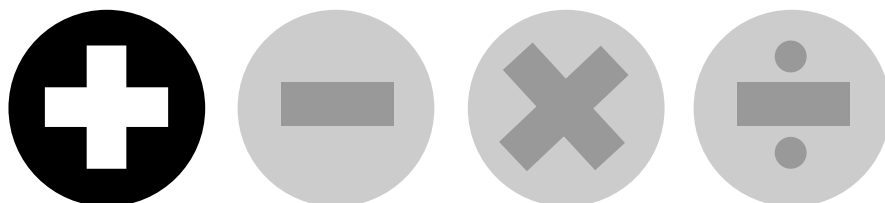


# THINKING STRATEGIES: ADDITION

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BUILDING MASTERY OF ADDITION FACTS

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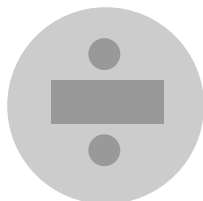
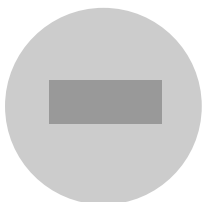
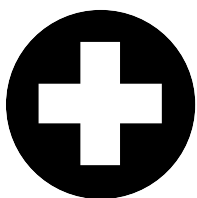


**CELIA BARON**



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# LESSON 2C: SECRET MESSAGE WITH 9 AND 10

## TEACHER LESSON

In this lesson, students practice the strategy for facts with an addend of 10 and the build-10 strategy for facts with an addend of 9. The students are also introduced to the helping fact thinking strategy.

### Practicing the Thinking Strategy: Addend of 10

Present the addition fact  $10 + 7$  to the students. Have the students note that the fact has an addend of 10. Ask them to complete this fact and explain their thinking strategy.

$10 + 7$  (addend of 10)

- Pattern of 10:

A set of 10 and a set of 7 is 17.  
SO,  $10 + 7 = 17$

### Practicing the Thinking Strategy: Build-10

Present the addition fact  $9 + 7$  to the students. Have the students note that the fact has an addend of 9. Ask them to complete this fact using the build-10 thinking strategy.

$9 + 7$  (addend of 9)

- Build-10:

Build 10 by taking 1 from 7 and giving it to 9.  
 $9 + 1 = 10$  and  $7 - 1 = 6$   
 $10 + 6 = 16$   
SO,  $9 + 7 = 16$

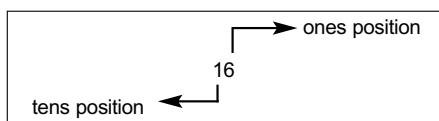
### Comparing Facts with an Addend of 10 and an Addend of 9

Present students with the following addition sentences having addends of 10 and addends of 9.

$10 + 1 = 11$	$9 + 1 = 10$
$10 + 2 = 12$	$9 + 2 = 11$
$10 + 3 = 13$	$9 + 3 = 12$
$10 + 4 = 14$	$9 + 4 = 13$
$10 + 5 = 15$	$9 + 5 = 14$
$10 + 6 = 16$	$9 + 6 = 15$
$10 + 7 = 17$	$9 + 7 = 16$
$10 + 8 = 18$	$9 + 8 = 17$
$10 + 9 = 19$	$9 + 9 = 18$

Ask the students to look for patterns. Introduce the following if the students do not suggest them:

- The sum of a fact with an addend of 10 has a 1 in the tens position, and the numeral in the ones position is the same as the number being added with 10.



- The sum of a fact with an addend of 9 has a 1 in the tens position, and the numeral in the ones position is one less than the number being added with 9.
- The sum of a fact with an addend of 9 is one less than its corresponding fact with an addend of 10.

### Introducing the Thinking Strategy: Helping Fact

Any fact that a student has mastered can be used to help complete a fact not yet mastered. Students can complete facts with an addend of 9 by using corresponding facts with an addend of 10 as helping facts.

