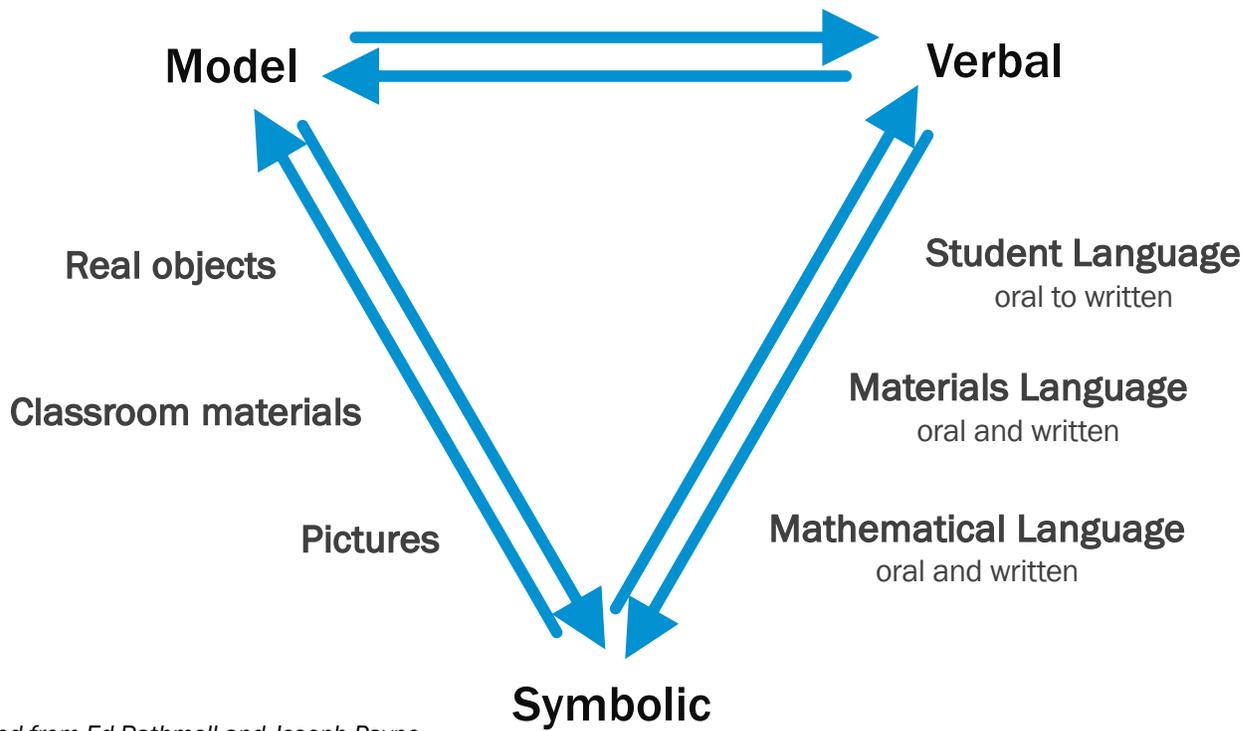




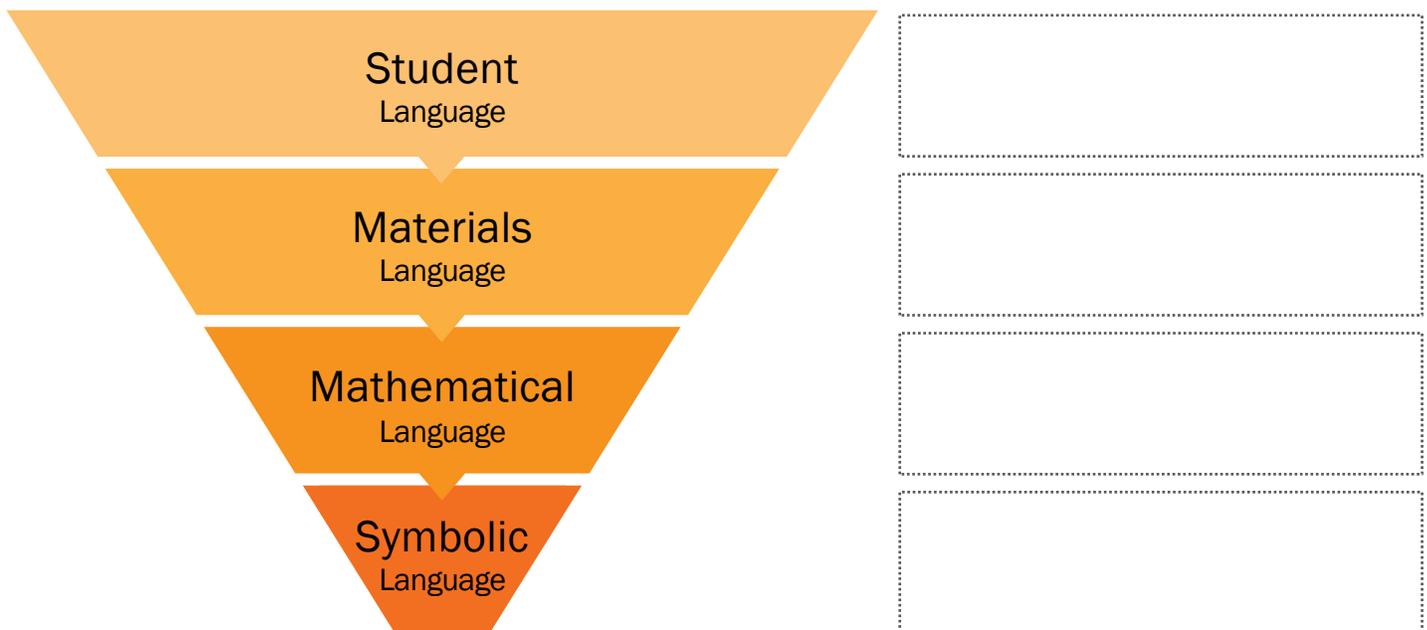
Viva Las Strategies for Addition and Subtraction Grades K-2

