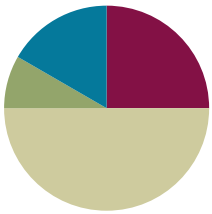
Lesson 38

Objective: Look for and make use of repeated reasoning and structure using the addition chart to solve subtraction problems.

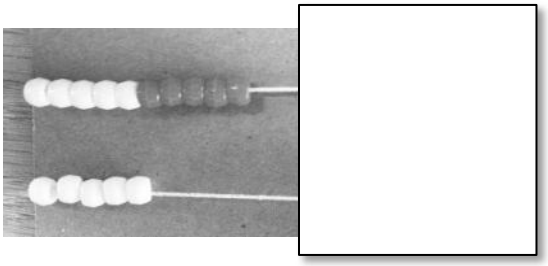
Suggested Lesson Structure



Fluency Practice	(10 minutes)
Application Problem	(7 minutes)
Concept Development	(33 minutes)
Student Debrief	(10 minutes)
Total Time	**(60 minutes)**

Fluency Practice (10 minutes)

- Rekenrek: Teen Numbers **K.NBT.1** (2 minutes)
- Hide Zero Cards **K.NBT.1** (3 minutes)
- Subtraction with Cards **1.OA.6** (5 minutes)



Rekenrek (2 minutes)

Materials: (T) Rekenrek (cover the unused beads)

Note: Reviewing **K.NBT.1** prepares students for the Make Ten strategy of Module 2.

T: (Move the top 4 beads on the Rekenrek into view). How many beads do you see?
S: 4.
T: How many more do we need to make 10?
S: 6.
T: (Move 6 more beads into view.) 4 + 6 = ?
S: 10.
T: (Move 3 beads from the bottom row into view.) How many beads are on the bottom row?
S: 3.
T: Let's say it the Say Ten way.
S: Ten 3.
T: Now, say it the regular way.
S: Thirteen.

Continue with other examples: 7 and 3 leading to 10 and 4, 8 and 2 leading to 10 and 5, etc.

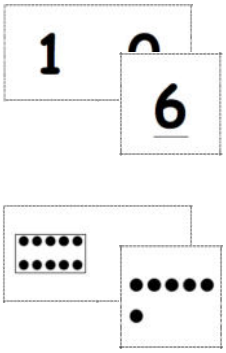
Hide Zero Cards: Bonding Teen Numbers (3 minutes)

Materials: (T) Hide Zero cards (Fluency Template) (S) Personal white board

Note: This activity continues to maintain students' understanding and use of teen numbers as *10 and some more*. Hide Zero cards are made so that the single digit cards can be laid on top of the 10 card to create teen numbers. The digit in the ones place can be lifted to show the zero from the 10 hiding behind the single digit card.

Use the Hide Zero cards to show teen numbers. For example, show 14 by covering the ones place of 10 with 4. Students write number bonds with 10 as a part. The teacher breaks apart the Hide Zero cards to show the two parts (10 and 4).

Hide Zero Cards



Subtraction with Cards (5 minutes)

Materials: (S) 1 deck of numeral cards (single-sided numerals from 5-group cards Lesson 5, Template 1) with 2 extra tens per pair, counters (if needed)

Note: This activity addresses the fluency objective for Grade 1 of adding and subtracting within 10.

Students place the deck of cards face down between them. Each partner flips over two cards and subtracts the smaller number from the larger number. The partner with the smallest difference keeps the cards played by both players that round. The player with the most cards at the end of the game wins.

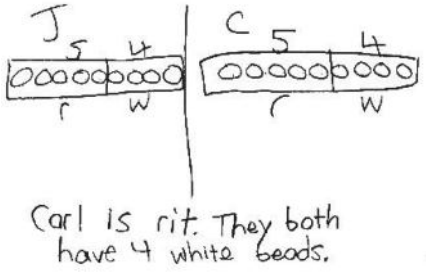
NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Some students need concrete representations to solve word problems. Provide concrete models as needed. Allow students to take on leadership roles as appropriate by developing their own stories for the class to solve.

