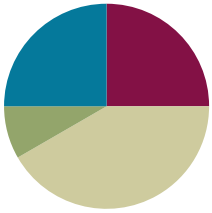
Lesson 8

Objective: Represent all the number pairs of 10 as number bonds from a given scenario, and generate all expressions equal to 10.

Suggested Lesson Structure

Fluency Practice	(15 minutes)
Application Problem	(5 minutes)
Concept Development	(25 minutes)
Student Debrief	(15 minutes)
Total Time	**(60 minutes)**



Fluency Practice (15 minutes)

- Skip-Counting Squats **1.OA.5** (2 minutes)
- Target Practice: 8 and 9 **1.OA.6** (8 minutes)
- Number Bond Dash: 9 **1.OA.6** (5 minutes)

Skip-Counting Squats (2 minutes)

Note: This activity supports the connection of counting on by 2 to adding 2 and counting back by 2 to subtracting 2.

Have students count up from 0 to 20 and back two times, squatting down and touching the floor on odd numbers and standing up for even numbers.

- For the first count, instruct students to whisper when they squat and talk normally when they stand.
- On the second count, encourage students to try thinking of the numbers in their heads when they squat and whisper when they stand.

.

NOTES ON MULTIPLE MEANS OF REPRESENTATION:

Since not all students will be able to participate in this game, adjust the cues for certain students. Deaf and hard-of-hearing students can participate easily in games with visual signals. Blind and visually impaired students can participate by using audible signals, such as snaps.

Target Practice: 8 and 9 (8 minutes)

Materials: (S) Per pair: 9 counters, 1 die

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

Assign students partners. Give each set of partners 8 counters. Instruct them to take turns as the Roller and the Target Finder. The Roller rolls the dice. The Target Finder determines the partner to 8. Students may use counters as needed. First, play with 8 as the target number, and then distribute another counter to each set of partners and practice finding numerical partners to 9.

Number Bond Dash: 9 (5 minutes)

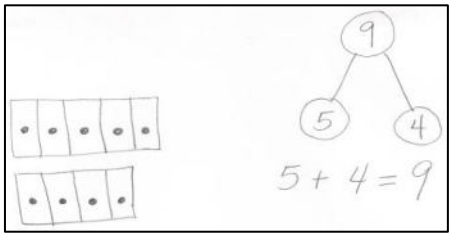
Materials: (T) Stopwatch or timer (S) Number bond dash 9 (Fluency Template), marker to correct work

Note: By using the same system, the Number Bond Dash, students focus on the mathematics, rather than figuring out the worksheet.

Follow procedure for the Number Bond Dash (see Lesson 5 Fluency Practice.)

Application Problem (5 minutes)

Rayden received 9 stickers at school. He received 5 stickers in the morning. How many stickers did he receive in the afternoon? Draw a picture, a number bond, and a number sentence to show how you know.



Note: This problem is designed as a bridge from the previous lesson's focus on decompositions of 9 and provides a lead-up to today's Concept Development as students prove that 10 can be decomposed in many ways.

Concept Development (25 minutes)

Materials: (T) Chart to record decompositions of 10, 10 children on the playground picture card (Template), linking cubes in two colors (for Debrief) (S) Pipe cleaners, 10 beads (5 of one color, 5 of another color)

Rekenrek bracelet with 5 white beads and 5 red beads

T: Talk with your partner. What comes in groups of 10?

S: (Discuss. Possible responses include 10 fingers, 10 toes, 10 dimes in a dollar, 10 digits in a phone number, and 10 hot dogs.)

T: We remember from Kindergarten that 10 is an important number. We're going to start by making bracelets with 10 beads to help us show all of the different ways to make 10. We will call these *Rekenrek bracelets* because they have beads organized in rows of 5 and 5, just like a Rekenrek.

Walk students through the process of making a bracelet with 10 beads (5 of 1 color, 5 of another).

T: Let's use our Rekenrek bracelets to find out all of the different ways to make 10.

T: (Display template showing children on a playground.) Look at the picture. Talk with your partner about the different parts you see. (Circulate.)

S: (Discuss.)

T: I heard someone say they saw 4 kids on the swing set. Show that on your bracelet.

S: (Show 4 beads to the side.)

T: If 4 kids are on the swings, how many kids are not?

S: 6.

T: What are the parts?

S: 6 and 4.

T: What strategy should we use to find the total?

S: Count on!

T: Touch and count, starting from 4.

S: Fouuuur, 5, 6, 7, 8, 9, 10.

T: What's our total?

