

How to Teach Addition Facts That Stick

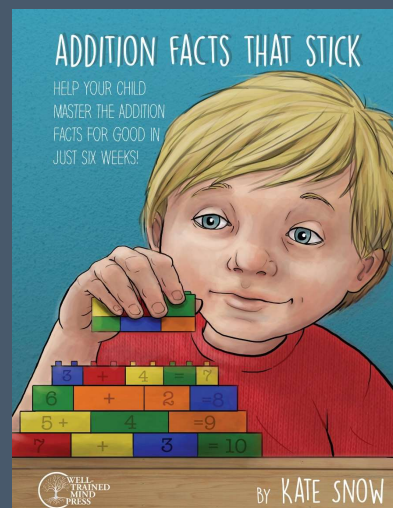
Kate Snow



Please feel free to type your questions in the question box during the talk, and I'll answer them at the end.

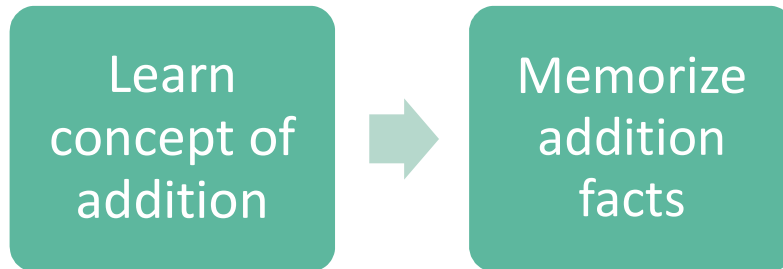
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Addition Facts That Stick

The typical approach



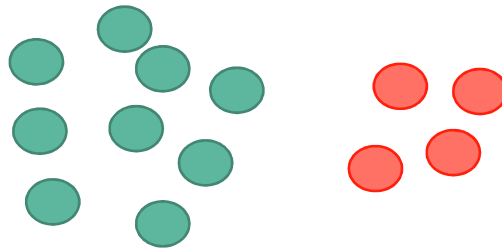
Addition Facts That Stick

Problems with the “just memorize” approach to the addition facts

- Takes a long time
- Child feels overwhelmed
- Child learns to memorize, not understand math
- Facts often aren't retained

