4-group Math™ by Kuske Math™

Master Subtracting 5

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.**

Lynn Kuske, M.Ed.

Level 5, Book 5 of 8

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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

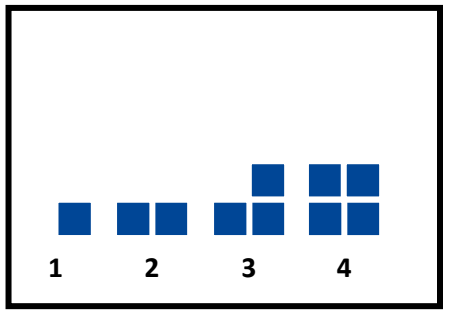
The science behind 4-group Math is called *subitizing* (pronounced *sue-bi-tie-zing*): the brain's **rapid**, **accurate** and **confident** judgment of the quantity of a set of objects without counting.

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

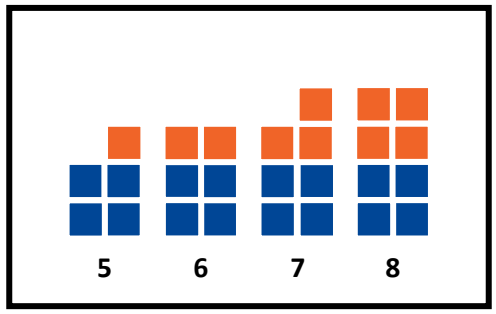
4-group Math, a visual and tactile model, uses this innate ability as an anchor to conceptualize the quantity of numbers.

The 4-group Number Patterns

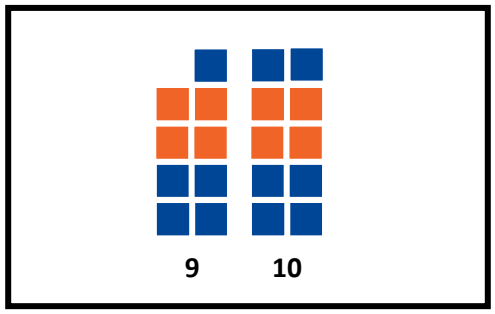
The 4-group Number Patterns 1-4 are easy to see and *subitize*.



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.

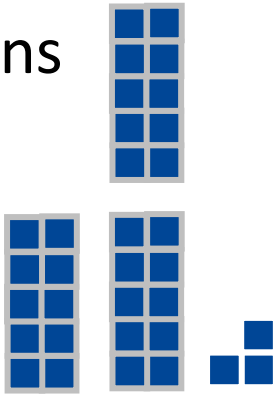


FIGURE 1

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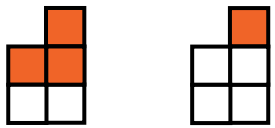
Addition and Subtraction

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)

FIGURE 1

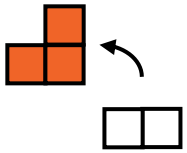


2+3=5
3+2=5

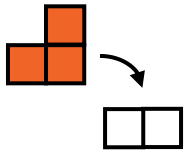
4+1=5
1+4=5

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

FIGURE 2



subtraction



addition

5-3=2

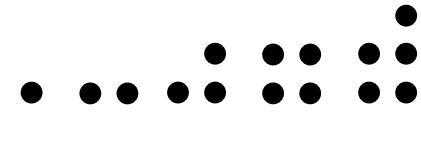
5-2=3

4-group Math Counting Order

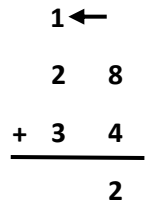
4-group Math uses a unique counting order that starts at the bottom and counts up from right to left. We have found that children who count in this manner, make fewer mistakes in their counting.