Application Problem (7 minutes)

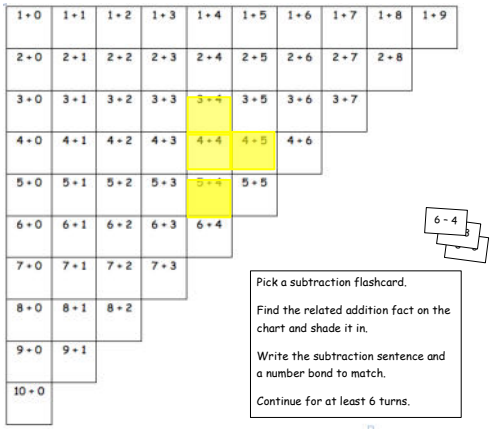
Jessie and Carl were comparing the beads they picked up. Jessie picked up 9 beads. 5 of them were red, and the rest were white. Carl picked up 5 red beads and 4 white beads. Carl said they had the same number of white beads. Is Carl correct? Draw and label your work to show your thinking.

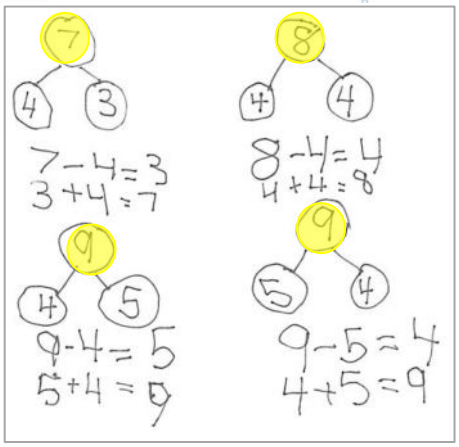
Note: This problem incorporates the Lesson 37 objective. It also asks students to solve and compare two types of word problems: *take apart* and *put together*. While students can solve this problem without knowing Carl's total, they must focus on what is being asked in the question in order to determine this. The problem also incorporates an opportunity to relate addition and subtraction, which will be the focus of today's lesson.



Concept Development (33 minutes)

Materials: (T) Addition chart (Lesson 21 Template), subtraction expression cards (Template) (S) Addition chart (Lesson 21 Template), subtraction expression cards (Template) per group, yellow crayon, personal white board





T: (Project addition chart.) How did this addition chart help us with our addition facts?

S: (Responses will vary.) All the +1 addends are in the same column. → The rows start with the same part. → The totals made a staircase. → The ones near each other are related, like 4 + 3 is 7, and underneath we see 5 + 3; that's one more—it's 8.

T: (Hold up subtraction expression card 7 – 4.) Write a number bond and leave the missing part empty for now.

S: (Write number bond.)

T: What is the whole?

S: 7.

T: The known part?

S: 4.

MP.7 & MP.8

T: Which of the addition problems on your chart have a part that is 4? Talk to your partner.

S: The ones here, going across. → It's the row that starts with 4 + 0. → There is one here, too, going down. → It starts with 1 + 4.

T: The chart tells the parts but not the totals. Which of those problems have the same total as 7 – 4? Don't call out the answer.

S: (Wait for the signal.) 4 + 3. → 3 + 4.

T: Let's color in 4 + 3 and 3 + 4 on our chart with yellow and fill in our number bond with the missing part.

T: Let's also color our totals yellow.

S: (Color in the chart and complete the number bond.)

T: Write the subtraction number sentence from the card we started with. Write the addition number sentence that helped us solve it.

S: (Write 7 – 4 = 3 and 4 + 3 = 7.)

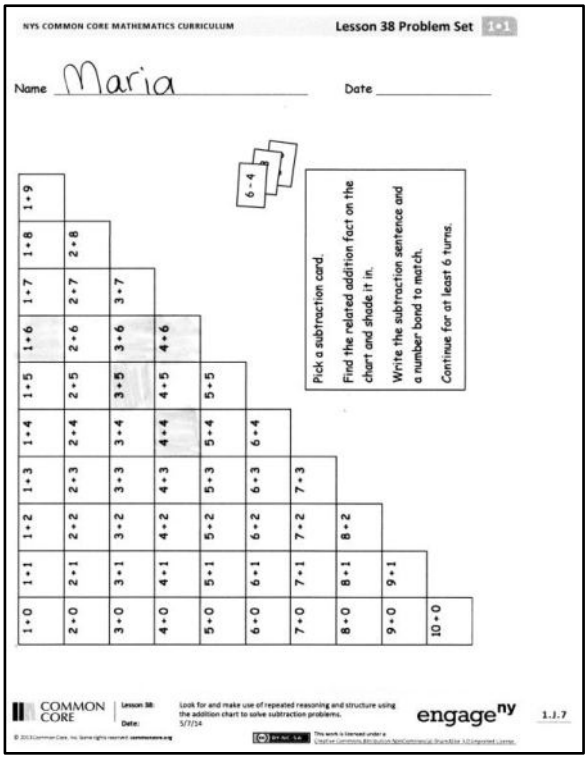
Repeat the process with the following suggested sequence: 8 – 4, 9 – 4, and 9 – 5. Record the number sentences on the board to be used during the Student Debrief.

