

# Master Make Ten with 8

4-group Math™ is a visual and kinesthetic method designed to develop number sense and fact fluency. It uses a unique set of number patterns to make math easy and fun.

For more information visit our website at [4groupmath.com](http://4groupmath.com).

**Lynn Kuske, M.Ed.**



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# Introduction to 4-group Math

Mission statement: Creating a new generation of kids who love math.

To be successful in mathematics children must have **rapid** recall and know with **accuracy** and **confidence** their addition and subtraction facts.

## Subitizing

The science behind 4-group Math is called *subitizing* (pronounced *sue-bi-tie-zing*): the brain's **rapid**, **accurate** and **confident** judgment of the quantity of a set of objects without counting.

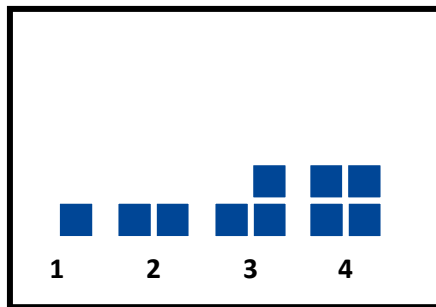
Young children can *subitize* a set of four objects when those objects are arranged in a square pattern.



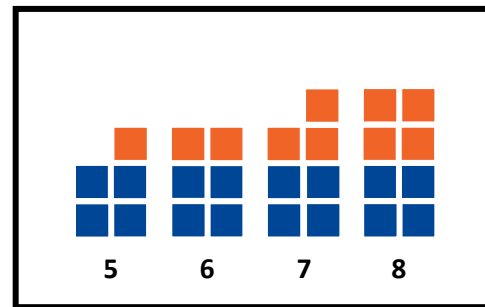
4-group Math, a visual and tactile model, uses this innate ability as an anchor to conceptualize the quantity of numbers.

## The 4-group Number Patterns

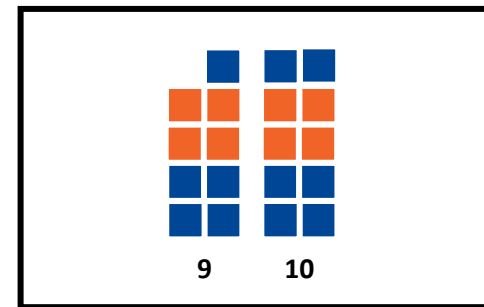
The 4-group Number Patterns 1-4 are easy to see and *subitize*.



1, 2, 3, & 4 are attached to another 4-pattern to create 5, 6, 7 and 8.



The 1- and 2- patterns are attached to the 8-pattern to create 9 and 10.



## Place Value with the 4-group Number Patterns

The 4-group Number Patterns are unique in that the visual pattern for each numeral stays the same across place values.

The pattern for three tens visually looks the same as the pattern for three ones.

FIGURE 1 shows the representation for the number thirty-three.

The patterns for three hundred and three tenths (not shown) look the same as the pattern for three ones.

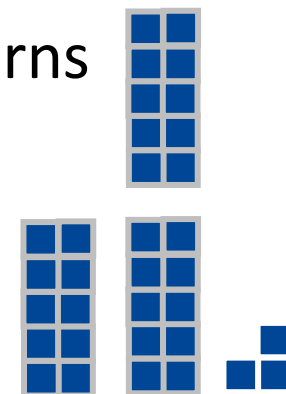
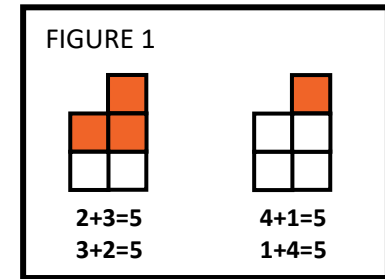


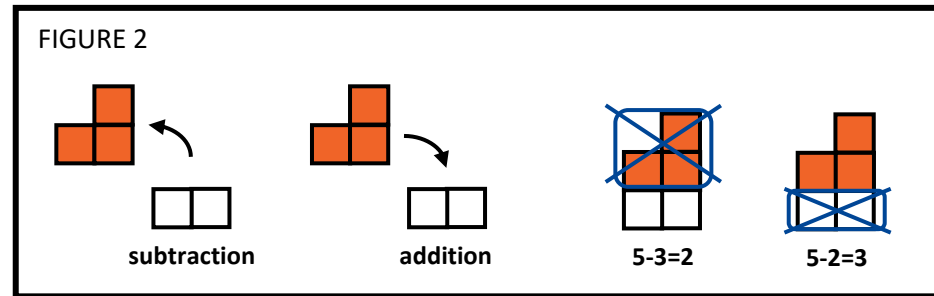
FIGURE 1

# Addition and Subtraction

The 4-group Number Patterns are unique in that they are summative. They fit together like a puzzle to form the 4-group Number Pattern for their sum. For example; a 3-pattern and a 2-pattern combine to make the 5-pattern while the 4-pattern and 1-pattern combine to make the same 5-pattern. (FIGURE 1)



The 4-group Number Patterns are unique in that subtraction is modeled as the exact opposite of addition. (FIGURE 2)



# 4-group Math Counting Order

4-group Math uses a unique counting order that starts at the bottom and counts up from right to left. We have found that children who count in this manner, make fewer mistakes in their counting.

We build the number patterns starting at the bottom and going up: right, left; right, left.

10	9
8	7
6	5
4	3
2	1

Children can stop their counting at any time and see the 4-group Number Pattern for the quantity.

•	••	•••	••••	•••••
1	2	3	4	5

When we add we regroup to the left.

1	←
2	8
+	3 4
	2

We build right to left because numbers get bigger as the digits *move to the left*. For example, when 9 becomes a 10, the group moves left into the tens place.

••	•
••	••
••	••
••	••
••	••
1	0

•	
••	
••	
••	
••	
••	
0	9

# Activity 1 – Building MAKE TEN Directions

**OBJECTIVE:** Build addition equations with 8. MAKE TEN to form the answer.

**MATERIALS:** 4-group Number Blocks: one 1-block, two 2-blocks, one 3-block, one 4-block, one 5-block, one 6-block, one 7-block, and two 8 blocks

Worksheet – Building MAKE TEN with 8

**GROUP:** Independent, 1 on 1, or small group

**DIRECTIONS:** Place an 8-block in the left side ten-frame. Place a 5-block to the right. (FIGURE 1)  
 Think, “What does eight need to MAKE TEN?” Two  
 Trade your 5-block into the “bank” (the rest of the blocks) and take out a 2-block and a 3-block. (FIGURE 2)  
 Place these blocks to the right to remake the pattern for five. (FIGURE 3)  
 Move the 2-block to MAKE TEN with the eight. “See” your answer (13). Write your answer in the equation. (FIGURE 4)  
 Continue for the rest of the equations: building 8 with a 2-block and a 6-block; 6 with a 2-block and a 4-block, etc.  
 When you complete this activity, put a sticker in the Sticker space.