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

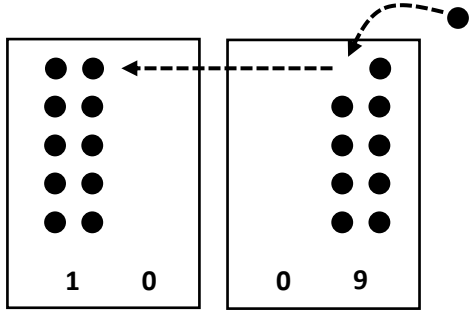
Children can stop their counting at any time and see the 4-group Number Pattern for the quantity.



When we add we regroup to the *left*.



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.



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Activity 1 – Building Subtraction Directions

OBJECTIVE: Build subtraction equations with 5. Subtract 5 from the 10 to form the answer.

MATERIALS: 4-group Number Blocks: one 1-block, one 2-block, one 3-block, one 4-block, and two 5-blocks
Worksheet – Building Subtract 5
Pencil

GROUP: Independent, 1 on 1, or small group

DIRECTIONS: Build the teen number in the ten-frames.
Use a 5-block and a 5-block in the left side ten-frame to make ten. Use a single block in the right side ten frame.
The example shows the set up for 14 – 5. (FIGURE 1)
Think, "Can I take 5 away from the 4?" No
Think, "So, I will take the 5 away from the 10." (FIGURE 2)
Taking 5 away from 10 always leaves 5's *"ten's partner"* which is 5.
Put the remaining blocks together to "*see*" your answer (9). Write your answer in the equation. (FIGURE 3)
Continue for the rest of the equations, always building the 10 with a 5-block and a 5-block.
When you complete this activity, put a sticker in the Sticker space.

"Ten's partners" are the combinations of two numbers which add up to ten:
(0,10) (1,9) (2,8) (3,7) (4,6) (5,5)

FIGURE 1

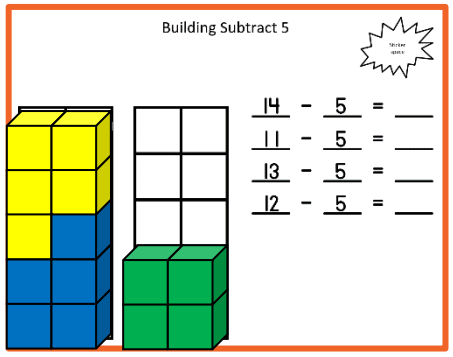


FIGURE 2

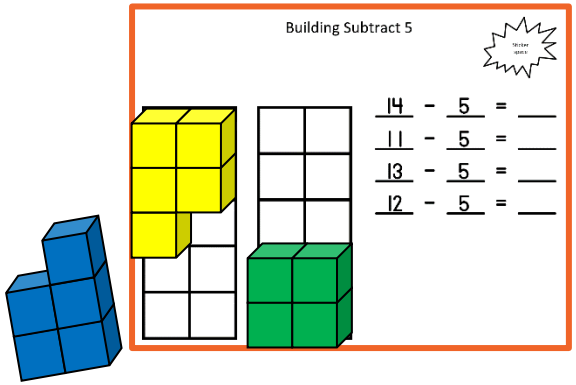
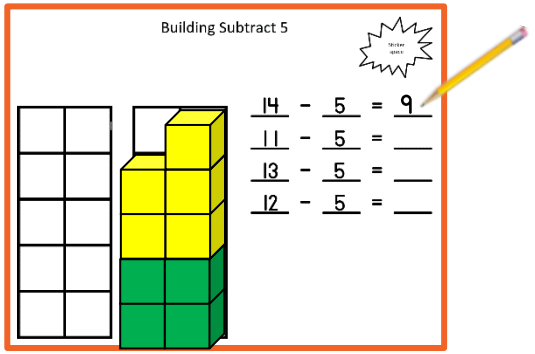