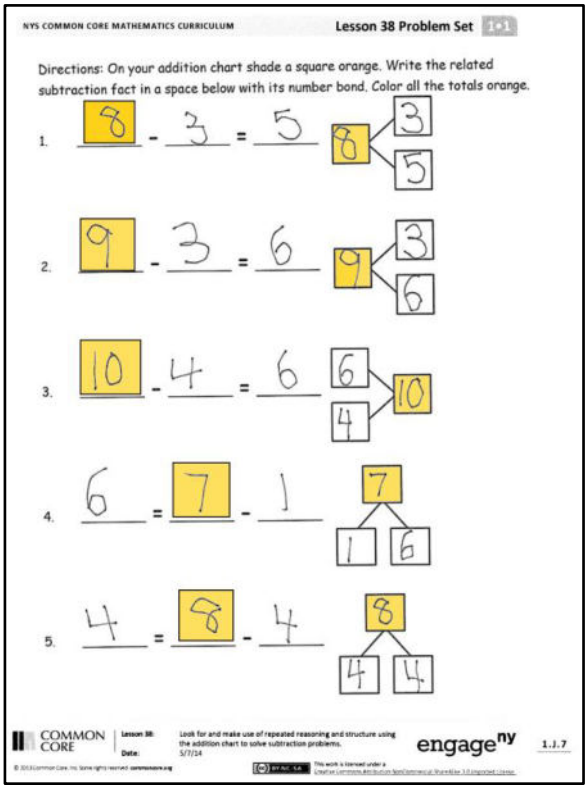
NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Using personal white boards with an addition chart template allows all learners to participate. Some students might not feel comfortable participating orally, while others may not be able to respond orally. They can show what they know on their boards.

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted 10 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students solve these problems using the RDW approach used for Application Problems.





Student Debrief (10 minutes)

Lesson Objective: Look for and make use of repeated reasoning and structure using the addition chart to solve subtraction problems.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

Any combination of the questions below may be used to lead the discussion.

- Look at the subtraction problems we solved during the lesson. (Point to sequence of 7 – 4, 8 – 4, 9 – 4, and 9 – 5.) What do you notice about these problems? Where are the helpful addition facts for these subtraction sentences located on your chart? How can solving the first one help you solve the next?
- Look at your work from the class. What pattern do you notice on your chart? How are these subtraction facts related?
- What is another set of subtraction facts that would make a cross on your chart?
- When you worked through the Problem Set, was it tricky to put the totals in the right place? Why?

- What tool did we use in a new way to solve subtraction problems today? Explain how the tool helped you.
- How did the Application Problem connect to today's lesson?

