using helping facts such as  $10 - 4$ .

### Modelling Facts

Present the fact  $5 + 4$  to the students. Have the students model the fact with a ten-frame mat and counters.



There are 5 counters in the first row, and 4 counters in the second row. There is 1 square in the ten-frame that is not filled in.

Have the students name the related subtraction facts for the addition fact  $5 + 4 = 9$ .

$9 - 4 = 5$  and  $9 - 5 = 4$

## Applying Thinking Strategies

Present the fact  $9 - 4$  to the students. Ask them to explain their thinking strategies for completing the fact.

**9 - 4**

- Think-Addition:

4 and what makes 9?

$4 + 5 = 9$

SO,  $9 - 4 = 5$

**Note:** Students can use the addition sentence  $4 + 4 = 8$  to help them find the missing addend.

- Helping Fact:

Compare  $9 - 4$  to  $10 - 4$ .

$9 - 4$  is one less than  $10 - 4$ .

$10 - 4 = 6$

SO,  $9 - 4 = 5$

- Helping Fact:

Compare  $9 - 4$  to  $8 - 4$ .

$9 - 4$  is one more than  $8 - 4$ .

$8 - 4 = 4$

SO,  $9 - 4 = 5$

**Note:** Students can also complete this fact by picturing the ten-frame.

Have the students complete the subtraction partner fact  $9 - 5$  with similar thinking strategies.

## Encouraging Class Discussion

Engaging students in whole-class discussions is an integral part of the program. Prompts for encouraging class discussions can be found on page 2 of the Introduction.

## INTRODUCING THE STUDENT ACTIVITY SHEET

Distribute a copy of the sheet, Zany Table, to each student. Read the instructions aloud as a class, and have the students complete the activity.

## COMPLETING THE GRID

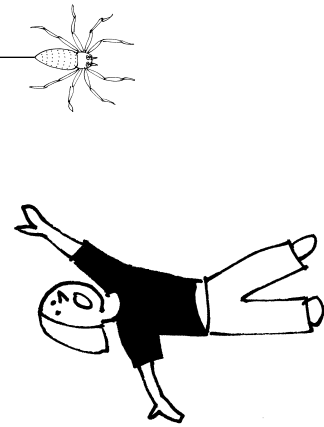
Have the students shade in their addition/subtraction grid for facts with sums less than or equal to 10.

## POWER FACTS

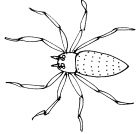
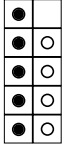

Have students practice the third set of Power Facts at least once a day (pages 148-149). They can also continue to practice the first two sets of Power Facts. Students can practice in class or at home.

# Zany Table

Sample Pages



The addition/subtraction buddy is standing beside a spider. The spider is a special picture that can help you complete the fact  $8 - 4$ . The ten-frame can help you complete the facts  $9 - 5$  and  $9 - 4$ . Complete the table, and then explain your thinking strategies at the bottom of the page.

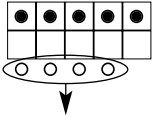
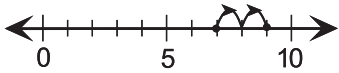
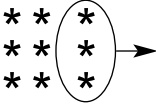
Subtraction Fact	Think-Addition	Picture	Addition Sentence	Subtraction Sentence
8 - 4	4 and what makes 8?			
9 - 5				
9 - 4				

Explain your thinking strategies for completing the subtraction facts  $8 - 4$  and  $9 - 5$ .

# Level 3 Mystery Number Challenge

Complete the facts. Then, read the clue in each box, and find the fact that matches it. Place each completed fact into the box with its matching clue. To find the MYSTERY NUMBER, add the three answers in each row and the three answers in each column. Remember, rows go across the page, and columns go down the page.

$\begin{array}{r} 10 \\ -3 \end{array}$	$\begin{array}{r} 8 \\ -8 \end{array}$	$\begin{array}{r} 9 \\ -7 \end{array}$	$\begin{array}{r} 10 \\ -6 \end{array}$	$\begin{array}{r} 9 \\ -3 \end{array}$	$\begin{array}{r} 10 \\ -2 \end{array}$	$\begin{array}{r} 9 \\ -0 \end{array}$	$\begin{array}{r} 7 \\ -6 \end{array}$	$\begin{array}{r} 9 \\ -4 \end{array}$
---	--	--	---	--	---	--	--	--

<p>This fact has the greatest difference.</p>	<p>In this fact, the top number and the bottom number are next-door number neighbours.</p>	<p>This fact can be completed by thinking, "6 and what makes 10?"</p>	= _____
<p>This fact is shown with the following picture:</p> 	<p>This fact can be completed by thinking "3 and what makes 10?"</p>	<p>This fact can be completed with the following picture:</p> 	= _____
<p>In this fact, the top number and the bottom number are the same.</p>	<p>This fact is shown with the following picture:</p> 	<p>This fact has the greatest even difference.</p>	= _____

= \_\_\_\_\_

= \_\_\_\_\_

= \_\_\_\_\_

**SELF-ASSESSMENT PROGRESS REPORT FOR STUDENTS • LEVEL 3**

Complete each fact, and explain your thinking strategy. Place a check mark beside each fact you have mastered.