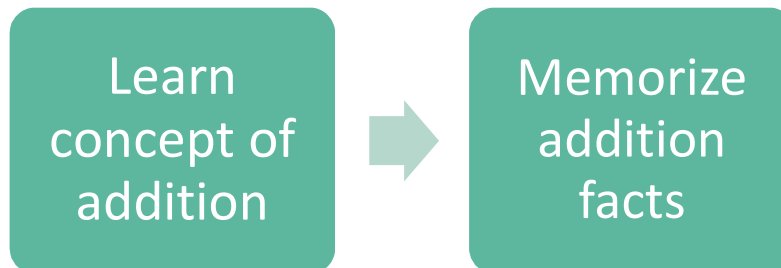
Addition Facts That Stick

How a child typically imagines $9 + 4$



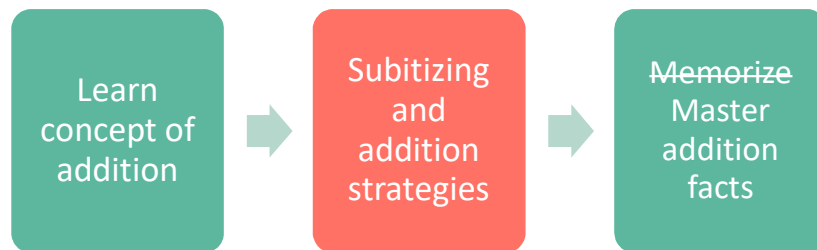
Addition Facts That Stick

The typical approach



Addition Facts That Stick

The missing link

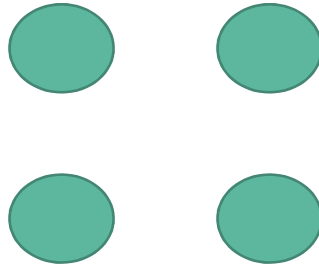


Subitizing

Subitizing

Being able to tell "how many" without counting one-by-one

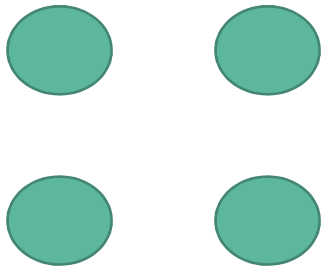
Subitizing



Subitizing

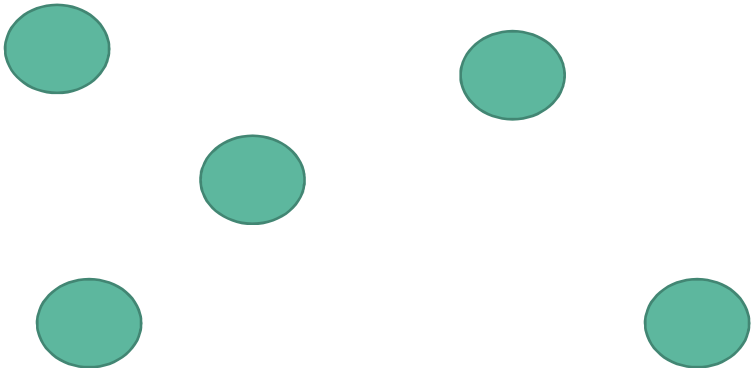
How many dots were there?

Subitizing



A diagram illustrating subitizing. It features a dark grey header with the word "Subitizing" in white. Below the header, four green circles are arranged in a 2x2 grid.

Subitizing

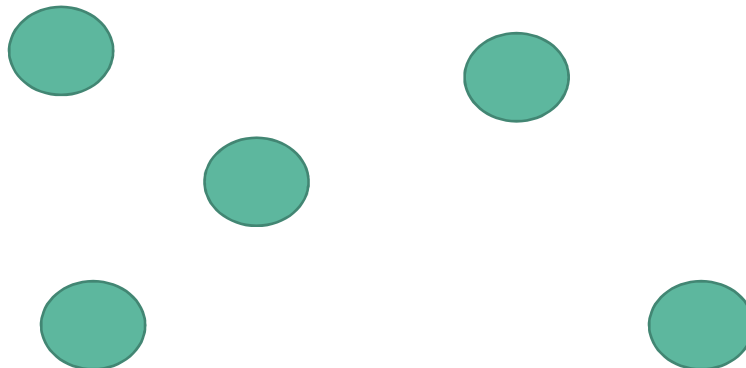


A diagram illustrating subitizing. It features a dark grey header with the word "Subitizing" in white. Below the header, five green circles are arranged in a pentagonal pattern.

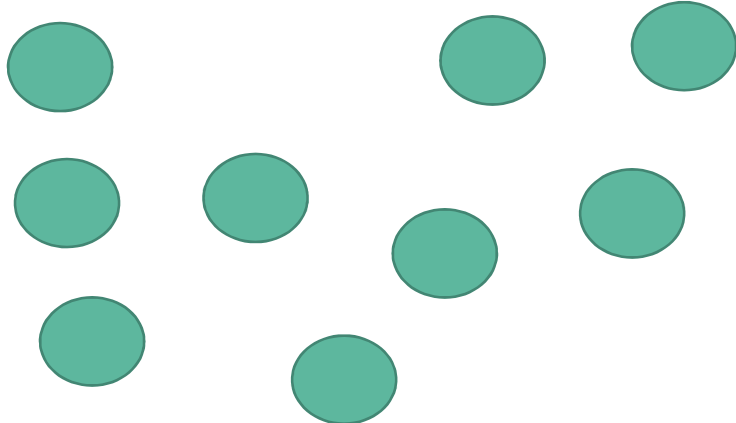
Subitizing

How many dots were there?