FIGURE 3



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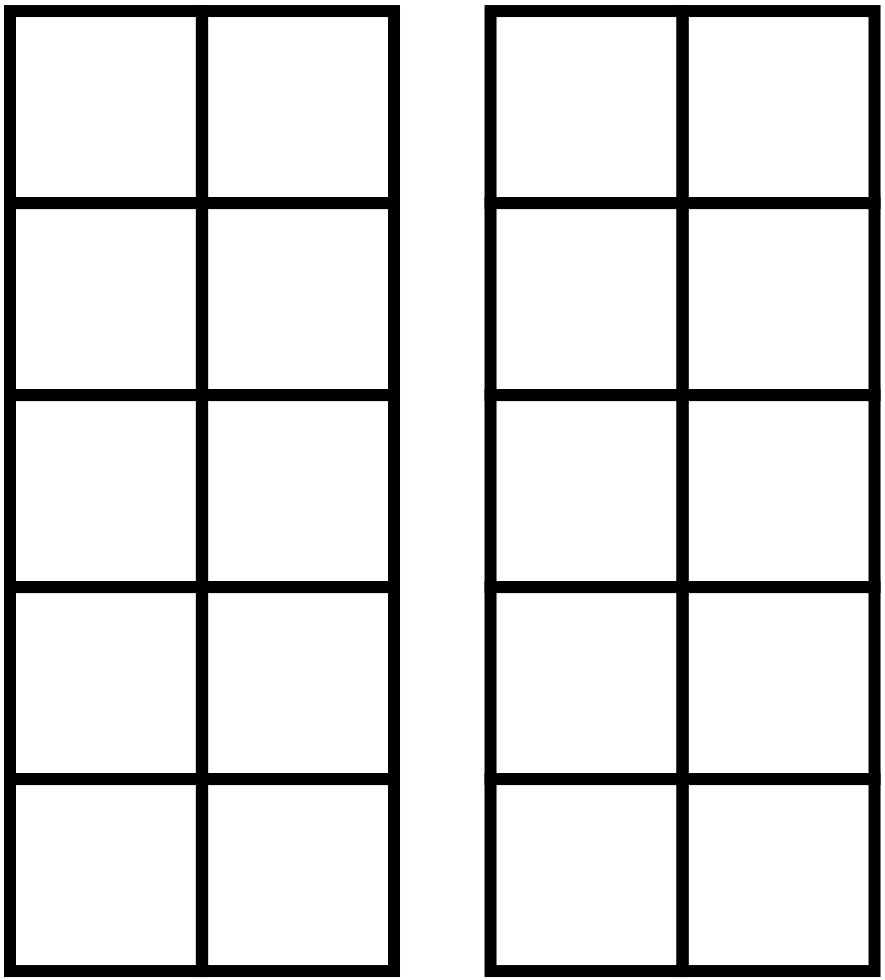
Building Subtract 5

Sticker space



14 − 5 = ___

11 − 5 = ___

13 − 5 = ___

12 − 5 = ___

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Activity 2 – Coloring Subtraction Directions

OBJECTIVE: Color subtraction equations with 5. Subtract 5 from the 10 to form the answer.

MATERIALS: Worksheet for Subtract 5
Crayon, pencil

GROUP: Independent, 1 on 1, or small group

DIRECTIONS: The example shows 14 – 5.
Look at the equation.
Think, "Can I take 5 away from the 4?" No
Think, "So, I will take the 5 away from the 10."
Color in the 5 that you would take away. Then "take it away" by crossing it off. (FIGURE 1)
Taking 5 away from 10 always leaves 5's "*ten's partner*" which is 5.
In your math mind, put the remaining blocks together to "*see*" your answer (9). Write your answer in the equation. (FIGURE 2)
Continue for the rest of the equations, always coloring in the 5 that you would take away and "taking it away" by crossing it off.
When you complete this activity, put a sticker in the Sticker space.