$7 - 4 =$

$10 - 9 =$

$9 - 5 =$

$9 - 7 =$

$5 - 5 =$

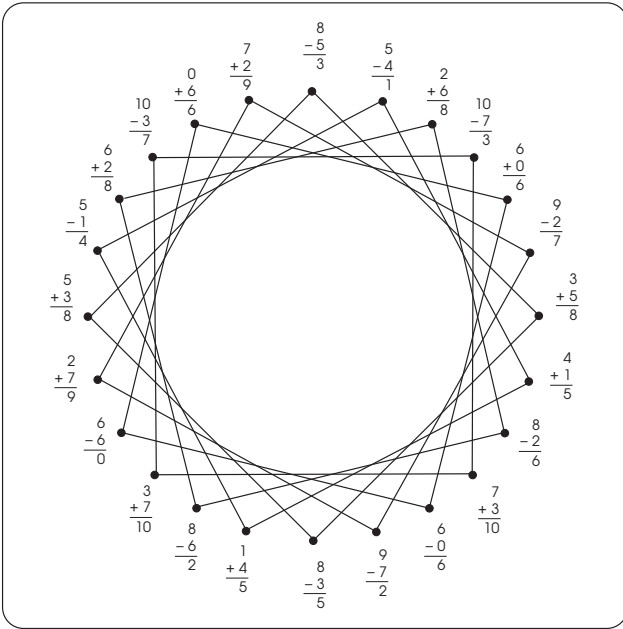
$6 - 4 =$

$7 - 6 =$

$8 - 4 =$

$9 - 6 =$

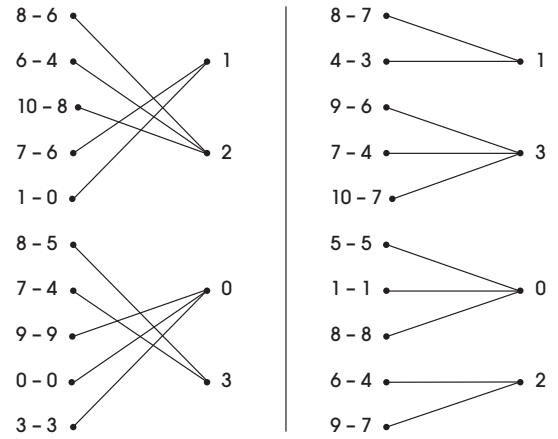
Sample Pages



Name the facts in the fact family containing  $8 - 5 = 3$ .

- $8 - 5 = 3$
- $8 - 3 = 5$
- $5 + 3 = 8$
- $3 + 5 = 8$

Lesson 3D, page 59



What thinking strategy did you use for completing the fact  $8 - 6$ ? Explain in words and with a picture. Name a related addition fact.

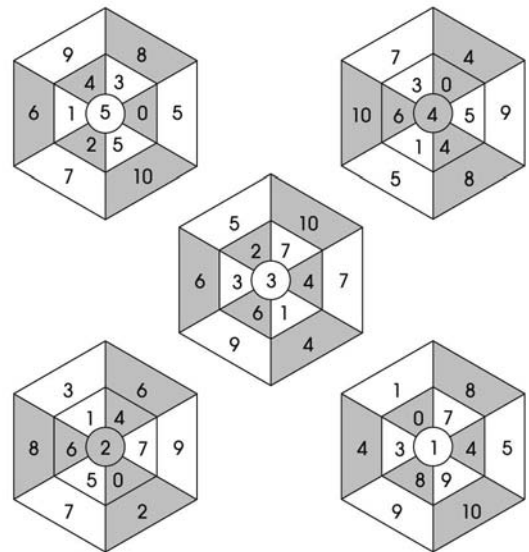
Answers will vary.

Lesson 3E, page 61

Subtraction Fact	Think-Addition	Picture	Addition Sentence	Subtraction Sentence
$8 - 4$	4 and what makes 8?		$4 + 4 = 8$	$8 - 4 = 4$
$9 - 5$	5 and what makes 9?		$5 + 4 = 9$	$9 - 5 = 4$
$9 - 4$	4 and what makes 9?		$4 + 5 = 9$	$9 - 4 = 5$

Explain your thinking strategies for completing the subtraction facts  $8 - 4$  and  $9 - 5$ . Answers will vary.

Lesson 3F, page 63



Lesson 3G, page 65