Subitizing

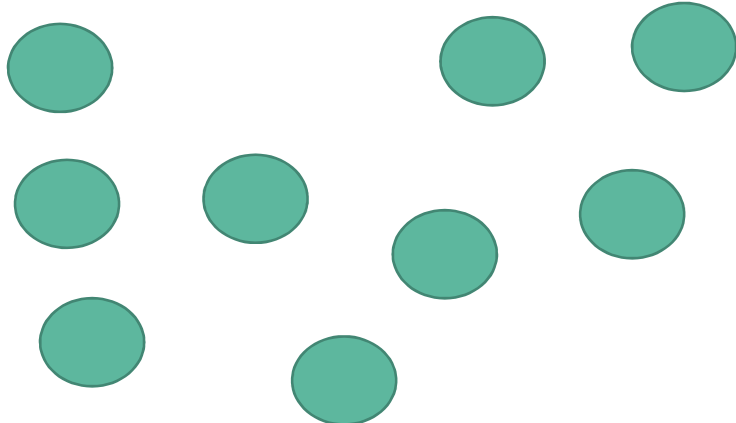


Subitizing



A collection of 10 green circles arranged in a non-linear pattern. The circles are distributed across three rows: the top row has three circles, the middle row has four circles, and the bottom row has three circles. The arrangement is irregular, with no straight lines or simple geometric shapes that would make counting easy.

Subitizing



A collection of 10 green circles arranged in a non-linear pattern, identical to the one above. The circles are distributed across three rows: the top row has three circles, the middle row has four circles, and the bottom row has three circles. The arrangement is irregular, with no straight lines or simple geometric shapes that would make counting easy.

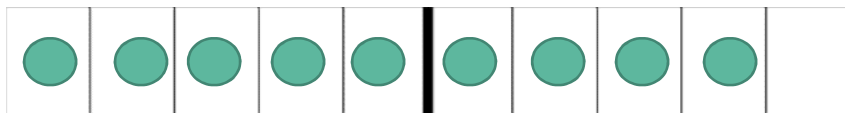
Subitizing

Ten-frame



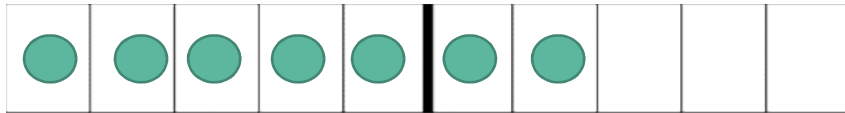
Subitizing

Ten-frame



Subitizing

Ten-frame

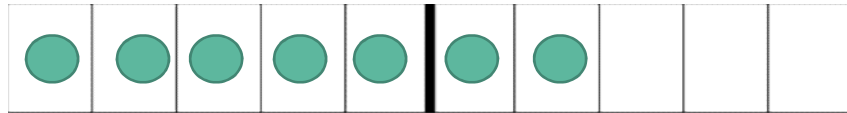


Subitizing

How many dots were there?

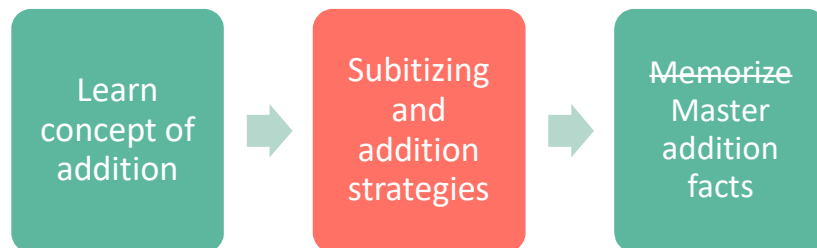
Subitizing

Ten-frame



Addition Facts That Stick

The missing link



Using Addition Facts Strategies

1. Divide facts into groups that can be solved with same strategy.
2. Teach strategy for one group.
3. Use strategy to practice facts in each group until those facts are mastered.
4. Mix up facts with other known facts and practice some more.

Addition Strategies

Six Addition Strategies

1. Adding 1 and 2
2. Pairs that make 10
3. Use 5 as a benchmark
4. Adding 9
5. Adding 8
6. Look at the leftovers

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

Strategy 1: Adding 1 and 2



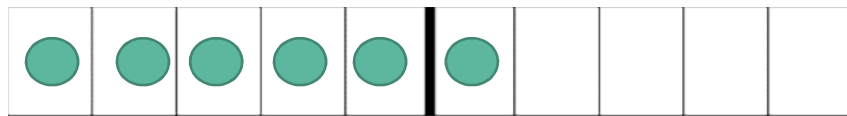
$$6 + 1 = 7$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