FIGURE 1

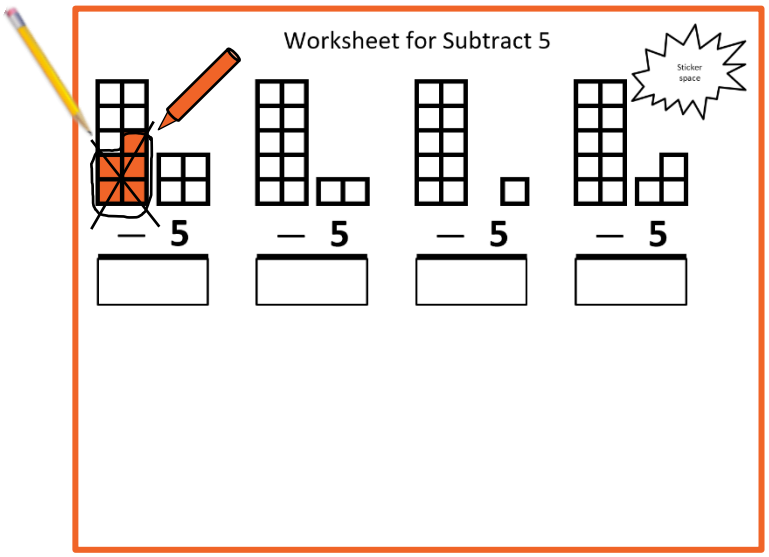
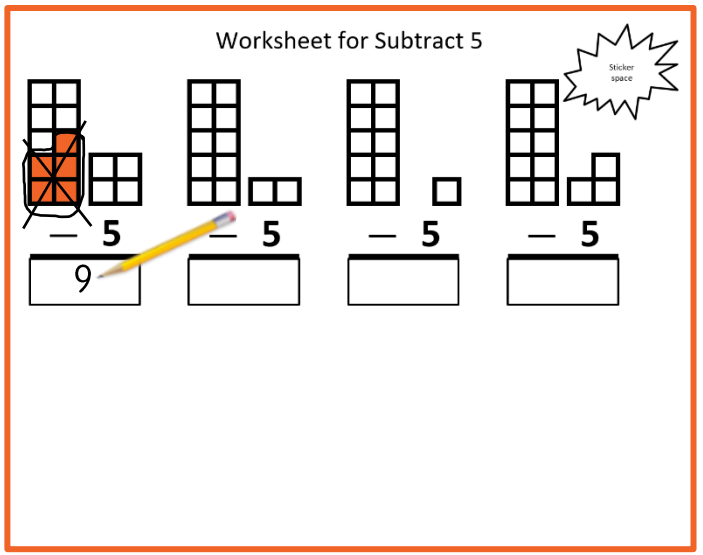


FIGURE 2



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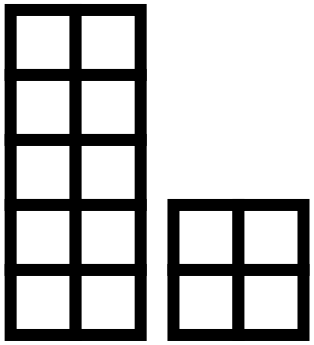
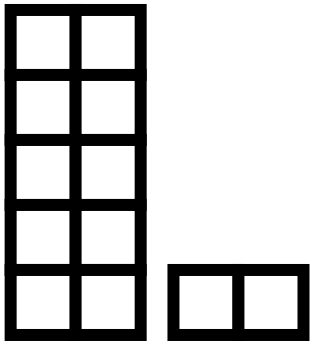
Worksheet for Subtract 5

Sticker space



— 5



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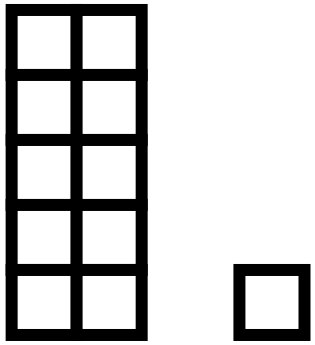

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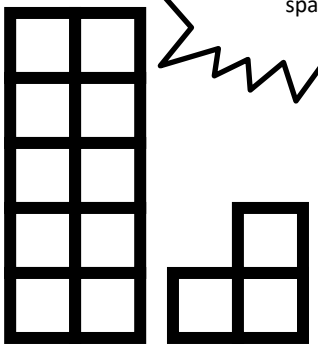