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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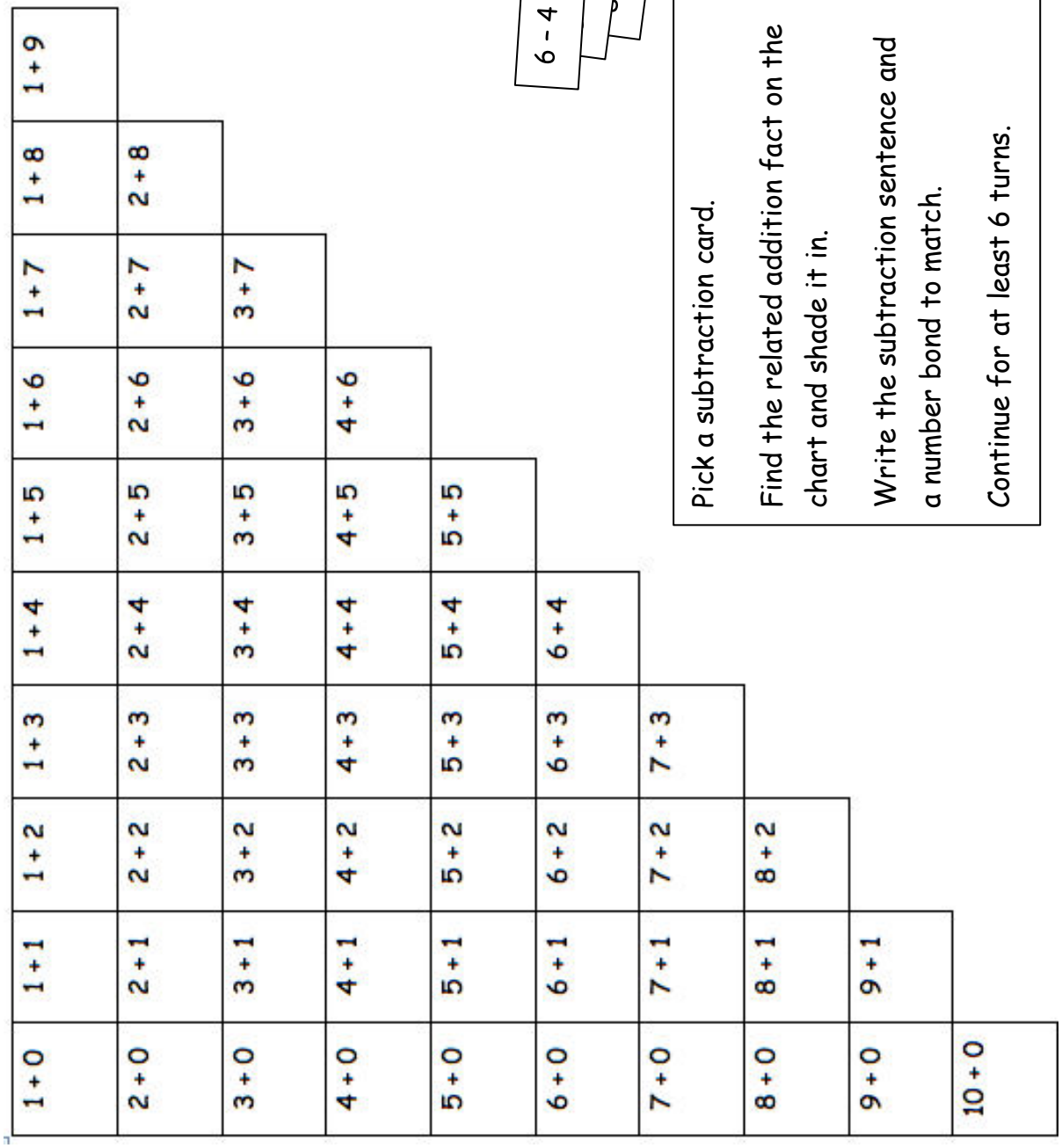
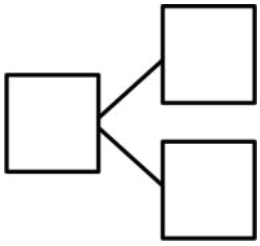
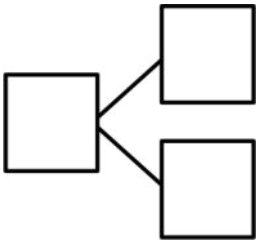


On your addition chart, shade a square orange. Write the related subtraction fact in a space below with its number bond. Color all the totals orange.

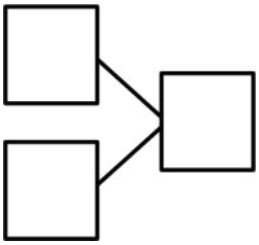
1. _____ - _____ = _____



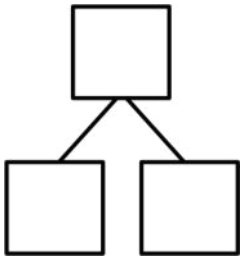
2. _____ - _____ = _____



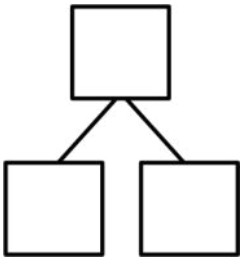
3. _____ - _____ = _____



4. _____ = _____ - _____



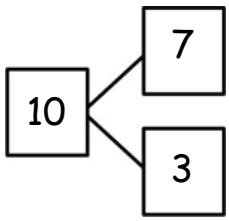
5. _____ = _____ - _____



Name _____ Date _____

Write the related number sentences for the number bonds.

1.