FIGURE 1

Building MAKE TEN with 8

8 + 5 = \_\_  
 8 + 8 = \_\_  
 8 + 6 = \_\_  
 8 + 4 = \_\_  
 8 + 7 = \_\_  
 8 + 3 = \_\_

FIGURE 2

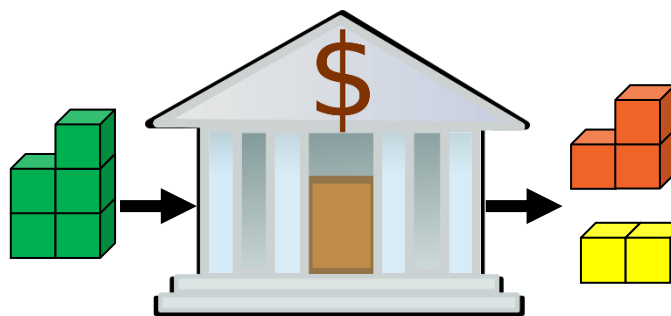


FIGURE 3

Building MAKE TEN with 8

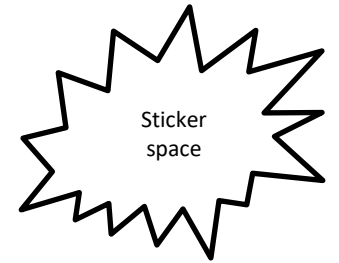
8 + 5 = \_\_  
 8 + 8 = \_\_  
 8 + 6 = \_\_  
 8 + 4 = \_\_  
 8 + 7 = \_\_  
 8 + 3 = \_\_

FIGURE 4

Building MAKE TEN with 8

8 + 5 = 13  
 8 + 8 = \_\_  
 8 + 6 = \_\_  
 8 + 4 = \_\_  
 8 + 7 = \_\_  
 8 + 3 = \_\_

# Building MAKE TEN with 8





$$\begin{array}{r} 8 + 5 = \underline{\quad} \\ 8 + 8 = \underline{\quad} \\ 8 + 6 = \underline{\quad} \\ 8 + 4 = \underline{\quad} \\ 8 + 7 = \underline{\quad} \\ 8 + 3 = \underline{\quad} \end{array}$$





# Activity 2 – Paper MAKE TEN Directions

**OBJECTIVE:** Build addition equations with 8. MAKE TEN to form the answer.

**MATERIALS:** Paper 4-group Number Patterns 3-8  
Two Worksheets for MAKE TEN with 8  
Glue stick, pencil, scissors

**GROUP:** Independent, 1 on 1, or small group

**DIRECTIONS:** Cut out the paper 4-group Number Patterns 3-8 from the following page.  
On the Worksheets for MAKE TEN with 8, build the equations in any order, except numerical order.  
The example below shows  $8 + 5 = 13$ .

Place the paper 5-pattern to the right of the 8-pattern. Write the number 5 in the equation. (FIGURE 1)

Cut a 2-pattern off the 5-pattern. Always leave a 4-group Number Pattern. (FIGURE 2)

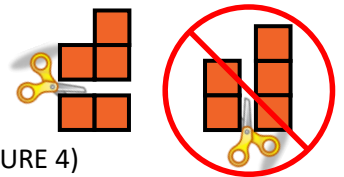
Place the 2-pattern with the 8-pattern to MAKE TEN. (FIGURE 3)

Glue the pattern pieces to the paper. “See” your answer (13). Write your answer in the equation. (FIGURE 4)

Repeat for  $8+3$ ,  $8+4$ ,  $8+6$ ,  $8+7$ , and  $8+8$ . Each time cut off a 2-pattern to go with the 8-pattern to MAKE TEN.

Cover up the equations and looking just at the pictures, tell your equations to a friend, i.e.  $8 + 5 = 13$ .

When you complete this activity, put a sticker in the Sticker space.



**FIGURE 2**

**FIGURE 1**

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$        $8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$        $8 + \underline{\quad} = \underline{\quad}$

**FIGURE 3**

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$        $8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$        $8 + \underline{\quad} = \underline{\quad}$

**FIGURE 4**

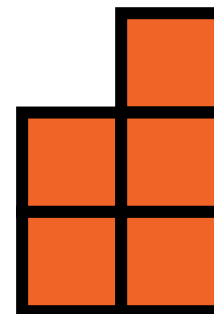
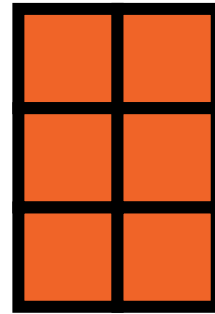
Worksheet for MAKE TEN with 8

$8 + 5 = 13$        $8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$        $8 + \underline{\quad} = \underline{\quad}$

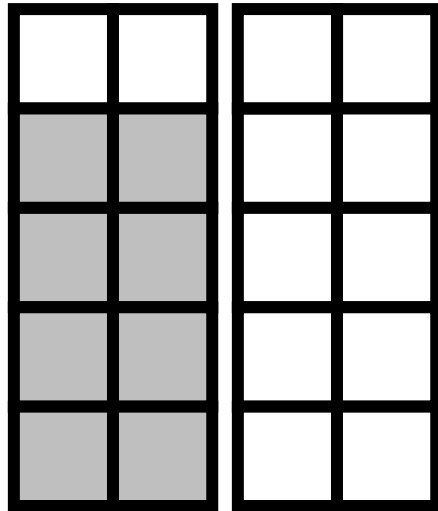
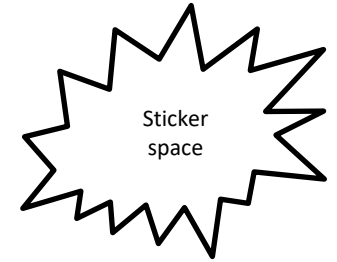


# Paper 4-group Number Patterns 3-8

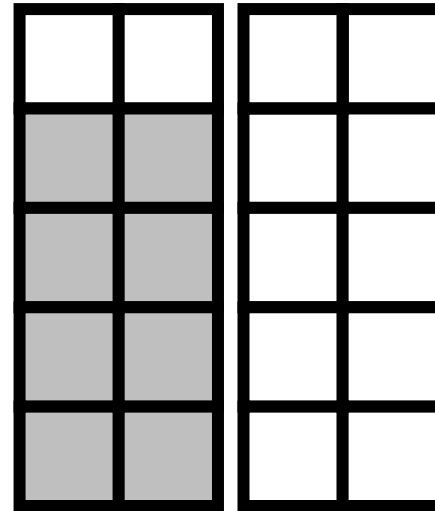




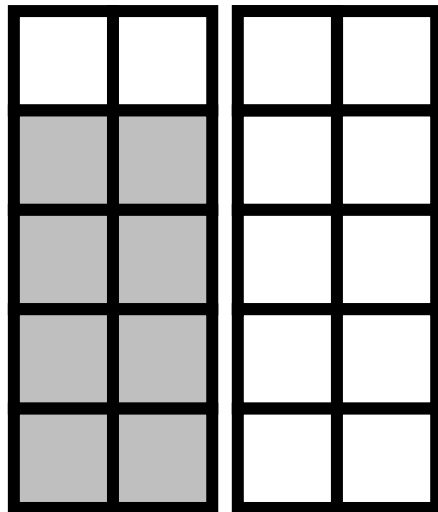
# Worksheet for MAKE TEN with 8



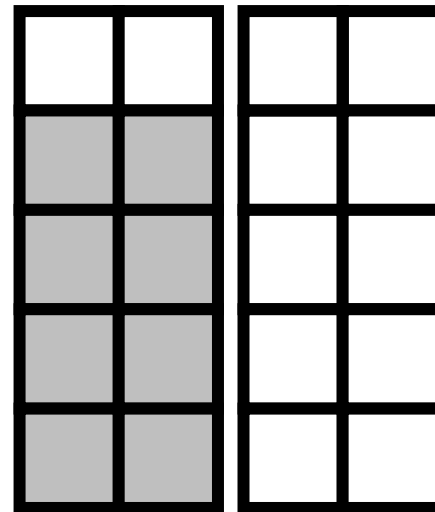
$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