Sandy Szako
Learning Services Educator

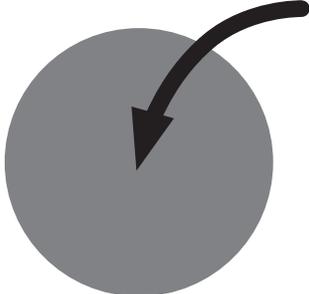
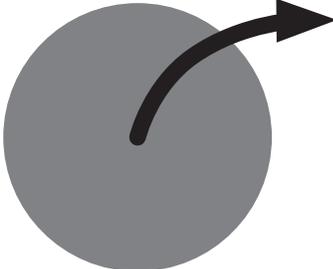
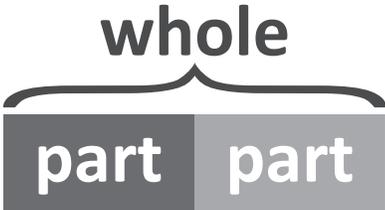
ORIGO's Teaching Model*



Language Stages



TYPES OF ADDITION AND SUBTRACTION

	Addition	Subtraction
Active	<p>Add to</p> 	<p>Take from</p> 
Static	<p>Put together</p> 	<p>Unknown addend</p> 
Static	<p>Comparison</p> 	<p>Comparison</p> 

Write a subtraction word problem.

How do you know that your story involves subtraction?

What is known? What is unknown?

WHAT'S THE PROBLEM?

Carefully read each story problem.

- Check (✓) the box to indicate the operation described.
- For each problem, write whether the type is 'take from', 'unknown addend' or 'comparison'.
- It is not necessary to answer the problems.

1. a. Jacinta has 12 cards she wants to trade.
Jade has 18 cards. How many more cards
does Jade have than Jacinta?

+	-	?
---	---	---

- b. How many cards do they have together?

+	-	?
---	---	---

2. a. Brie's lunch total is \$13. If she pays with a \$20-bill,
how much change will she receive?

+	-	?
---	---	---

- b. Beau's lunch total is \$15.
How much less did Brie spend?

+	-	?
---	---	---

3. a. Samuel has \$22. He wants to buy a new bike
helmet that costs \$55. How much more
does he need?

+	-	?
---	---	---

- b. Samuel's mother gave him another \$20.
How much money does he have now?

+	-	?
---	---	---

4. a. Matt threw the beanbag 3 meters farther
than Tom. Tom's throw measured 9 meters.
How far did Matt throw the beanbag?

+	-	?
---	---	---

- b. Anton's throw measured 11 meters. How much
farther did he throw than Tom?

+	-	?
---	---	---

5. a. Monica's previous best race time was 61 seconds.
She beat it by 2 seconds. What is her new
personal best time?

+	-	?
---	---	---

- b. The record time is 55 seconds. How much more
time will she need to shave from her personal
best to equal that record?