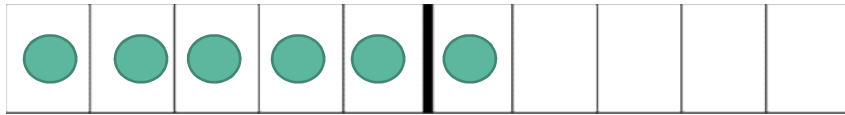
Strategy 2: Pairs That Make 10



$$6 + ? = 10$$

Addition Strategies

Strategy 2: Pairs That Make 10



$$6 + 4 = 10$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

Strategy 3: Use 5 as a benchmark



$$4 + 3 =$$

Addition Strategies

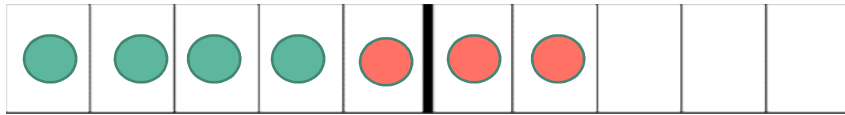
Strategy 3: Use 5 as a benchmark



$$4 + 3 = 7$$

Addition Strategies

Strategy 3: Use 5 as a benchmark



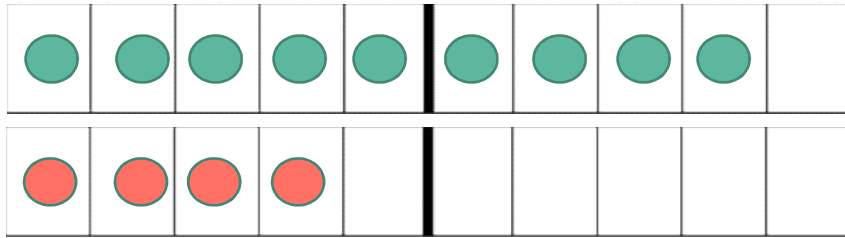
$$4 + 3 = 7$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

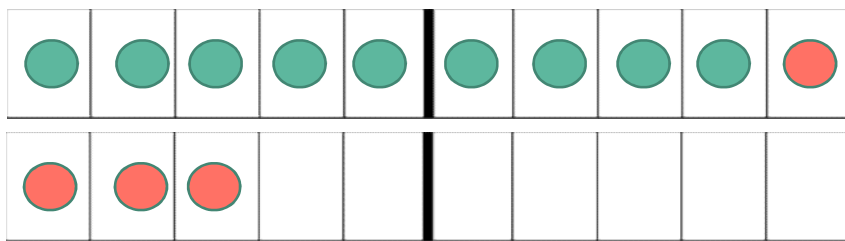
Strategy 4: Adding 9



$$9 + 4 =$$

Addition Strategies

Strategy 4: Adding 9



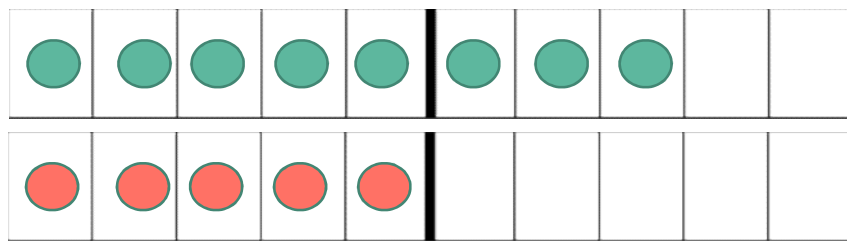
$$9 + 4 = 13$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