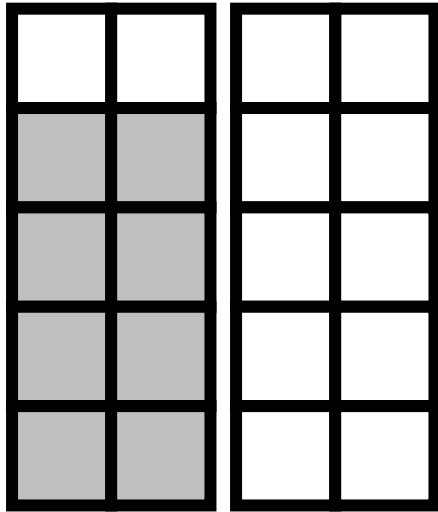


$$8 + \underline{\quad} = \underline{\quad}$$

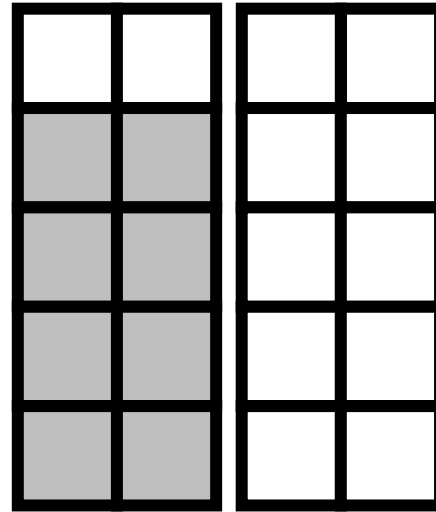


$$8 + \underline{\quad} = \underline{\quad}$$

# Worksheet for MAKE TEN with 8



$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

# Activity 3 – Coloring MAKE TEN Directions

**OBJECTIVE:** Color and recite addition equations with 8. MAKE TEN to form the answer.

**MATERIALS:** One color crayon, marker, stamp, or dot art  
Pencil  
The two Worksheets for MAKE TEN with 8

**GROUP:** Independent, 1 on 1, or small group

**DIRECTIONS:** On the Worksheets for MAKE TEN with 8, make the equations in any order, except numerical order.  
The example below shows  $8 + 5 = 13$ .

Color the 5-pattern to the right of the 8-pattern. Write the number 5 in the equation. (FIGURE 1)

Draw an arrow to show the 2-pattern that goes with the 8-pattern to MAKE TEN. (FIGURE 2)

Always leave a 4-group Number Pattern.

Write your answer in the equation. (FIGURE 2)

Repeat for  $8+3$ ,  $8+4$ ,  $8+6$ ,  $8+7$ , and  $8+8$ . Each time draw an arrow to show that 2 goes with 8 to MAKE TEN.

Cover up the equations and looking just at the pictures, tell your equations to a friend.

When you complete this activity, put a sticker in the Sticker space.

FIGURE 1

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

FIGURE 2

Worksheet for MAKE TEN with 8

$8 + 5 = 13$

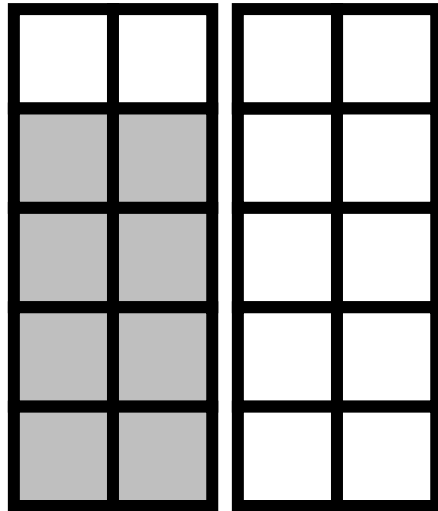
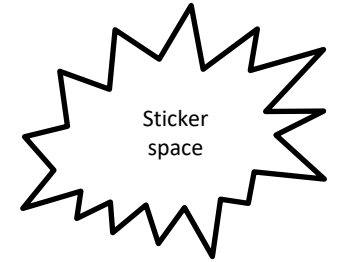
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$8 + \underline{\quad} = \underline{\quad}$

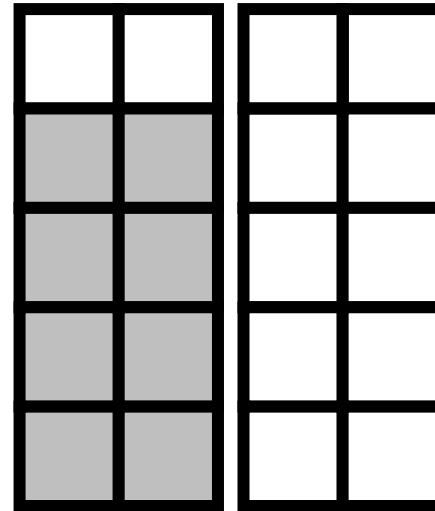




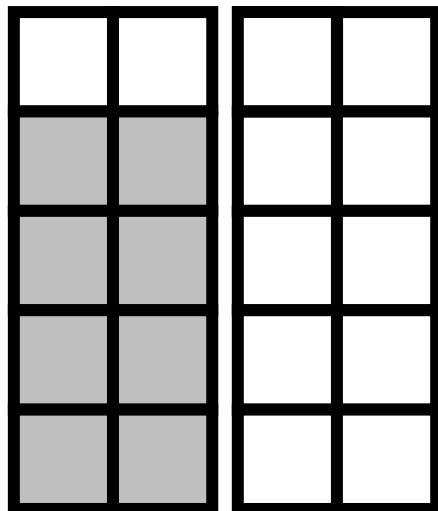
# Worksheet for MAKE TEN with 8



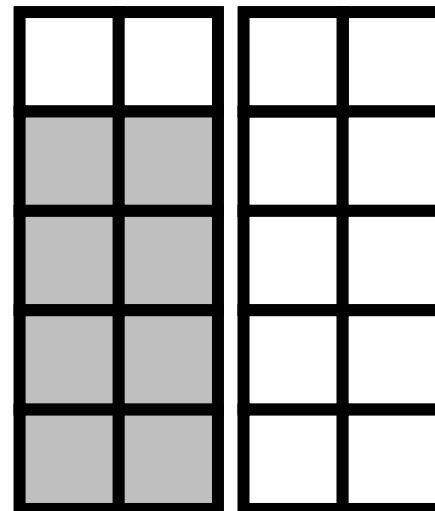
$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

