MATH NATION
BY ACCELERATE LEARNING

Take & Teach
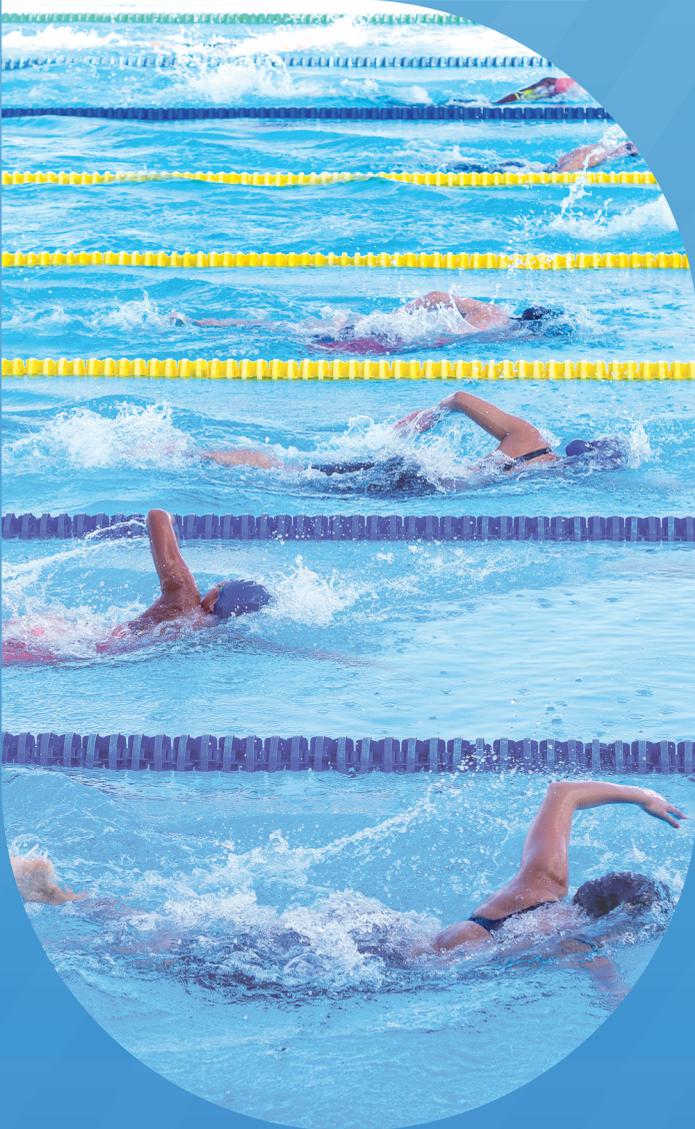
What's Inside This Sample Lesson?

- A fully guided lesson written to meet rigorous state and national standards
- **Teacher Edition** pages, **Student Workbook** pages, and other **helpful resources** to fully experience a Math Nation lesson
- Warm-ups, exploration tasks, instructional routines, and teacher prompts
- Support for English learners and students with disabilities
- Integrated reflection, synthesis, and cool-down opportunities

Table of Contents
Grade 2, Unit 2, Lesson 9 - Add and Subtract within 100

Go Online!
Explore the digital resources for this lesson.

LESSON 9
ADD AND SUBTRACT WITHIN 100

TEACHER-FACING LEARNING GOAL

- Add and subtract within **100** using strategies based on place value, including composing and decomposing a ten, and the properties of operations.

ALIGNMENT

Addressing
2.NBT.B.5
Building Towards
2.NBT.B.5

LESSON PREPARATION

Instructional Routines
MLR7 Compare and Connect (Activity 2)
Which One Doesn't Belong? (Warm-up)
Materials To Gather
Base-ten blocks: Activity 1, Activity 2
Materials To Copy
Sort and Find the Value (groups of **2**): Activity 1

LESSON TIMELINE

Warm-up	10 min
Activity 1	15 min
Activity 2	20 min
Lesson Synthesis	10 min
Cool-down	5 min

TEACHER REFLECTION QUESTION

Reflect on whose thinking was heard today. Reflect on whose thinking was not heard but could have enriched the conversations. What prompts or structures might better enable the latter to share their voices and reasoning?