— 5

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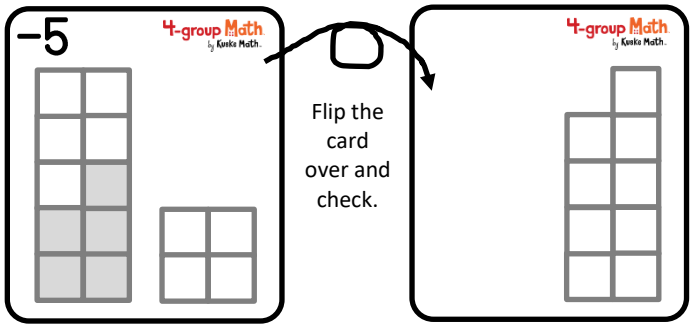
Activity 3 –Flip Cards for Subtraction Directions

OBJECTIVE: Give the answer to the equation shown on the **-5** side of each card.

MATERIALS: Activity 3 – Flip Cards for Subtract 5

GROUP: Independent, 1 on 1, or small group

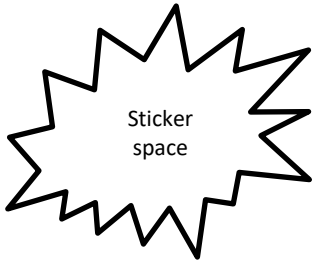
DIRECTIONS: Cut out the four cards on the following page. Lay the cards on the table with the side facing up that has a **-5** in the corner.
Look at one card. Say the equation you see, i.e. "Fourteen minus five."
In your math mind, take the 5 away from the 10.
In your math mind, put the remaining blocks together to "*see*" your answer (9).
Say the whole equation, i.e. "Fourteen minus five equals nine."
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:
"Fourteen minus five equals nine."

See
the answer
9.

(One example is shown.)



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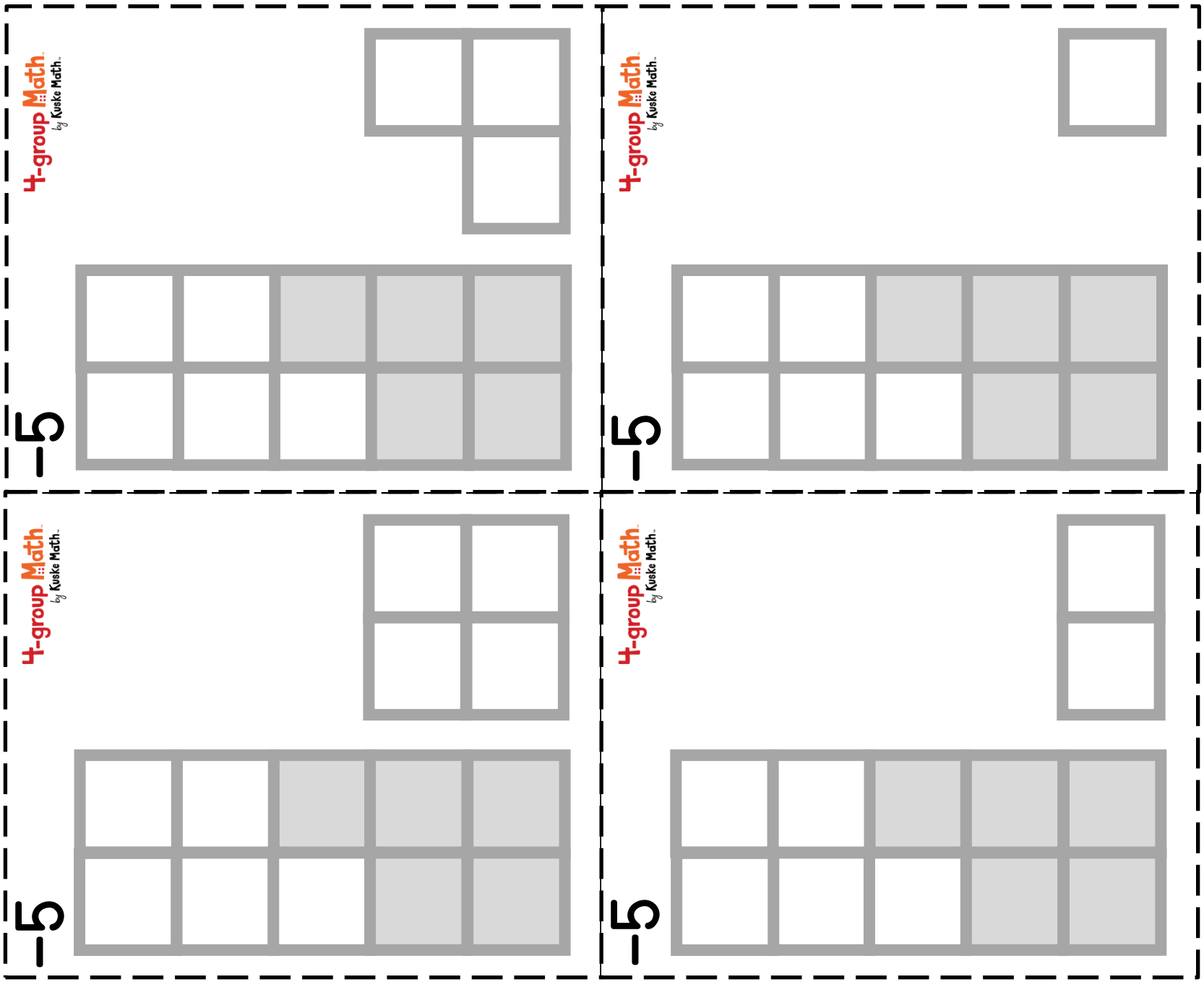
Activity 3 –Flip Cards for Subtract 5