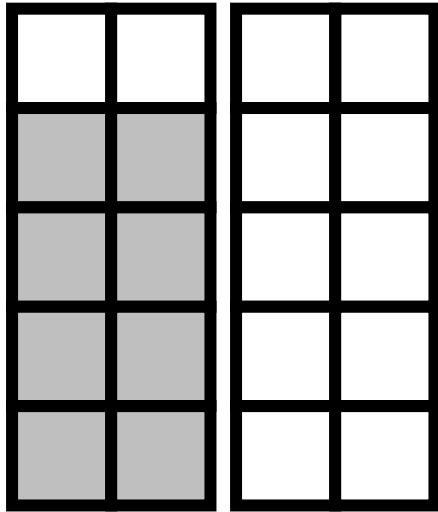


$$8 + \underline{\quad} = \underline{\quad}$$

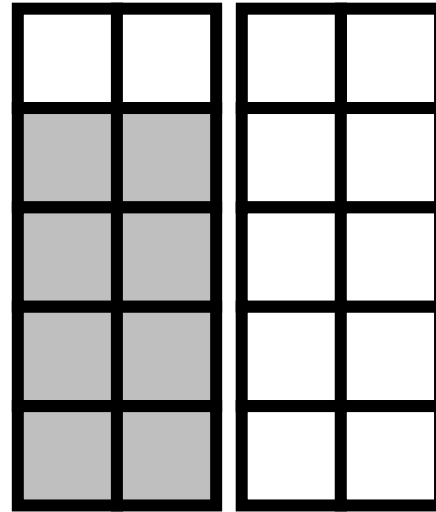


$$8 + \underline{\quad} = \underline{\quad}$$

# Worksheet for MAKE TEN with 8



$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

# Activity 4 – Build and Color MAKE TEN Directions

**OBJECTIVE:** Build, color and recite addition equations with 8. MAKE TEN to form the answer.

**MATERIALS:** One color of a small manipulative; cubes, buttons, candies, crackers  
 One crayon or marker to match the manipulative’s color. Pencil  
 The two Worksheets for MAKE TEN with 8

**GROUP:** Independent, 1 on 1, or small group

**DIRECTIONS:** On the Worksheets for MAKE TEN with 8, build the equations in any order, except numerical order.  
 The example below shows  $8 + 5 = 13$ .  
 Using your manipulative, build a 5-pattern to the right of the 8-pattern. Write the number 5 in the equation. (FIGURE 1)  
 Move a 2-pattern of the manipulative to go with the 8-pattern to MAKE TEN. (FIGURE 2)  
 Always leave a 4-group Number Pattern.  
 Then, push the items off each square as you record your work with your crayon. (FIGURE 3)  
 “See” your answer (13). Write your answer in the equation. (FIGURE 4)  
 Repeat for  $8+3$ ,  $8+4$ ,  $8+6$ ,  $8+7$ , and  $8+8$ . Build in any order, except numerical order.  
 Cover up the equations and looking just at the pictures, tell your equations to a friend.  
 When you complete this activity, put a sticker in the Sticker space.

FIGURE 1

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

FIGURE 2

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

FIGURE 3

Worksheet for MAKE TEN with 8

$8 + 5 = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

$8 + \underline{\quad} = \underline{\quad}$

FIGURE 4

Worksheet for MAKE TEN with 8

$8 + 5 = 13$

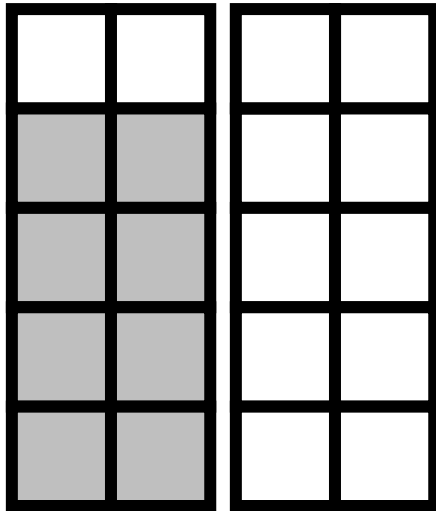
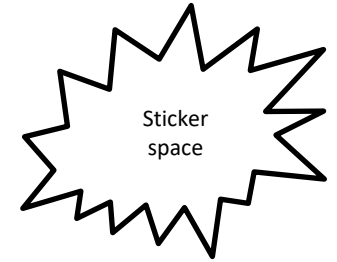
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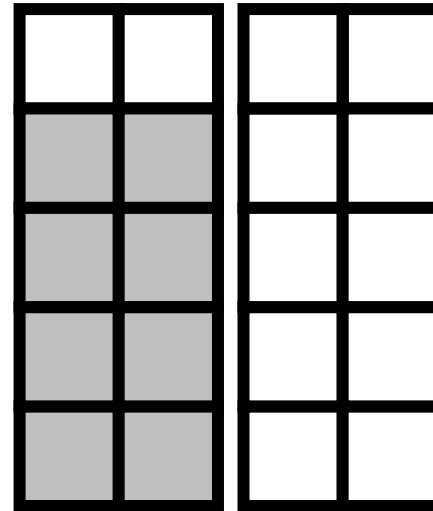
$8 + \underline{\quad} = \underline{\quad}$



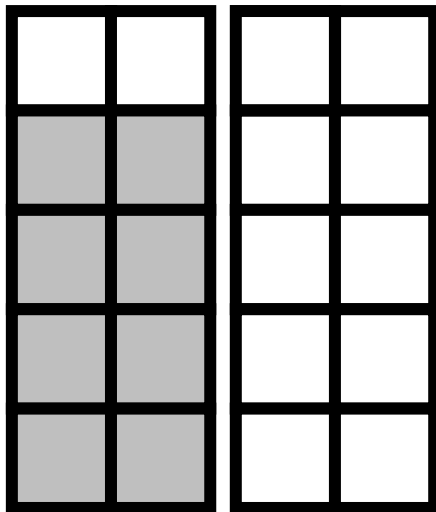
# Worksheet for MAKE TEN with 8



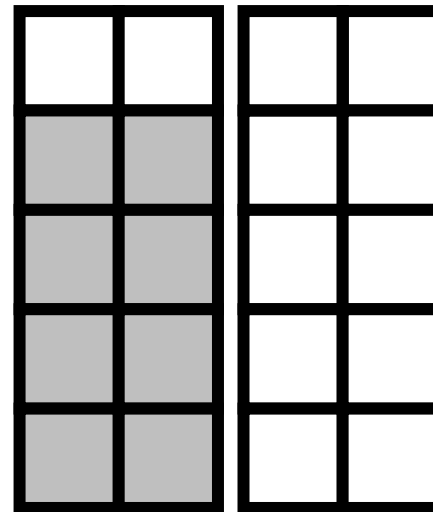
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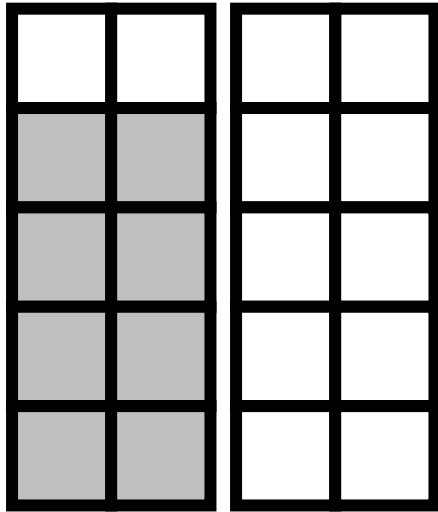