LESSON INFORMATION

Student-Facing Learning Goal

- Let's find the difference in our own way.

Lesson Narrative

The purpose of this lesson is for students to add and subtract within **100**, including composing and decomposing a ten, using strategies based on place value and the properties of operations.

In previous lessons, students explored different methods for addition and subtraction with and without composing or decomposing a ten. Students used base-ten blocks, drawings, and equations to represent their methods.

In this lesson, students choose their preferred methods and representations to add and subtract. Throughout the lesson, students are asked to connect expressions and diagrams, choose their own methods for adding and subtracting, and make sense of others thinking (MP2, MP3, MP6). Listen for the ways students explain their methods to others and look for ways to help students provide feedback to one another when their representations or explanations are not clear.

This lesson has a Student Section Summary.

1

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2	2nd Grade Mathematics · Unit 2

WARM-UP | WHICH ONE DOESN'T BELONG: TENS AND ONES 10 minutes

Instructional Routines
Which One Doesn't Belong?

This warm-up prompts students to carefully analyze and compare features of base-ten diagrams. In making comparisons, students look for and make use of structure as they describe representations of tens, ones, and the value of the base-ten diagrams (MP7). It gives the teacher an opportunity to hear how students use terminology and talk about characteristics of base-ten diagrams, including equivalent representations (MP6). This will be important as students compose and decompose two-digit numbers as they add and subtract within **100**.
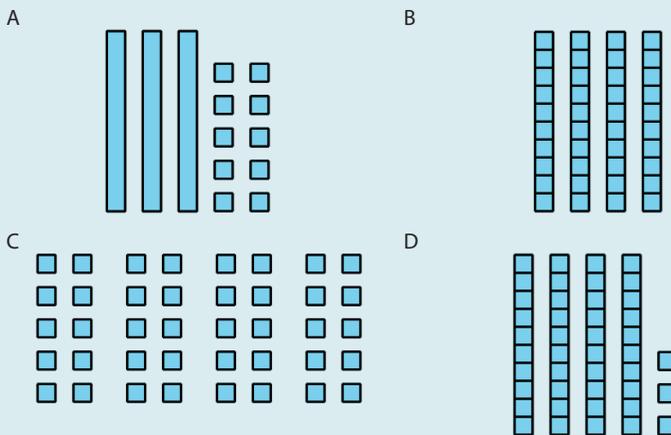
LAUNCH	• Groups of 2 • Display the image. • "Pick one that doesn't belong. Be ready to share why it doesn't belong." • 1 minute: quiet think time

ACTIVITY	• "Discuss your thinking with your partner." • 2–3 minutes: partner discussion • Share and record responses.

STUDENT-FACING TASK STATEMENT	Which one doesn't belong?

POSSIBLE RESPONSES	• A doesn't belong because it's the only one with tens that don't have lines to show each one. • B doesn't belong because it doesn't show any individual ones. • C doesn't belong because it doesn't show any towers of ten (any tens). • D doesn't belong because it doesn't represent 40 (it shows 43).

ACTIVITY SYNTHESIS	• "Let's find at least one reason why each one doesn't belong."

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EXPLORATION ACTIVITY | SORT AND FIND THE VALUE 15 minutes

Materials To Gather	Materials To Copy	Required Preparation
Base-ten blocks	Sort and Find the Value (groups of **2**)	Create a set of cards from the blackline master for each group of **2–3**.

The purpose of this activity is for students to match expressions to base-ten diagrams. Students then choose **2** of the expressions to find the value of, using any method that makes sense to them. Some of the expressions do not require composing or decomposing a ten. When students match expressions with diagrams they are making use of base ten structure and the meaning of operations (MP7).