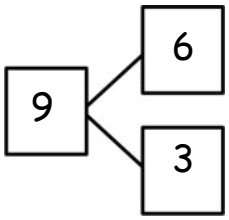
_____ - _____ = _____

_____ + _____ = _____

_____ ◯ _____ = _____

_____ ◯ _____ = _____

2.



_____ - _____ = _____

_____ + _____ = _____

_____ ◯ _____ = _____

_____ ◯ _____ = _____

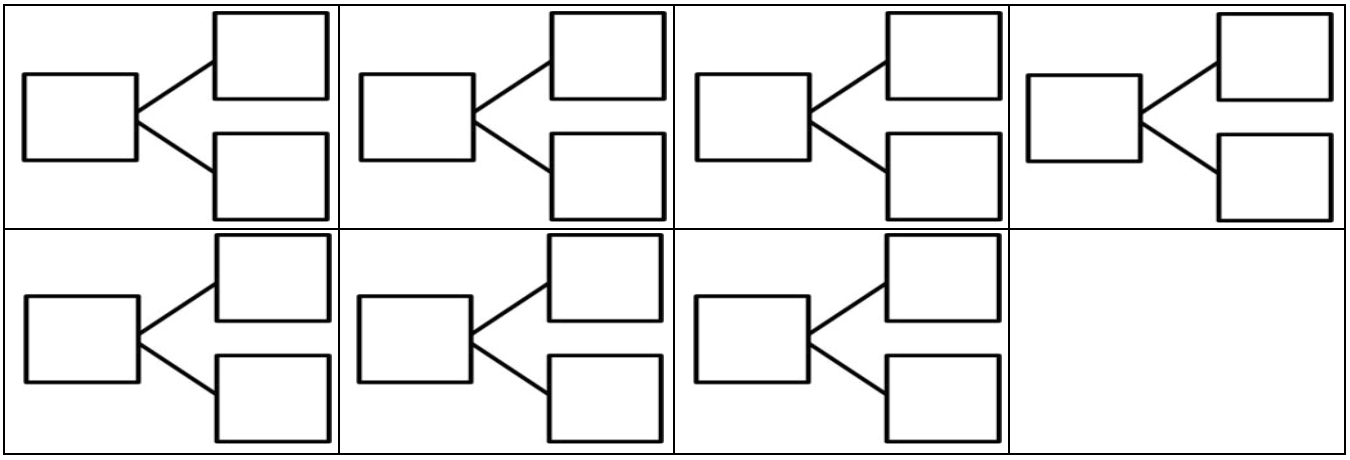
Name _____ Date _____

Find and solve the 7 unshaded addition problems that are doubles and 5-groups.

Make subtraction flashcards for the related subtraction facts. (Remember, doubles will only make 1 related subtraction fact instead of 2 related facts.)