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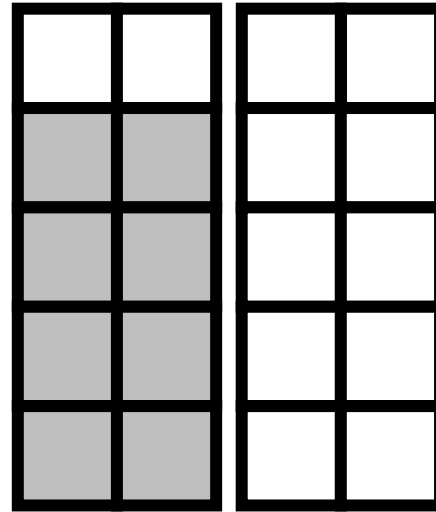


$$8 + \underline{\quad} = \underline{\quad}$$

# Worksheet for MAKE TEN with 8



$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

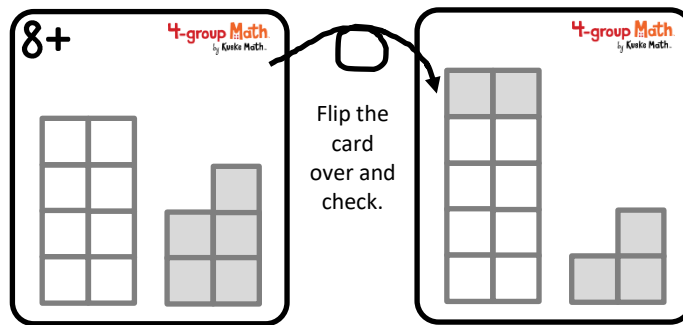
# Activity 5 – Flip Cards for MAKE TEN Directions

**OBJECTIVE:** Give the answer to the equation shown on the **8+** side of each card.

**MATERIALS:** Activity 5 – Flip Cards for MAKE TEN with 8

**GROUP:** Independent, 1 on 1, or small group

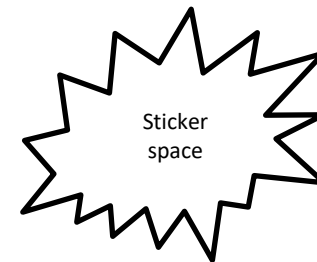
**DIRECTIONS:** Cut out the six cards on the following pages. Lay the cards on the table with the side facing up that has an **8+** in the corner. Look at one card. Say the equation you see, i.e. “Eight plus five.” Imagine moving a 2-pattern over to the 8-pattern to MAKE TEN. Say the whole equation, i.e. “Eight plus five equals thirteen.” Flip the card over and check your answer. Continue until you give the correct answer for each card. When you complete this activity, put a sticker in the Sticker space.



Look and Say:  
“Eight plus five  
equals thirteen.”

See  
the answer  
**13.**

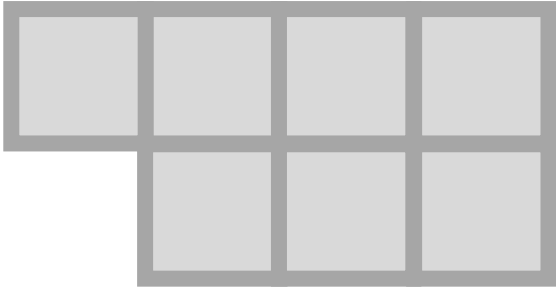
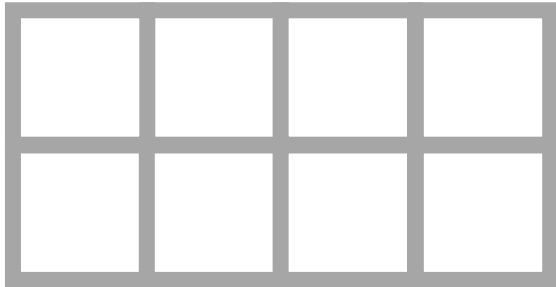
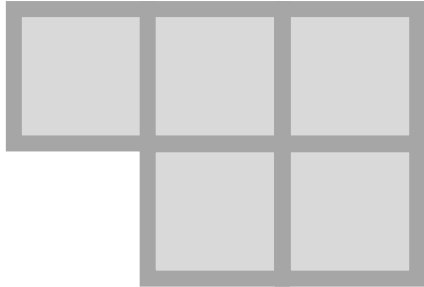
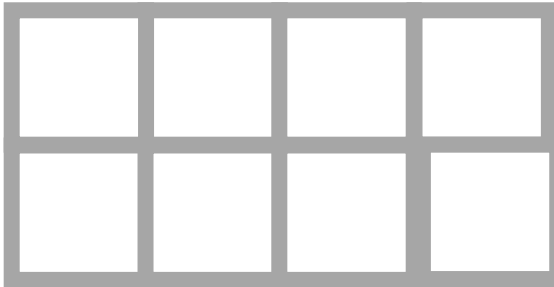
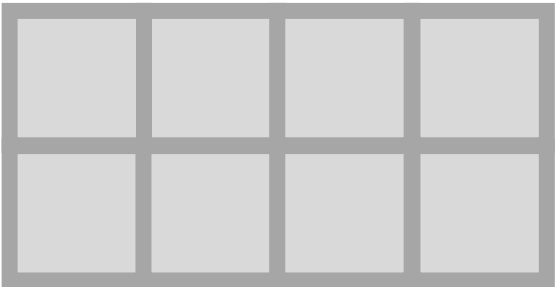
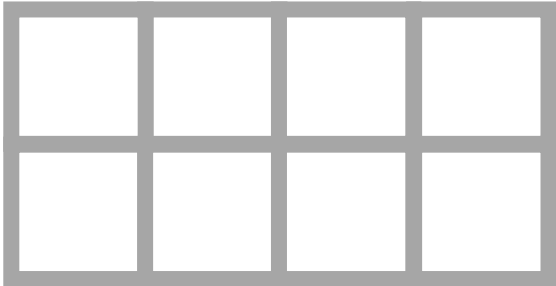
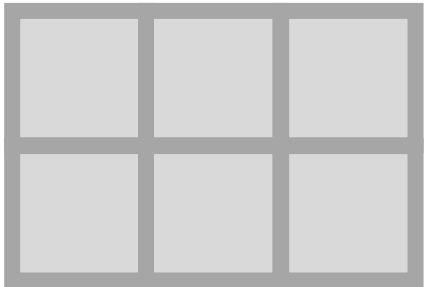
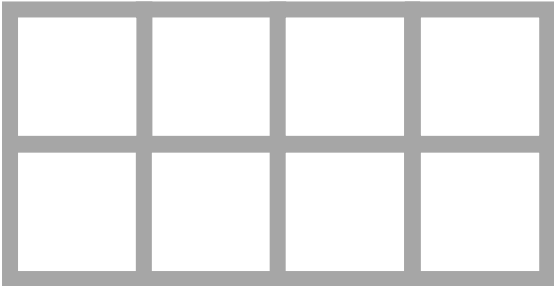
(One example is shown.)