Support for English Language Learners

MLR8 Discussion Supports. Students should take turns finding a match and explaining their reasoning to their partner. Display the following sentence frames for all to see: "I noticed _____, so I matched . . . ." Encourage students to challenge each other when they disagree.

Advances: Conversing, Representing

LAUNCH	• Groups of 2 • Give each group a set of cards and access to base-ten blocks.
ACTIVITY	• "Each group will get a set of cards. Match each expression to a diagram. After you have found a match, explain to your partner why you believe they go together." • "After you have found all of the matches, choose 1 addition and 1 subtraction expression. Find the value of each expression in a way that makes sense to you." • 15 minutes: partner work time • Monitor for students who choose expressions that do not involve composing or decomposing a ten.
STUDENT-FACING TASK STATEMENT	1. Match each expression to a base-ten diagram. 2. Choose 1 addition expression and find the value of the sum. 3. Choose 1 subtraction expression and find value of the difference.
POSSIBLE RESPONSES	1. A-M, B-K, C-Q, D-P, E-R, F-J, G-O, H-L, I-N 2. Answers vary. 3. Answers vary.
ACTIVITY SYNTHESIS	• "Which expressions did you choose to solve? Why?" (I chose $35 + 42$ because it was easy for me. I knew that I could just add the ones and then add the tens.) • "How could you tell if you would need to compose or decompose a ten?" (I could see that $5 + 2 = 7$, so I knew I wouldn't need to compose a ten.)

Math Nation – Grade 2

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4 2nd Grade Mathematics · Unit 2

EXPLORATION ACTIVITY | ADD OR SUBTRACT 20 minutes

Instructional Routines	Materials To Gather
MLR7 Compare and Connect	Base-ten blocks

The purpose of this activity is for students to add and subtract within **100** using the methods that make sense to them. Throughout the activity students share their methods for adding and subtracting and compare their method with others (MP3).

This activity uses *MLR7 Compare and Connect.* Advances: representing, conversing

Support for Students with Disabilities

Representation: Internalize Comprehension. Synthesis: Invite students to identify which details were most important to solve the problem. Display the sentence frame, "The next time I need to find the value of an expression, I will pay attention to . . . ."

Supports accessibility for: Conceptual Processing, Memory, Language

LAUNCH	• Groups of 2–3 • Give each group access to base-ten blocks.
ACTIVITY	• "Find the value of each expression. Show your thinking using drawings, numbers, or words." • "You can use the base-ten blocks if they help. Make sure you show your thinking on paper." • 5 minutes: independent work time **MLR7 Compare and Connect** • "Now, talk with your group about how you found the value of the expressions. What is the same? What is different?" • "Create a visual display that shows your thinking about 1 of the expressions. Show the work of all of the group members for the same expression so others can look for things that are the same or different. You may want to include details such as notes, diagrams, drawings, etc. to help others understand your thinking." • 5 minutes: partner discussion
STUDENT-FACING TASK STATEMENT	Find the value of each expression. Show your thinking. Use blocks if it helps. • $27 + 47$ • $55 - 27$ • $36 + 38$ • $82 - 39$
POSSIBLE RESPONSES	• 74. Sample response: $20 + 40 = 60, 7 + 7 = 14, 60 + 14 = 74$ • 28. Sample response: $55 – 20 = 35, 35 - 5 = 30, 30-2 = 28$ • 74. Sample response: $36 + 30 = 66, 66 + 4 + 4 = 74$ • 43. Sample response: $82 – 30 = 52, 52 – 2 = 50, 50 - 7 = 43$

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ACTIVITY SYNTHESIS	• 5–7 minutes: gallery walk • "What was the same about how _____ found the value and _____ found the value?" (In the first problem, _____ and _____ both added the ones and then added the tens and combined the two sums. $7 + 7 = 14$, $20 + 40 = 60$, $14 + 60 = 74$) • "What is different about how _____ represented their thinking and _____ represented theirs?" (_____ used a diagram and crossed out the ones and then decomposed a ten. Then _____ crossed out the rest of the ones and the tens. _____ wrote equations to show each step.)
ADVANCING STUDENT THINKING	Students may not see the connections between their methods and other students' methods. Consider asking: • "How are the methods represented differently in each display?" • "How did each group find the same value when they used such different methods?"