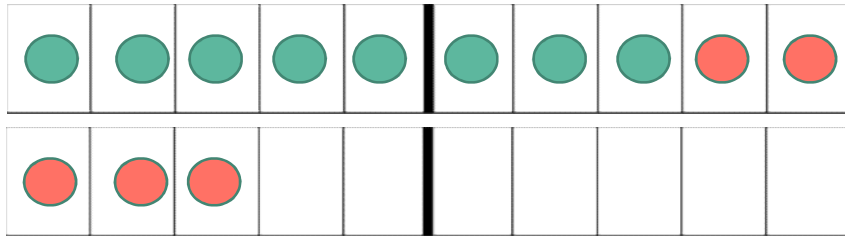
Strategy 5: Adding 8



$$8 + 5 =$$

Addition Strategies

Strategy 5: Adding 8



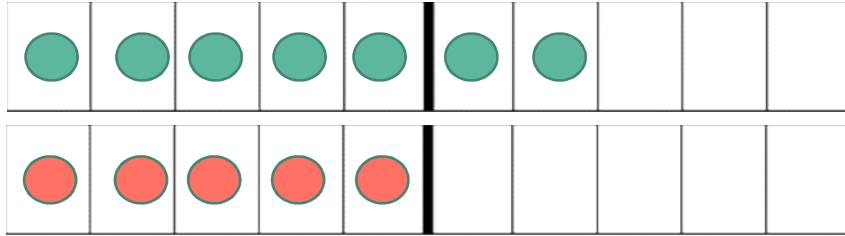
$$8 + 5 = 13$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

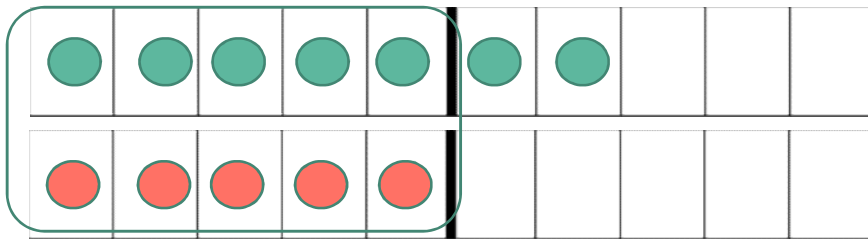
Strategy 6: Look at the leftovers



$$7 + 5 =$$

Addition Strategies

Strategy 6: Look at the leftovers



$$7 + 5 = 12$$

Addition Strategies

1+1	2+1	3+1	4+1	5+1	6+1	7+1	8+1	9+1
1+2	2+2	3+2	4+2	5+2	6+2	7+2	8+2	9+2
1+3	2+3	3+3	4+3	5+3	6+3	7+3	8+3	9+3
1+4	2+4	3+4	4+4	5+4	6+4	7+4	8+4	9+4
1+5	2+5	3+5	4+5	5+5	6+5	7+5	8+5	9+5
1+6	2+6	3+6	4+6	5+6	6+6	7+6	8+6	9+6
1+7	2+7	3+7	4+7	5+7	6+7	7+7	8+7	9+7
1+8	2+8	3+8	4+8	5+8	6+8	7+8	8+8	9+8
1+9	2+9	3+9	4+9	5+9	6+9	7+9	8+9	9+9

Addition Strategies

With any of these strategies:

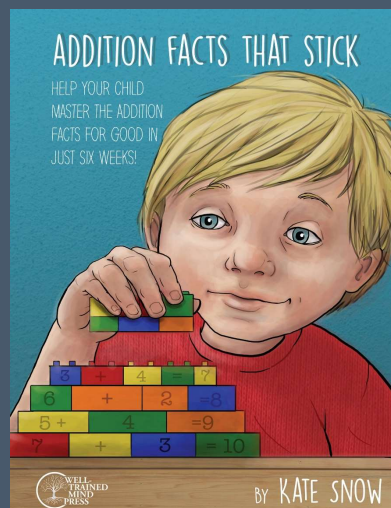
1. Use manipulatives to teach and practice strategy.
2. Encourage child to visualize ten-frame.
3. Child gradually begins to “just know” answers.

Using Addition Facts Strategies

1. Divide facts into groups that can be solved with same thinking strategy.
2. Teach strategy for one group.
3. Use strategy to practice facts in each group until those facts are mastered.
4. Mix up facts with other known facts and practice some more.