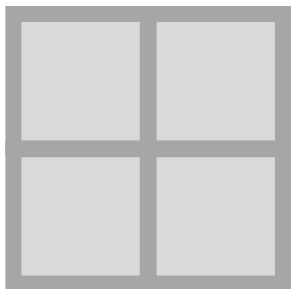
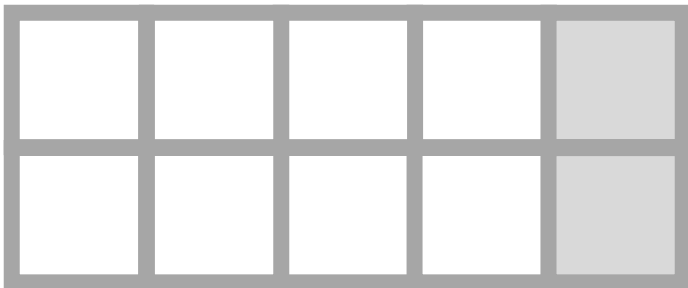
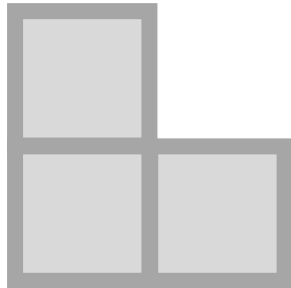
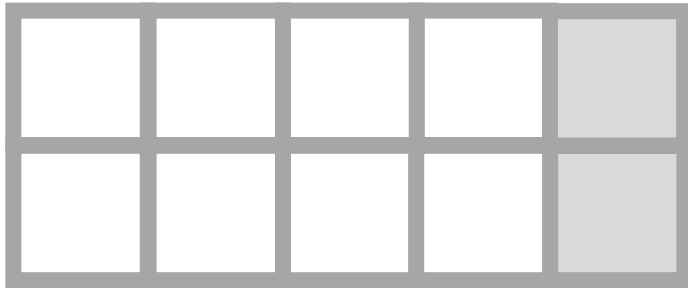






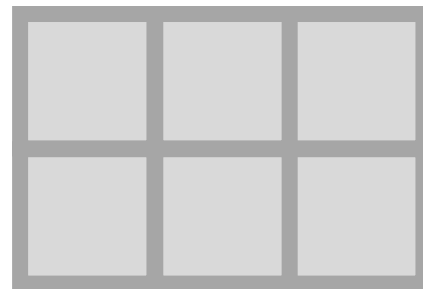
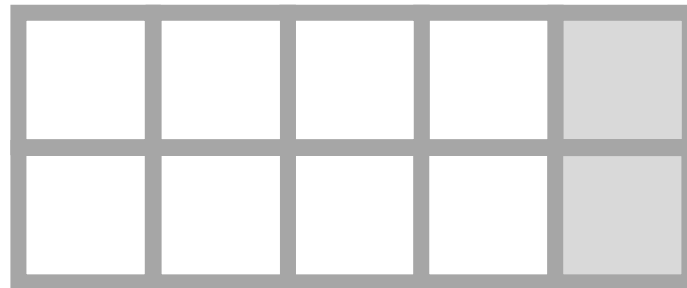
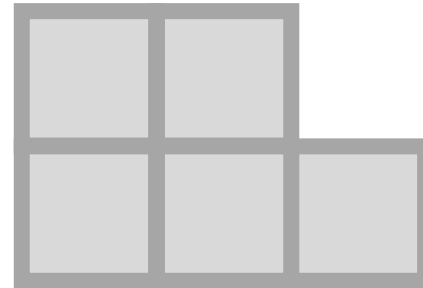
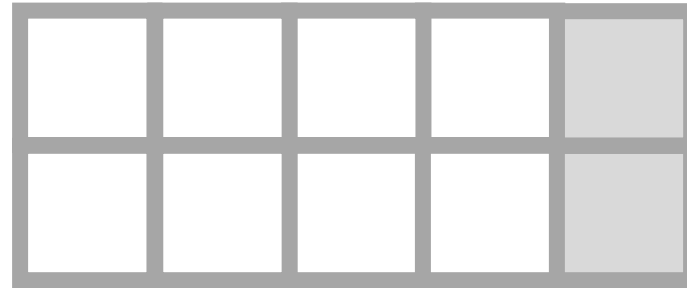
# Activity 5 – Flip Cards for MAKE TEN with 8

<p><b>4-group Math.</b> <small>by Kuske Math.</small></p>  <p><b>8+</b></p> 	<p><b>4-group Math.</b> <small>by Kuske Math.</small></p>  <p><b>8+</b></p> 
<p><b>4-group Math.</b> <small>by Kuske Math.</small></p>  <p><b>8+</b></p> 	<p><b>4-group Math.</b> <small>by Kuske Math.</small></p>  <p><b>8+</b></p> 



4-group Math  
by Kuske Math.

4-group Math  
by Kuske Math.



4-group Math  
by Kuske Math.

4-group Math  
by Kuske Math.

4-group Math  
by Kuske Math.

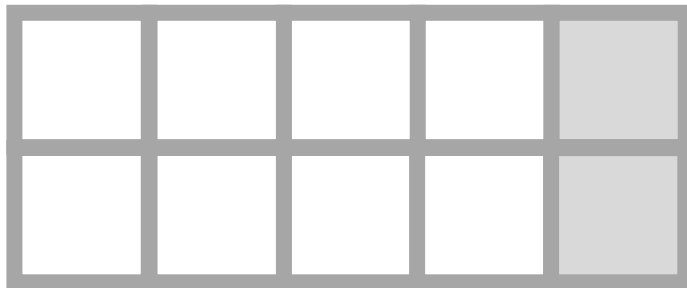
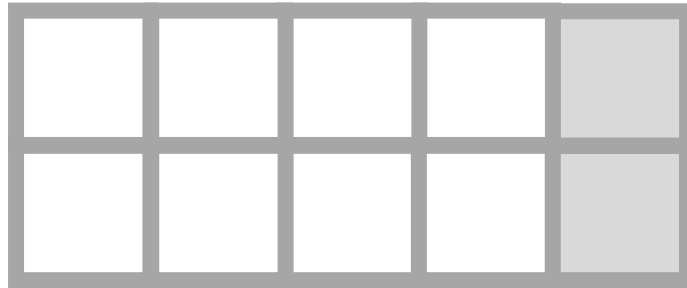
8+



4-group Math  
by Kuske Math.