LESSON SYNTHESIS 10 minutes

"In this unit, you added and subtracted within **100** using different methods, tools, and representations."

"What is something new you've learned about addition or subtraction?"

"What is something new you've learned about ways to add or subtract from another classmate?"

Suggested Centers

- Capture Squares (**1**–**3**), Stage 3: Add within **20** (Addressing)
- Five in a Row: Addition and Subtraction (**1**–**2**), Stage 6: Add within **100** with Composing (Addressing)
- Target Numbers (**1**–**5**), Stage 4: Subtract Tens or Ones (Addressing)

Student Summary Section

In this section, we practiced subtracting two-digit numbers. We learned that when there are not enough ones to subtract by place, you can decompose **1** ten for **10** ones. We used base-ten blocks and base-ten diagrams to show our thinking.

$$63 - 18$$

Math Nation – Grade 2

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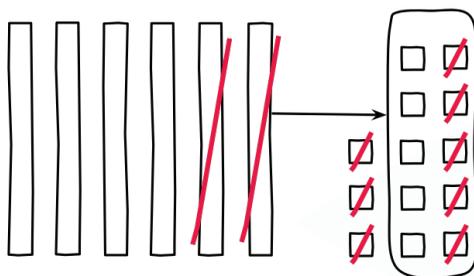
COOL DOWN | FIND THE VALUE YOUR WAY 5 minutes

STUDENT-FACING TASK STATEMENT	Find the value of each expression. Show your thinking. Use blocks if it helps. 1. $95 - 26$ 2. $28 + 56$
POSSIBLE RESPONSES	1. 69. Sample response: $95 - 20 = 75$ $75 - 5 = 70$ $70 - 1 = 69$ 2. 84. Sample response: $20 + 50 = 70$ $8 + 6 = 14$ $70 + 14 = 84$

Response to Student Thinking

Students find a value of $95 - 26$ other than 69.

Students find a value for $28 + 56$ other than 84.

Next Day Support

- Launch the warm-up or activities by highlighting important representations from previous lessons.

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Unit 2, Lesson 9: Add and Subtract Within 100

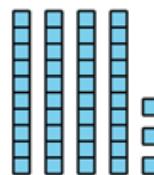## 📣 Which One Doesn't Belong: Tens and Ones

Which one doesn't belong?
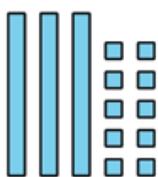
A.

B.
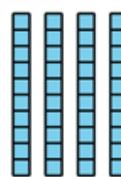
C.
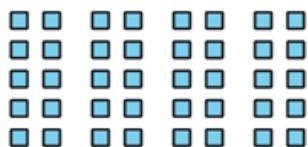
D.

🔭 Sort and Find the Value

1. Match each expression to a base-ten diagram.

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2. Choose 1 addition expression and find the value of the sum.

3. Choose 1 subtraction expression and find value of the difference.

Add or Subtract

Find the value of each expression. Show your thinking. Use blocks if it helps.

1. $27 + 47$

2. $55 - 27$

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3. $36 + 38$

4. $82 - 39$

📕 Section Summary

In this section, we practiced subtracting two-digit numbers. We learned that when there are not enough ones to subtract by place, you can decompose 1 ten for 10 ones. We used base-ten blocks and base-ten diagrams to show our thinking.

$$63 - 18$$
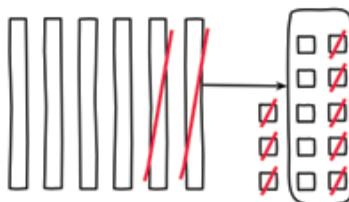
Lesson 9: Add and Subtract Within 100

Cool Down: Find the Value Your Way

Find the value of each expression. Show your thinking. Use blocks if it helps.