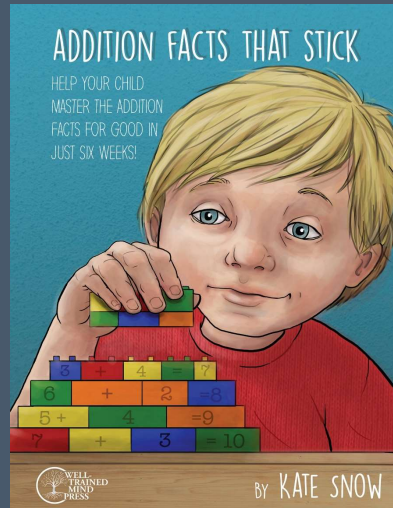
For each strategy:

- Scripted lesson
- Fun game
- Worksheets that practice new facts and provide cumulative review



1 week per strategy

About 15 minutes per day,
5 days per week



Day 1:
Teach new
strategy

DAY 1: NEW TEACHING

Introduce new facts
Write $4 + 3 =$ on a piece of paper and place four counters on the ten frame.

●	●	●	●						
---	---	---	---	--	--	--	--	--	--

"Imagine if I added three counters. First, I'd use one counter to fill in the empty box to complete the group of five." (Point to this box.)

●	●	●	●						
---	---	---	---	--	--	--	--	--	--

"Then, I'd still need to add two more counters on the other side of the dark line." (Point to these two boxes.)

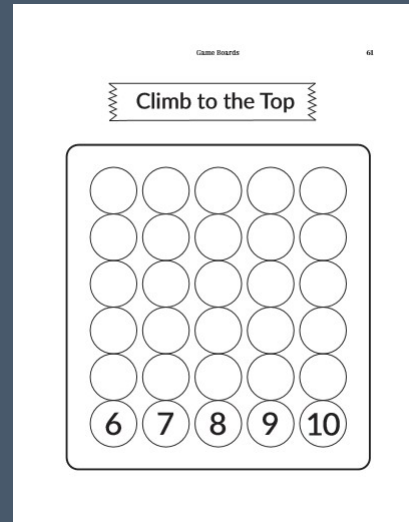
●	●	●	●	●	●				
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"How many counters would there be then?" Seven.
Have your child physically place three counters of a different color on the ten frame to confirm the answer.

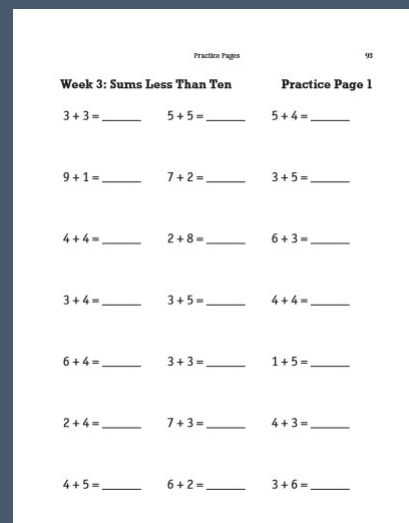
●	●	●	●	●	●	●			
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33

**Day 1:
Introduce new
game**

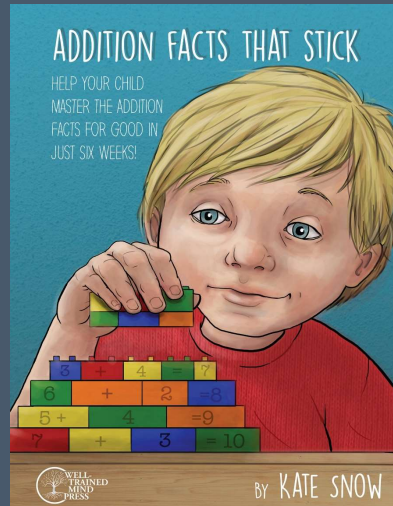


**Days 2-5:
Play game and
complete a
practice page**



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Upcoming Events

Subtraction Facts That Stick Webinar

Tuesday, January 17 at 8:00 PM Eastern
welltrainedmind.com/kate-snow-webinar/

Fractions That Make Sense

3-session workshop on everything you need to know to teach fractions (3rd to 6th grade)
wtmacademy.com/courses-for-adults/

More Resources

Preschool Math at Home

Give your preschooler a great start in math!

Kate's Homeschool Math Help

My site: kateshomeschoolmath.com

Quick Wins newsletter

(Look for "Quick Wins" at top of my site.)

Thanks so much for attending!

Subtraction Facts That Stick Webinar
Tuesday, January 17 at 8:00 PM Eastern
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Fractions That Make Sense
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