Consider the fact  $9 + 7$ . Have the students compare the addition fact  $9 + 7$  to the addition fact  $10 + 7$ . The number 9 is one less than the 10, and the sum of  $9 + 7$  is one less than the sum of  $10 + 7$ .

$9 + 7$  (addend of 9)

- Helping Fact:

$10 + 7 = 17$   
 $9 = 10 - 1$   
 $17 - 1 = 16$   
SO,  $9 + 7 = 16$

### Ten-Frame Flash

To provide students with more practice with finding one less than a number between 10 and 20, play Ten-Frame Flash. Show students two ten-frames (make sure one ten-frame has 10 dots). Ask the students for the number that is one less than the number shown on the ten-frames. Have them answer with their response cards.

**Important!** Continue to provide students with activities that extend the one-less-than relationship to the numbers 10 to 20.

### 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, Secret Message, to each student. Read the instructions aloud as a class, and have the students complete the activity.

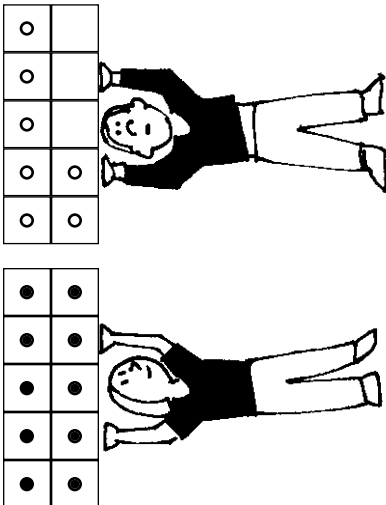
**Note:** Remind students to fill in each blank with the letter that matches the sum, not the letter that matches the question number. (See page 24 for more detail, if necessary.)

### COMPLETING THE ADDITION GRID

Have the students fill in their addition grid for facts with an addend of 9. They can fill in both a row and a column.

# Secret Message

Complete the addition facts. The first fact is completed:  $10 + 7 = 17$ . Check the Code Key. The letter above 17 is T. Write the letter T in the first blank. The second fact is completed:  $9 + 7 = 16$ . Check the Code Key. The letter above 16 is H. Write the letter H in the second blank. Continue with each addition fact until you have filled in the remaining blanks with a letter from the Code Key. When you are finished, you will find the secret message.



Where does a horse eat its morning cereal?

- ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨ ⑩ ⑪ ⑫ ⑬ ⑭ ⑮ ⑯ ⑰ ⑱

Code Key	S	L	B	E	R	K	H	T	A	F
	9	10	12	13	14	15	16	17	18	19

- ①  $\begin{array}{r} 10 \\ +7 \\ \hline 17 \end{array}$       ②  $\begin{array}{r} 9 \\ +7 \\ \hline 16 \end{array}$       ③  $\begin{array}{r} 3 \\ +10 \\ \hline 13 \end{array}$       ④  $\begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$       ⑤  $\begin{array}{r} 10 \\ +4 \\ \hline 14 \end{array}$       ⑥  $\begin{array}{r} 9 \\ +4 \\ \hline 13 \end{array}$
- ⑦  $\begin{array}{r} 8 \\ +10 \\ \hline 18 \end{array}$       ⑧  $\begin{array}{r} 6 \\ +9 \\ \hline 15 \end{array}$       ⑨  $\begin{array}{r} 10 \\ +9 \\ \hline 19 \end{array}$       ⑩  $\begin{array}{r} 9 \\ +9 \\ \hline 18 \end{array}$       ⑪  $\begin{array}{r} 9 \\ +0 \\ \hline 9 \end{array}$       ⑫  $\begin{array}{r} 8 \\ +9 \\ \hline 17 \end{array}$
- ⑬  $\begin{array}{r} 0 \\ +9 \\ \hline 9 \end{array}$       ⑭  $\begin{array}{r} 9 \\ +8 \\ \hline 17 \end{array}$       ⑮  $\begin{array}{r} 9 \\ +9 \\ \hline 18 \end{array}$       ⑯  $\begin{array}{r} 3 \\ +9 \\ \hline 12 \end{array}$       ⑰  $\begin{array}{r} 9 \\ +1 \\ \hline 10 \end{array}$       ⑱  $\begin{array}{r} 4 \\ +9 \\ \hline 13 \end{array}$