1. $95 - 26$

2. $28 + 56$

Sort and Find the Value

Sort and Find the Value

A

$$65 - 36$$

Sort and Find the Value

B

$$72 + 19$$

Sort and Find the Value

C

$$92 - 63$$

Sort and Find the Value

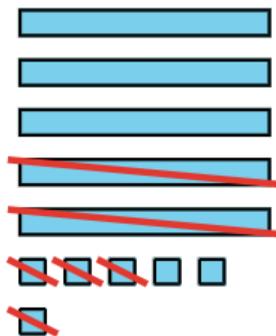D

$$64 + 27$$

Sort and Find the Value

Sort and Find the Value

E

$$35 + 42$$

Sort and Find the Value

F

$$56 - 24$$

Sort and Find the Value

G

$$83 - 58$$

Sort and Find the Value

H

$$27 + 33$$

Sort and Find the Value
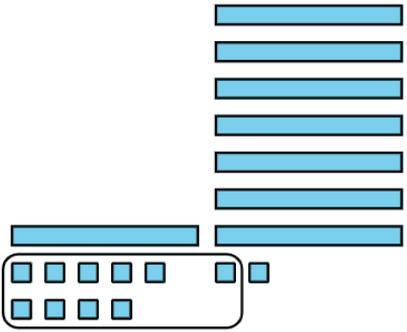
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Sort and Find the Value
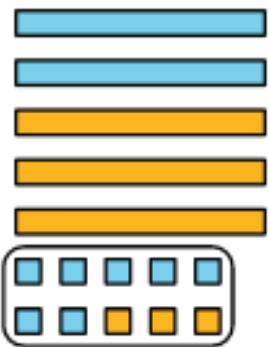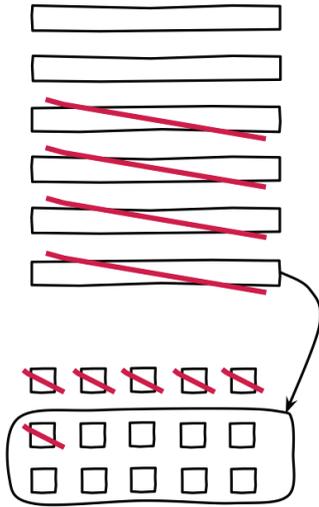
$$72 - 19$$