+	-	?
---	---	---

Number Fact Strategies

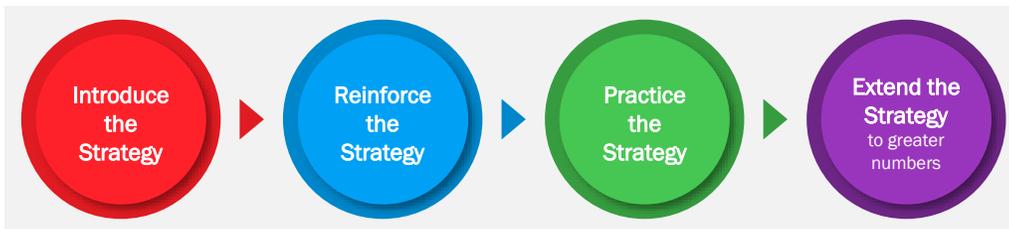
ADDITION

- Count on 1, 2 and 0
- Doubles and Near Doubles
- Bridge to Ten

SUBTRACTION

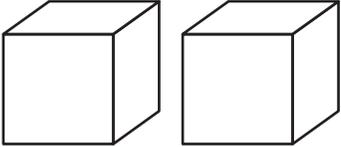
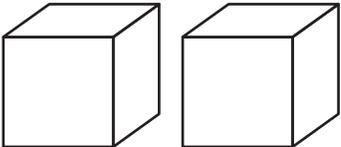
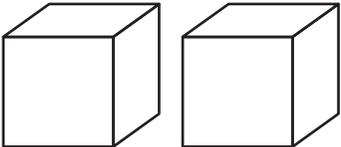
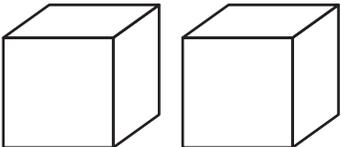
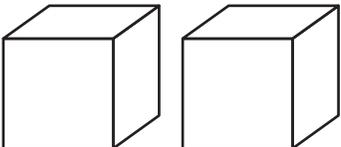
- Think Addition

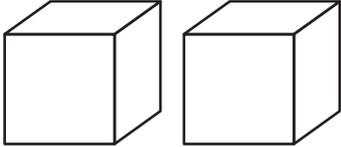
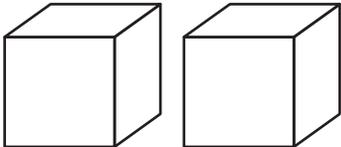
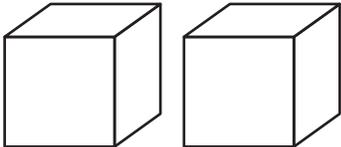
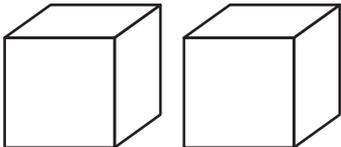
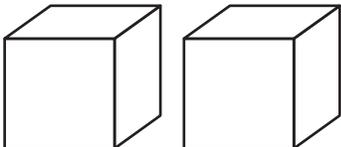
The Teaching Sequence



REINFORCE: Count on 1 and 2

- Roll your number cubes and count on 1 or 2.
- Find your answer below.
- Write your numbers on the number cubes. Write the number fact.

 ___ + ___ = 11
 ___ + ___ = 5
 ___ + ___ = 9
 ___ + ___ = 8
 ___ + ___ = 7

 ___ + ___ = 6
 ___ + ___ = 8
 ___ + ___ = 7
 ___ + ___ = 6
 ___ + ___ = 10

Cube A: 4, 5, 6, 7, 8, 9

Cube B: 

REINFORCE: Double-plus-1

11	19	13	15
13	9	17	19
17	11	15	9

Cube: 4, 5, 6, 7, 8, 9 (Same as previous game)

REINFORCE: Bridge to Ten

- Roll your number cubes and write the fact below the example in the grid that will help you figure out the answer.
- Write the answer to both facts.

$10 + 6 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 5 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 5 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 4 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 4 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 3 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 3 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 2 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 1 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$

$10 + 6 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 5 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 5 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
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$10 + 3 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 2 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$
$10 + 1 = \underline{\quad}$ $\underline{\quad} + \underline{\quad} = \underline{\quad}$

Cube A: 8, 8, 8, 9, 9, 9

Cube B: 3, 4, 5, 5, 6, 7

CONNECT ADDITION AND SUBTRACTION

Take or Tally

Player 1

Player 2

$13 - \underline{\quad\quad} = \underline{\quad\quad}$

$13 - \underline{\quad\quad} = \underline{\quad\quad}$

$12 - \underline{\quad\quad} = \underline{\quad\quad}$

$12 - \underline{\quad\quad} = \underline{\quad\quad}$

$11 - \underline{\quad\quad} = \underline{\quad\quad}$

$11 - \underline{\quad\quad} = \underline{\quad\quad}$

$10 - \underline{\quad\quad} = \underline{\quad\quad}$

$10 - \underline{\quad\quad} = \underline{\quad\quad}$

$9 - \underline{\quad\quad} = \underline{\quad\quad}$

$9 - \underline{\quad\quad} = \underline{\quad\quad}$

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

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

Tally

Tally

Cube A: 1, 2, 3, 1, 2, 3

Cube B: 7, 8, 9, 10, 11, 12

Directions for the Games

Count on 1 or 2

Focus:

Adding 1 or 2 using the count on strategy

Materials:

Two number cubes configured as follows:

Cube A: 4, 5, 6, 7, 8, 9

Cube B: 1, 1, 1, 2, 2, 2

Colored pencil or marker for each student in different colors

Game board

Directions:

The player who completes the most equations is the winner.