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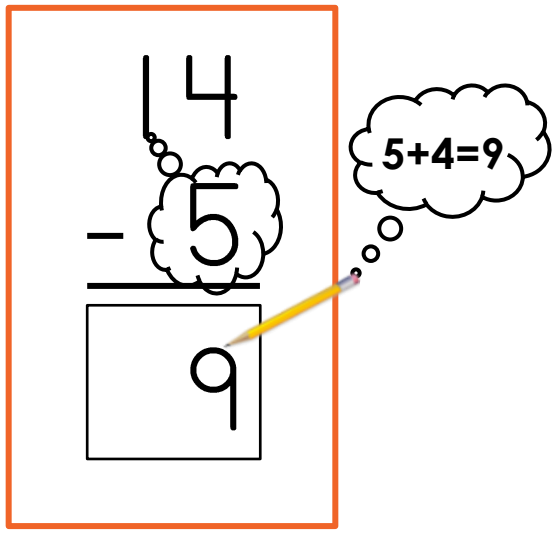
Activity 4 – Practice Subtraction Directions

OBJECTIVE: Practice equations to subtract 5

MATERIALS: Activity 4 – Subtract 5 Practice page

GROUP: Independent, 1 on 1, or small group

DIRECTIONS: **I**n your math mind, think how you would take the 5 away from the 10, leaving a 5.
In your math mind, put together the numbers that remain.
Write your answer in the box.
When you complete the activity, put a sticker in the Sticker space**.**



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Activity 4 – Subtract 5 Practice

$$\begin{array}{r} 14 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 12 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 11 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 13 \\ -\ 5 \\ \hline \square \end{array}$$

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Activity 5 – Assessment Directions

OBJECTIVE: Write and recite from memory equations to subtract 5

MATERIALS: Activity 5 – 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 subtract 5. (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 1-4.