J
Sort and Find the Value

K
Sort and Find the Value

L
Sort and Find the Value

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Sort and Find the Value

Sort and Find the Value

M

Sort and Find the Value

O

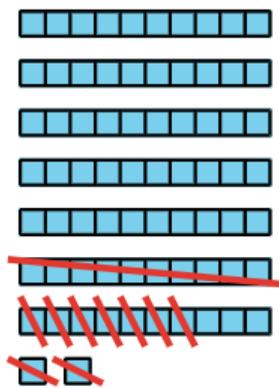

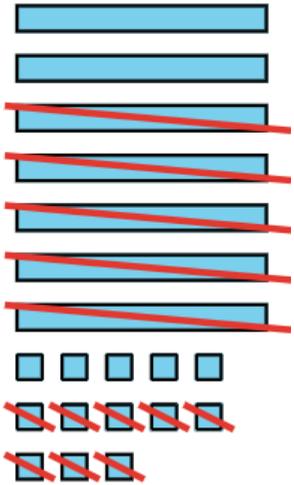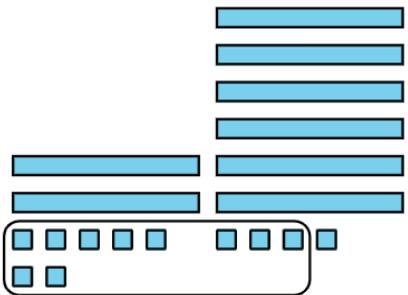### Sort and Find the Value
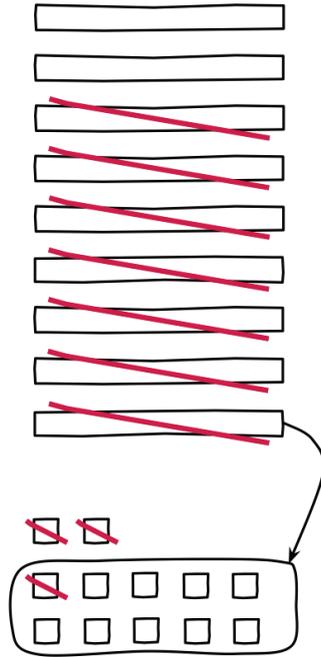
N

Sort and Find the Value
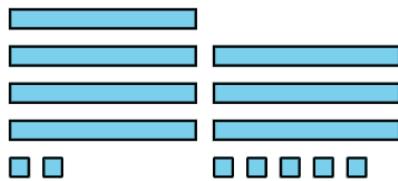
P

Sort and Find the Value

Sort and Find the Value

Q

Sort and Find the Value

R

Capture Squares Stage 3 Gameboard

Directions:
- On your turn:
  - Spin the spinner and take 1 number card. Find the sum.
  - Choose a square on the gameboard that shows that number. Draw one line connecting any 2 dots around the number.
  - If you can't draw a line, spin again and take a new card.
  - If you draw a line that finishes a square around a number, shade in that box with your color.
- Take turns with your partner. The first player to shade in 3 boxes wins.

17	15	16
12	13	14
18	19	20
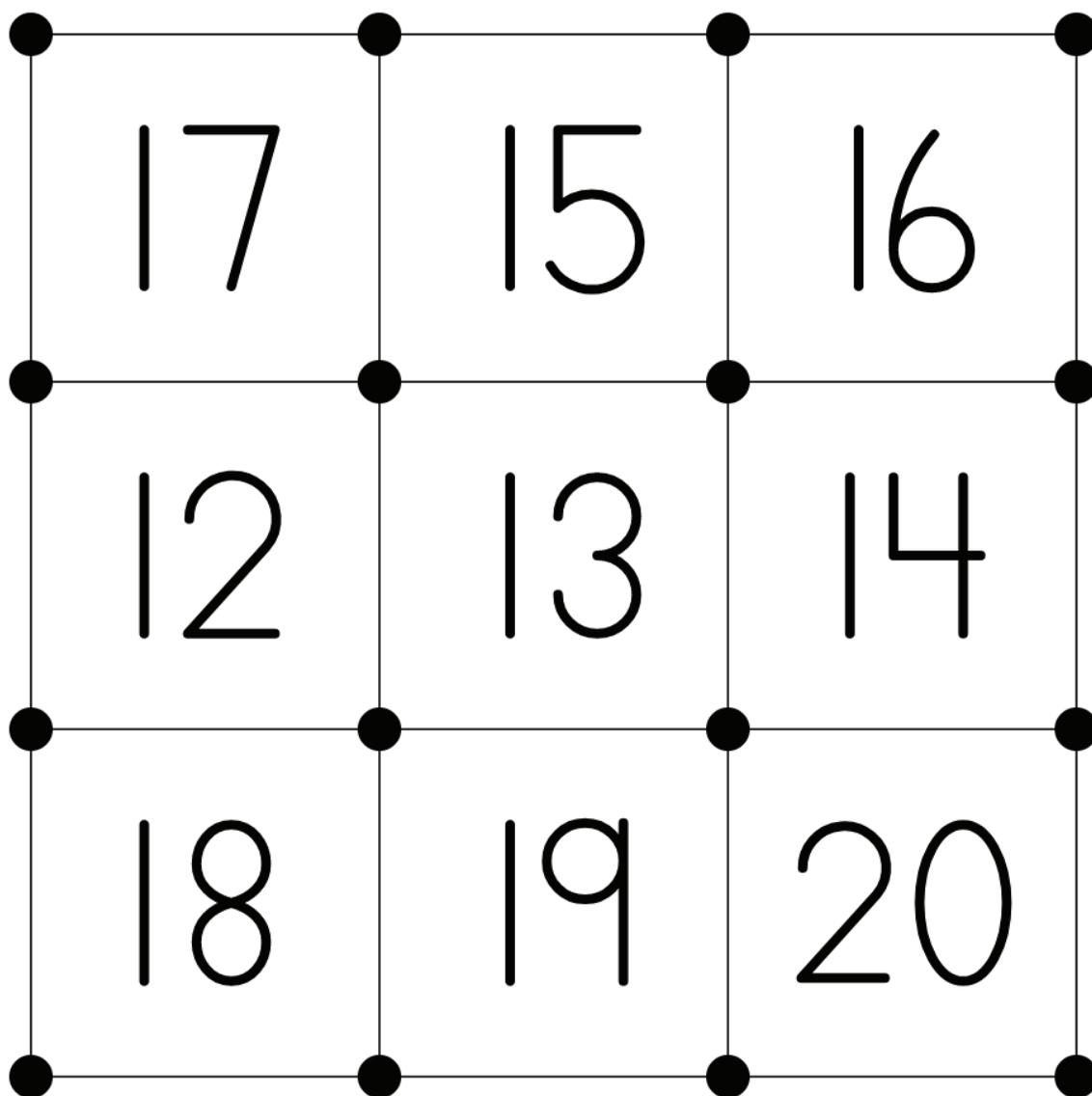
Capture Squares Stage 3 Spinner