How to Play:

Player 1 rolls, finds the matching equation with the matching sum and fills in the dice and equation on the game board in his/her color.

Next player rolls and fills in dice and equation in his/her color.

If a player rolls a sum that is already filled, he/she misses a turn.

Play continues until board is filled or time runs out.

Example:

Gertrude rolls a numeral six and 2 dots. She says, Six count on 2 is seven, eight. I will fill in one of the equations with the sum of 8 and fill in the dice to match my roll.

Doubles plus 1

Focus:

Using doubles facts to solve a doubles plus 1 equation

Materials:

Doubles add one game board

Once cube showing the numerals 4, 5, 6, 7, 8, 9

Four counters per player, each player has a different color counter

Directions:

The player who places all four counters on the board first, wins.

How to Play:

First player rolls the number cube and doubles the number rolled, then adds one to it.

Player claims the sum by covering it with a counter. If that sum is already covered, the player misses a turn.

Other players have a turn.

Example:

Carla rolls a 7 and says, "I know that double 7 is 14, so 7 add 8, must be one more, that's 15."

For ideas on how to bring out the mathematics in this game, see Fundamentals Yellow, pp 56-57.

Bridge to Ten

Focus:

Reinforce the Bridge-to-Ten strategy for addition

Materials:

Two number cubes configured as follows:

Cube A: 8, 8, 8, 9, 9, 9

Cube B: 3, 4, 5, 5, 6, 7

Colored pencil or marker for each student in different colors

Game board

Directions:

The player who completes the most equations in their color is the winner. One player plays the left side of the board, one plays the right side. It is possible to add another player or two. In that case, each player would use the entire board and count the equations completed in his/her color at the end of the game.

How to Play:

First player rolls both cubes.

Player finds the tens fact that corresponds to the 8 or 9s fact that is rolled.

Player fills in the sum of the tens fact and the equation for the 8 or nines fact.

Next player has a turn.

Play continues until one player fills a side (in a two-player game), or the board is filled (if more than two are playing), or until time runs out.

Player with the most equations in his/her color is the winner.

Example:

Jorge rolls a 9 and a 5. He says, "I know that 9 is one away from ten. Nine add 5 has the same value as 10 add 4. That's 14. So I will fill in the space with 10 add 4 and add the equation 9 add 5 equals 14."

Addition and Subtraction Strategies Videos

Introducing the ORIGO Model for Teaching Skills

ORIGO One: <https://origo-education.wistia.com/medias/26icnyoznj>

Using Five- and Ten- Frames to Represent Numbers

ORIGO One: <https://origo-education.wistia.com/medias/affdnu185b>

Teaching the Count-On Strategy for Addition

ORIGO One: <https://origo-education.wistia.com/medias/bv1c3s6bht>

GS13: Exploring Doubles in the Real World

Gem Stones: <https://www.youtube.com/watch?v=qfuWSb5CixY>

GS14: Doubling Numbers Less Than 10

Gem Stones: <https://www.youtube.com/watch?v=JZt2P4OdGx8>

Teaching the use Doubles Strategy for Addition

ORIGO One: <https://origo-education.wistia.com/medias/w14o4303pm>

GS15: Using Doubles to Add “Next Door” Numbers (Doubles-Plus-1 facts)

Gem Stones: <https://www.youtube.com/watch?v=KMfqfZHzh8I&t=26s>

Using Doubles to Add Nearby Numbers (Doubles-Plus-2 facts)

Gem Stones: <https://youtu.be/0QcCVR6Yqus>

GS4: Exploring combinations that make 10

Gemstone: <https://youtu.be/o6ZkDCE5BWc>

Using the Make-Ten or Bridge-to-ten Strategy for Addition

ORIGO One: <https://origo-education.wistia.com/medias/e7tku31liu>

Making a Ten to Add Basic Facts

Gem Stones: <https://youtu.be/ROuWdXdQ11g>

GS7: Making a Ten to add a 2 digit number and activity

Gem Stones: <https://youtu.be/kq1meaJDirA>

Teaching the Think-Addition Strategy for Subtraction

ORIGO One: <https://origo-education.wistia.com/medias/cm98lr2tax>

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The ORIGO Handbook of Mathematics Education. ORIGO Education, 2008.

Tickle, Brian, and James Burnett. *Fundamentals: Games to Develop and Reinforce Mental Computation Strategies*. ORIGO Education, 2007.