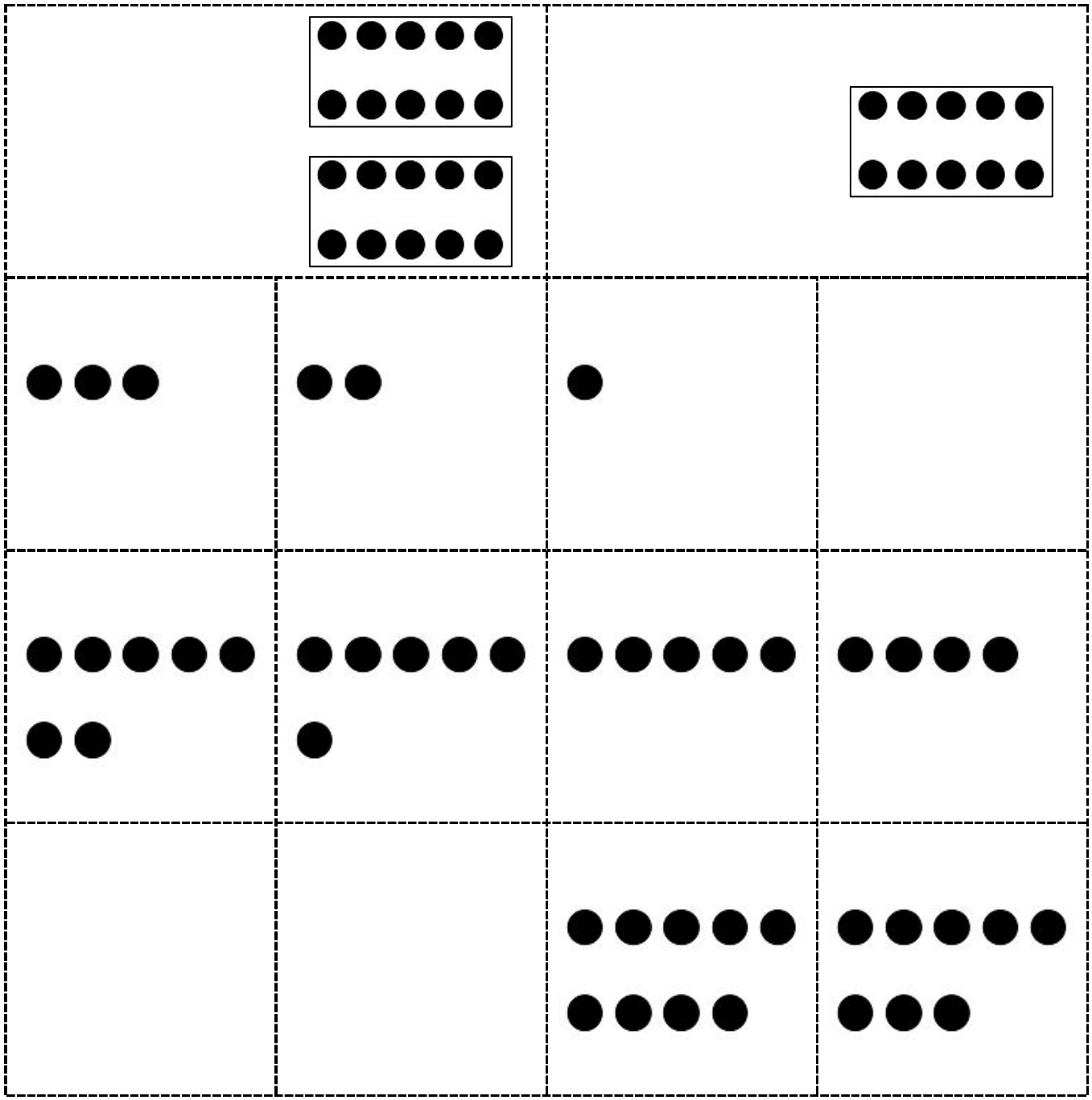
Make a number bond card and use your cards to play Memory.

1 + 0	1 + 1	1 + 2	1 + 3	1 + 4	1 + 5	1 + 6	1 + 7	1 + 8	1 + 9
2 + 0	2 + 1	2 + 2	2 + 3	2 + 4	2 + 5	2 + 6	2 + 7	2 + 8	
3 + 0	3 + 1	3 + 2	3 + 3	3 + 4	3 + 5	3 + 6	3 + 7		
4 + 0	4 + 1	4 + 2	4 + 3	4 + 4	4 + 5	4 + 6			
5 + 0	5 + 1	5 + 2	5 + 3	5 + 4	5 + 5				
6 + 0	6 + 1	6 + 2	6 + 3	6 + 4					
7 + 0	7 + 1	7 + 2	7 + 3						
8 + 0	8 + 1	8 + 2							
9 + 0	9 + 1								
10 + 0									



1	0	2	0
0	1	2	3
4	5	6	7
8	9		

hide zero cards, numeral side (Copy double-sided with next page.)



hide zero cards, 5-group side (Copy double-sided with previous page.)

6 - 4	9 - 1
5 - 2	10 - 4
9 - 7	4 - 3
8 - 3	7 - 1
3 - 2	9 - 8

subtraction expression cards

4 - 1	8 - 7
10 - 2	7 - 3
9 - 5	5 - 0
10 - 7	7 - 2
9 - 3	5 - 4

subtraction expression cards

6 - 5	8 - 0
3 - 1	6 - 2
10 - 10	9 - 2
8 - 6	4 - 4
1 - 1	4 - 2

subtraction expression cards

7 - 0	7 - 6
7 - 4	9 - 9
4 - 0	5 - 1
2 - 1	5 - 3
0 - 0	10 - 0

subtraction expression cards

8 - 1	3 - 3
6 - 3	10 - 1
8 - 2	10 - 8
6 - 1	7 - 7
1 - 0	5 - 5

subtraction expression cards

6 - 0	10 - 9
8 - 4	10 - 3
6 - 6	10 - 6
9 - 6	10 - 5
3 - 0	2 - 2

subtraction expression cards

2 - 0	7 - 5
8 - 5	8 - 8
9 - 0	9 - 4

subtraction expression cards