Five in a Row Addition and Subtraction Stage 6 Gameboard

Directions: (two-digit plus two-digit)
- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.

81	91	54	46	90
84	83	35	82	53
60	92	99	73	51
73	42	44	53	92
100	75	82	61	64

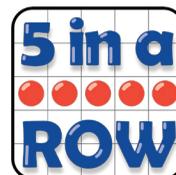| 16	27	25	34	35
65	19	57	26	48

Five in a Row Addition and Subtraction Stage 6 Gameboard

Directions: (one-digit plus two-digit)
- Partner A: Put a paper clip on 2 numbers in the grey rows. Cover the sum of the 2 numbers with a counter.
- Partner B: Move 1 of the paper clips, add the numbers, and cover the sum with a counter.
- Take turns. The first partner to cover 5 squares in a row wins.
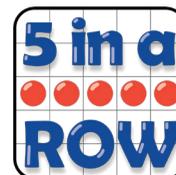
75	64	24	26	63
65	25	22	31	55
58	30	67	32	66
72	56	54	34	71
74	23	33	73	57

5	6	7	8	9

17	25	49	58	66

Target Numbers Stage 4 Recording Sheet

Directions:
- On your turn:
    - Start at 100. Draw a number card. Choose whether to subtract that number of tens or ones.
    - Write an equation to represent the difference.
- Take turns until you've played 6 rounds.
- Each round, the difference from the previous equation is the starting number in the new equation.
- The partner who gets a difference closest to 0 without going below 0 wins.

number card	choose	equation
	tens or **ones**	$100 - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
	tens or **ones**	$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
	tens or **ones**	$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
	tens or **ones**	$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
	tens or **ones**	$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$
	tens or **ones**	$\underline{\hspace{2cm}} - \underline{\hspace{2cm}} = \underline{\hspace{2cm}}$

Notes

Notes

Notes

Ready to see the full program?

Scan here!

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