8+





4-group Math  
by Kuske Math.

4-group Math  
by Kuske Math.

# Activities 6-8 – Practice MAKE TEN Directions

**OBJECTIVE:** Practice equations to MAKE TEN with 8

**MATERIALS:** Activities 6-8 – MAKE TEN with 8 Practice pages

**GROUP:** Independent, 1 on 1, or small group

**DIRECTIONS:** **ACTIVITY 6** (FIGURES 1 & 2)  
 With a pencil, color the 2-pattern to break off. Always leave a 4-group Number Pattern.  
 Draw an arrow from the 2-pattern to join the 8-pattern to MAKE TEN. Write your answer in the box.

**ACTIVITY 7** (FIGURE 3)  
 Show with numbers how you would break off a 2 to put with the 8 to MAKE TEN. Write your answer on the line.

**ACTIVITY 8** (FIGURE 4)  
 Think in your math mind how you would break off a 2 to put with the 8 to MAKE TEN. Write your answer under the line.

When you complete each activity, put a sticker in the Sticker space.

FIGURE 1

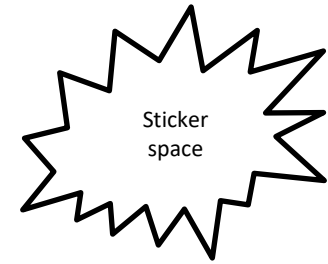
FIGURE 2

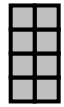

FIGURE 3

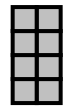

FIGURE 4



# Activity 6 – MAKE TEN with 8 Practice



With a pencil, color the 2-pattern to break off. Always leave a 4-group Number Pattern.  
 Draw an arrow from the 2-pattern to join the 8-pattern to MAKE TEN. Write your answer in the box.

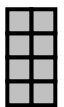



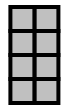

8   
 + 5   
 -----  
 13

8   
 + 6   
 -----

8   
 + 8   
 -----

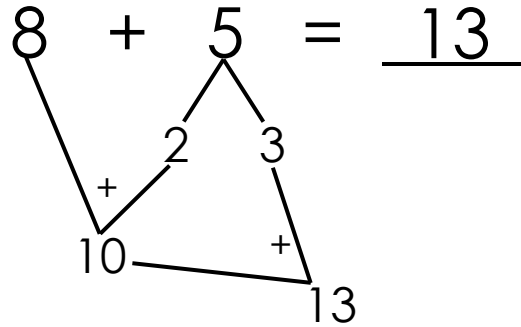
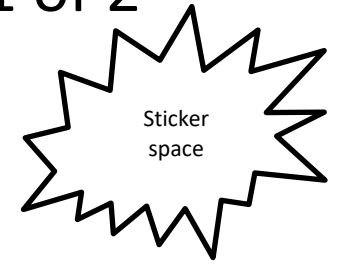
8   
 + 4   
 -----

8   
 + 3   
 -----

8   
 + 7   
 -----

# Activity 7 – MAKE TEN with 8 Practice, pg.1 of 2

Show with numbers how you would break off a 2 to put with the 8 to MAKE TEN. Write your answer on the line.



$8 + 3 = \underline{\quad}$

$8 + 8 = \underline{\quad}$

$8 + 6 = \underline{\quad}$

# Activity 7 – MAKE TEN with 8 Practice, pg.2 of 2

Show with numbers how you would break off a 2 to put with the 8 to MAKE TEN. Write your answer on the line.

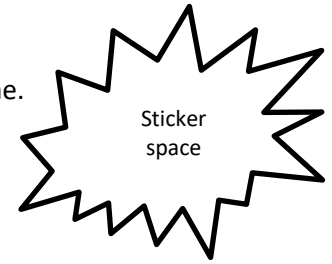
$8 + 4 = \underline{\quad}$

$8 + 7 = \underline{\quad}$



# Activity 8 – MAKE TEN with 8 Practice

Think in your math mind how you would break off a 2 to put with the 8 to MAKE TEN. Write your answer under the line.



$$\begin{array}{r} 8 \\ + 7 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 3 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 8 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 6 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ + 4 \\ \hline \end{array}$$



# Activity 9 – Assessment Directions

**OBJECTIVE:** Write and recite from memory equations to MAKE TEN with 8

**MATERIALS:** Activity 9 – Assessment Sheet or a blank piece of paper  
Pencil

**GROUP:** One child with teacher or another adult

**DIRECTIONS:** On the Assessment Sheet or a blank piece of paper, write from memory all the equations to MAKE TEN with 8. (FIGURE 1)  
Find an adult to “test” you.

The adult asks you to recite all the equations, in any order. (FIGURE 2)

Then, the adult says an equation and you complete the equation by supplying the answer. (FIGURE 3)

Continue until all equations are said.

If you pass, put a sticker in the Sticker space.

If you do not pass, practice a little more by repeating two activities from Activities 1-8.

FIGURE 1

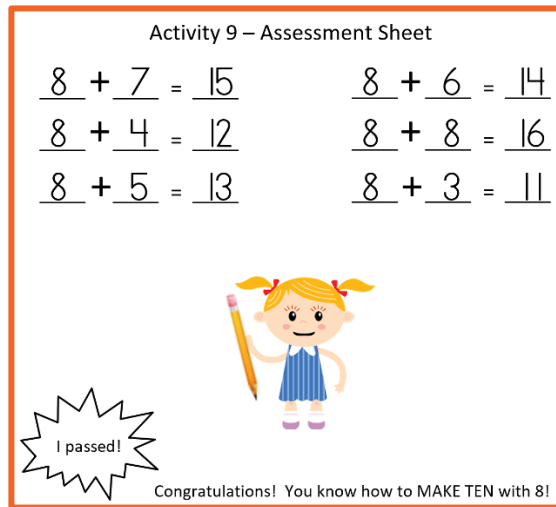


FIGURE 2

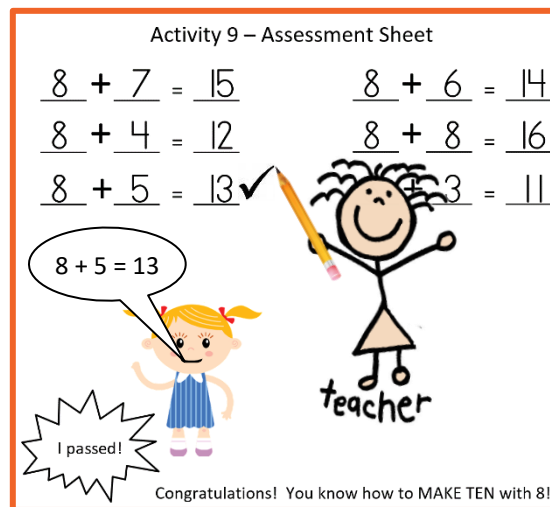
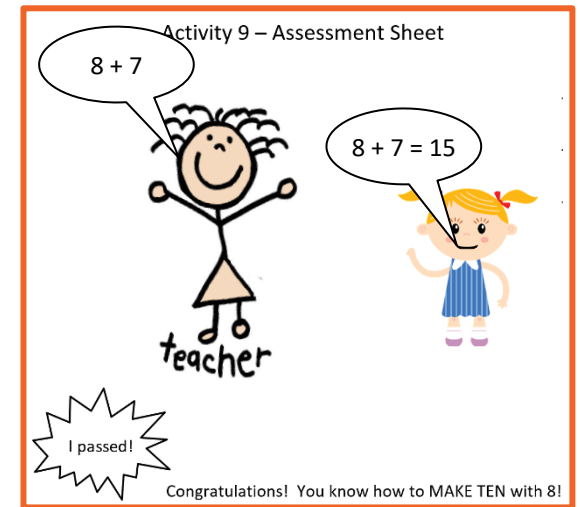