FIGURE 1

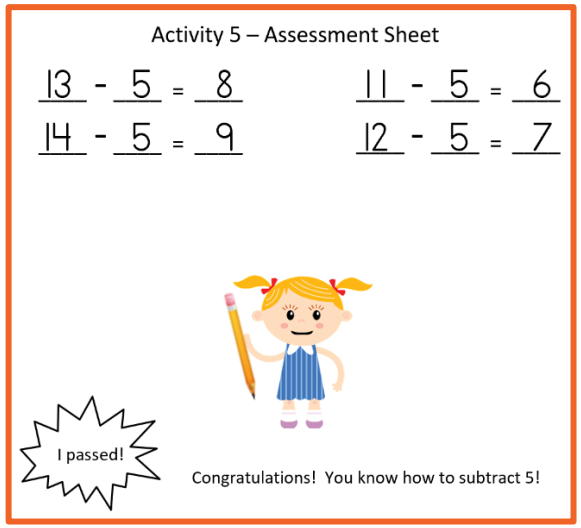


FIGURE 2

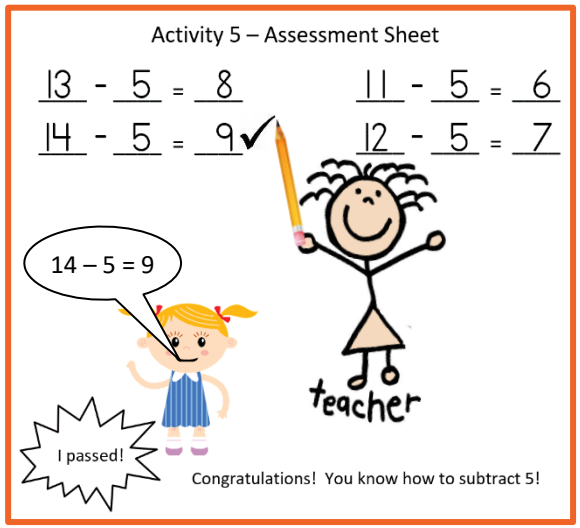
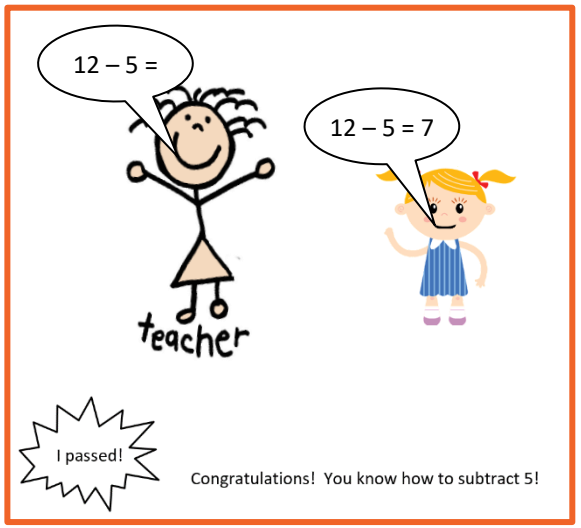


FIGURE 3



EXAMPLE:
The adult says, "*Twelve minus five*"
Child says, "*Twelve minus five equals seven.*"

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Activity 5 – Assessment Sheet

____ - ____ = ____	____ - ____ = ____
____ - ____ = ____	____ - ____ = ____

Congratulations! You know how to subtract 5!