# Level 2 Number Challenge

Complete the addition facts below. 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.

$$\begin{array}{r} 7 \\ + 9 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$$

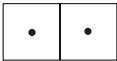
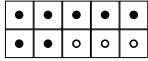

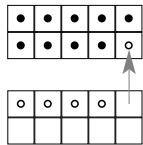
$$\begin{array}{r} 1 \\ + 1 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 0 \\ + 0 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ + 2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ + 2 \\ \hline \end{array}$$

<p>This fact is shown with the following picture:</p> 	<p>This fact joins 10 and 2.</p>	<p>This fact is shown with the following picture:</p> 
<p>This fact has the greatest sum.</p>	<p>The sum of this fact is two more than 6.</p>	<p>This fact has the least sum.</p>
<p>This fact is shown with the following picture:</p> 	<p>The sum of this fact is one more than 3.</p>	<p>This fact is shown with the following picture:</p> 

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# PARTNER BINGO 5

Find a partner.

Answer question 1, and cross out one of the answers on your card (Partner #1).

Have your partner answer question 1, and cross out one of the answers on his/her card (Partner #2).

Take turns answering questions and crossing out one answer each time.

The winner is the first one who has a row, column, or diagonal crossed out.

## Partner #1

- |                   |                    |
|-------------------|--------------------|
| ① $6 + 9 =$ _____ | ⑨ $9 + 8 =$ _____  |
| ② $9 + 4 =$ _____ | ⑩ $10 + 9 =$ _____ |
| ③ $9 + 8 =$ _____ | ⑪ $9 + 7 =$ _____  |
| ④ $5 + 9 =$ _____ | ⑫ $3 + 9 =$ _____  |
| ⑤ $9 + 9 =$ _____ | ⑬ $9 + 6 =$ _____  |
| ⑥ $7 + 9 =$ _____ | ⑭ $5 + 9 =$ _____  |
| ⑦ $9 + 3 =$ _____ | ⑮ $4 + 9 =$ _____  |
| ⑧ $9 + 6 =$ _____ | ⑯ $9 + 1 =$ _____  |

## Partner #2

- |                   |                   |
|-------------------|-------------------|
| ① $9 + 9 =$ _____ | ⑨ $9 + 3 =$ _____ |
| ② $7 + 9 =$ _____ | ⑩ $9 + 9 =$ _____ |
| ③ $3 + 9 =$ _____ | ⑪ $4 + 9 =$ _____ |
| ④ $9 + 6 =$ _____ | ⑫ $7 + 9 =$ _____ |
| ⑤ $9 + 4 =$ _____ | ⑬ $9 + 5 =$ _____ |
| ⑥ $8 + 9 =$ _____ | ⑭ $3 + 9 =$ _____ |
| ⑦ $2 + 9 =$ _____ | ⑮ $6 + 9 =$ _____ |
| ⑧ $5 + 9 =$ _____ | ⑯ $9 + 0 =$ _____ |

## Partner #1

13	14	16	9	11
10	15	9	12	15
17	16	+	14	9
12	19	13	11	16
18	11	15	14	17

## Partner #2

13	9	10	12	15
15	16	13	19	14
14	10	+	16	11
19	12	15	17	18
18	14	12	13	10

# Level 2

<p>Sample Pages</p> $\begin{array}{r} 9 \\ + 2 \\ \hline \end{array}$		
		$14$
	$12$	$\begin{array}{r} 9 \\ + 5 \\ \hline \end{array}$
$10$	$\begin{array}{r} 9 \\ + 3 \\ \hline \end{array}$	
$\begin{array}{r} 9 \\ + 1 \\ \hline \end{array}$		
		$13$
	$11$	$\begin{array}{r} 9 \\ + 4 \\ \hline \end{array}$