FIGURE 3



EXAMPLE:

The adult says, “*Eight plus seven*”

Child says, “*Eight plus seven equals fifteen.*”



## Activity 9 – Assessment Sheet

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

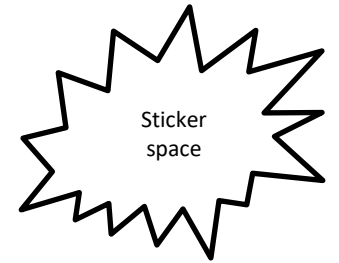
$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



Congratulations! You know how to MAKE TEN with 8.



# Building MAKE TEN with 8



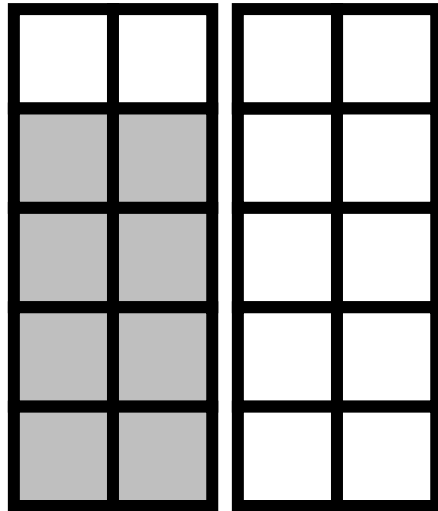
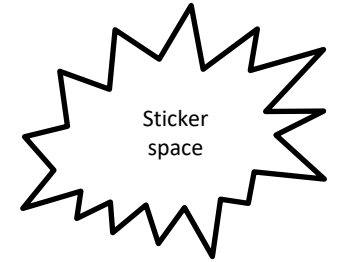


$$\begin{array}{r} 8 + 5 = \underline{\quad} \\ 8 + 8 = \underline{\quad} \\ 8 + 6 = \underline{\quad} \\ 8 + 4 = \underline{\quad} \\ 8 + 7 = \underline{\quad} \\ 8 + 3 = \underline{\quad} \end{array}$$

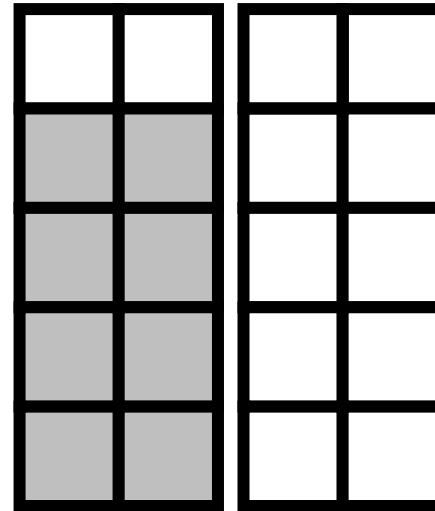




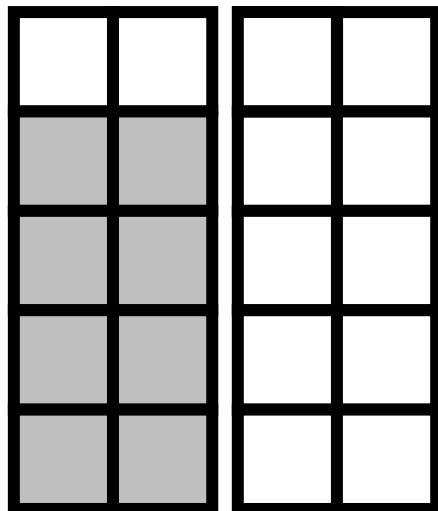
# Worksheet for MAKE TEN with 8



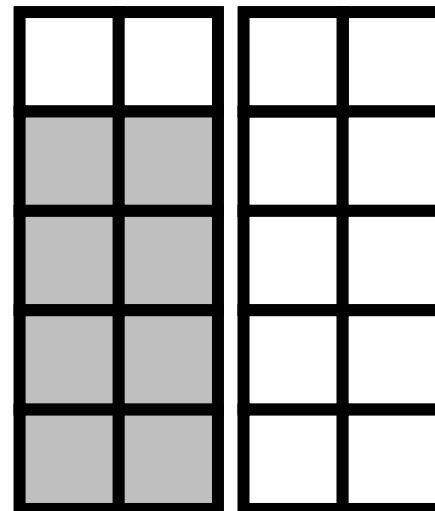
$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

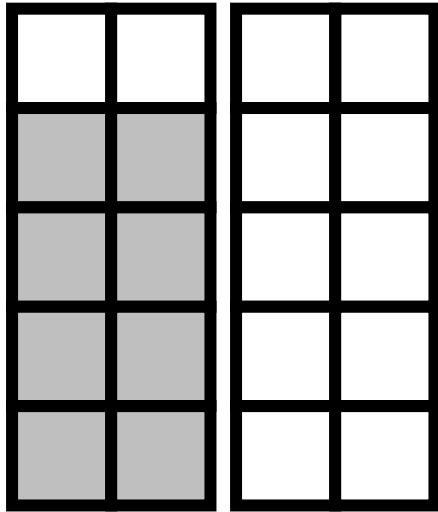


$$8 + \underline{\quad} = \underline{\quad}$$

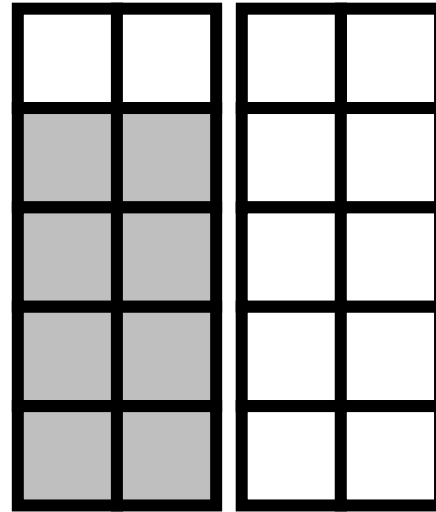


$$8 + \underline{\quad} = \underline{\quad}$$

# Worksheet for MAKE TEN with 8



$$8 + \underline{\quad} = \underline{\quad}$$



$$8 + \underline{\quad} = \underline{\quad}$$

# Activity 9 – Assessment Sheet

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$

$$\underline{\quad} + \underline{\quad} = \underline{\quad}$$



Congratulations! You know how to MAKE TEN with 8.