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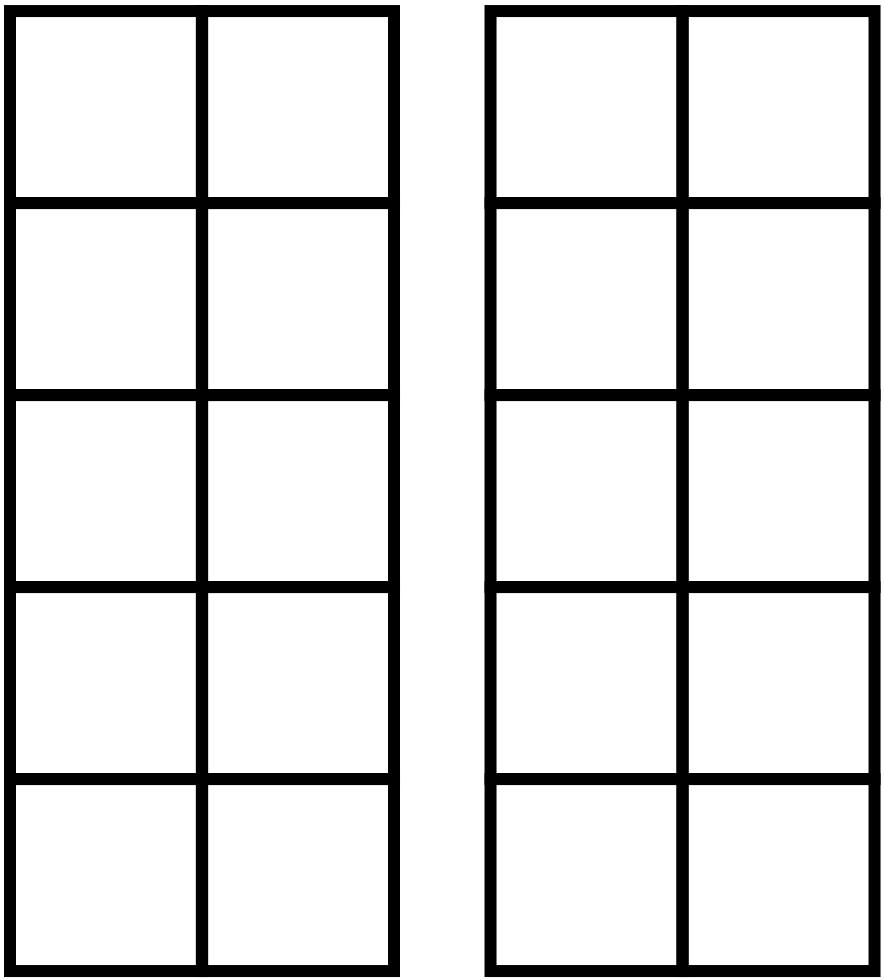
Building Subtract 5

Sticker space



14 − 5 = ___

11 − 5 = ___

13 − 5 = ___

12 − 5 = ___

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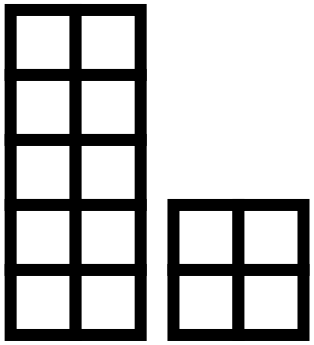
Worksheet for Subtract 5

Sticker space



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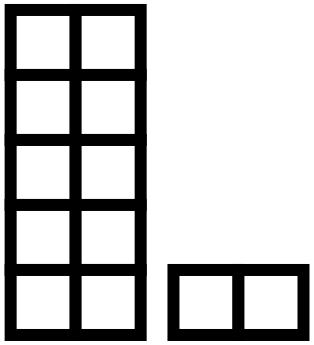

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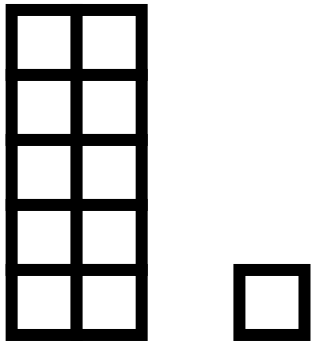

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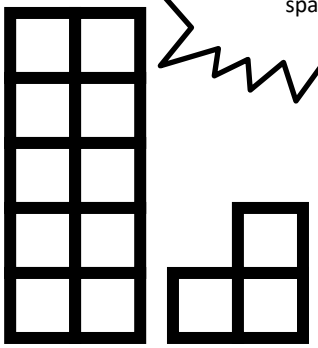

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Activity 4 – Subtract 5 Practice

$$\begin{array}{r} 14 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 12 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 11 \\ -\ 5 \\ \hline \square \end{array} \qquad \begin{array}{r} 13 \\ -\ 5 \\ \hline \square \end{array}$$

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Activity 5 – Assessment Sheet

____ - ____ = ____

____ - ____ = ____

____ - ____ = ____

____ - ____ = ____

Congratulations! You know how to subtract 5!

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