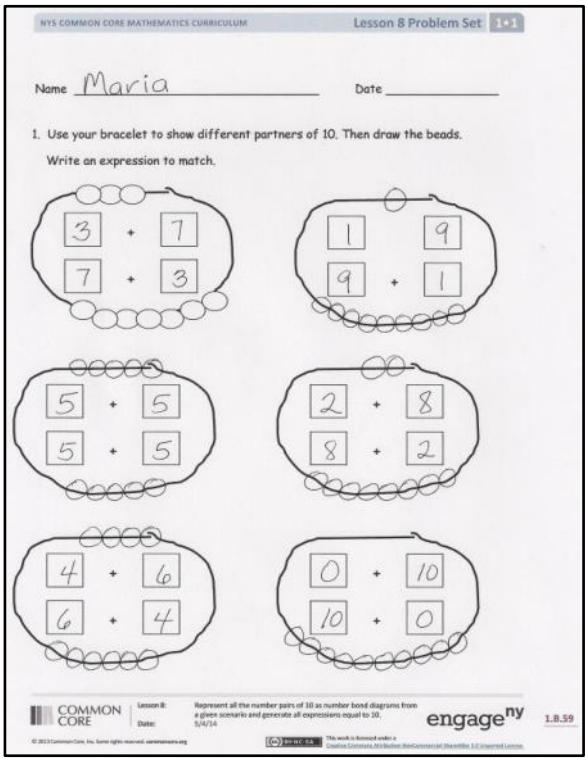
S: 10.

Write the expressions 4 + 6 and 6 + 4 on chart paper. Repeat the above process several times, to familiarize students with showing the decompositions on their Rekenrek bracelets. Record each set of expressions on the chart paper. Have students keep these for use in Topic I.

Problem Set (10 minutes)

Distribute the Problem Set, and then have students use their Rekenrek bracelets to move the beads and record all of the decompositions of 10 on their own. Students should save these as part of their number bond portfolios. They should also save the Rekenrek bracelets.

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.


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 8 Problem Set 1•1

Name Maria Date

1. Use your bracelet to show different partners of 10. Then draw the beads. Write an expression to match.

3 + 7
7 + 3

1 + 9
9 + 1

5 + 5
5 + 5

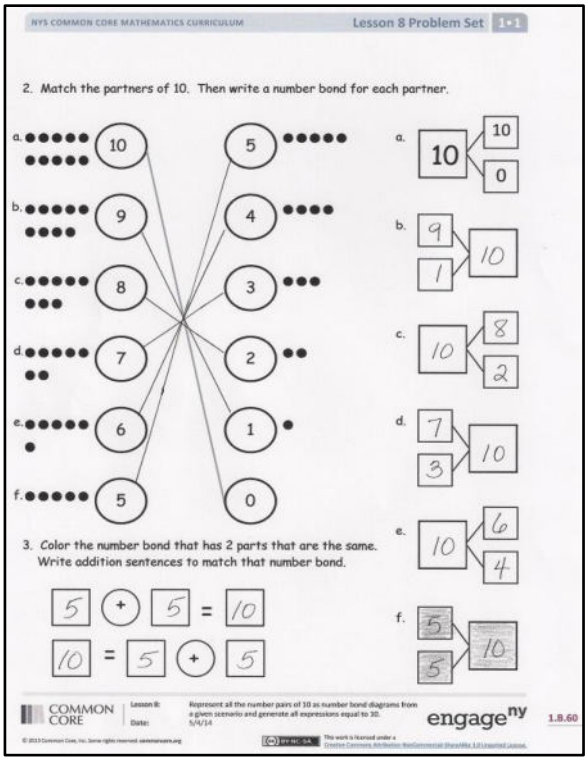
2 + 8
8 + 2

4 + 6
6 + 4

0 + 10
10 + 0

COMMON CORE Lesson 8: Date: Represent all the number pairs of 10 as number bond diagrams from a given scenario and generate all expressions equal to 10. 5/4/14 engage^ny 1.8.59

Student Debrief (15 minutes)



Lesson Objective: Represent all the number pairs of 10 as number bonds from a given scenario, and generate all expressions equal to 10.

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.

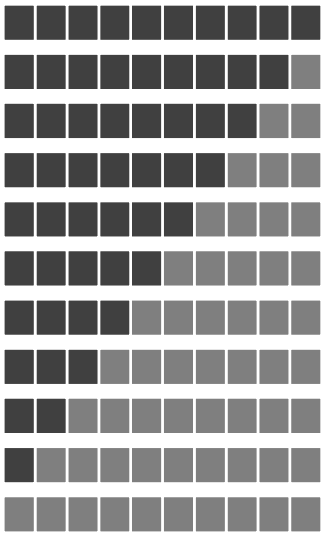
Any combination of the questions below may be used to lead the discussion.

Have students come to the meeting area and look at the 10 linking cubes showing the decompositions of 10.

- Talk with your partner. What patterns do you see?
- Look from left to right. What is happening each time?
- Are there any sticks that have the same parts?
- How are these sticks different?

Exit Ticket (3 minutes)

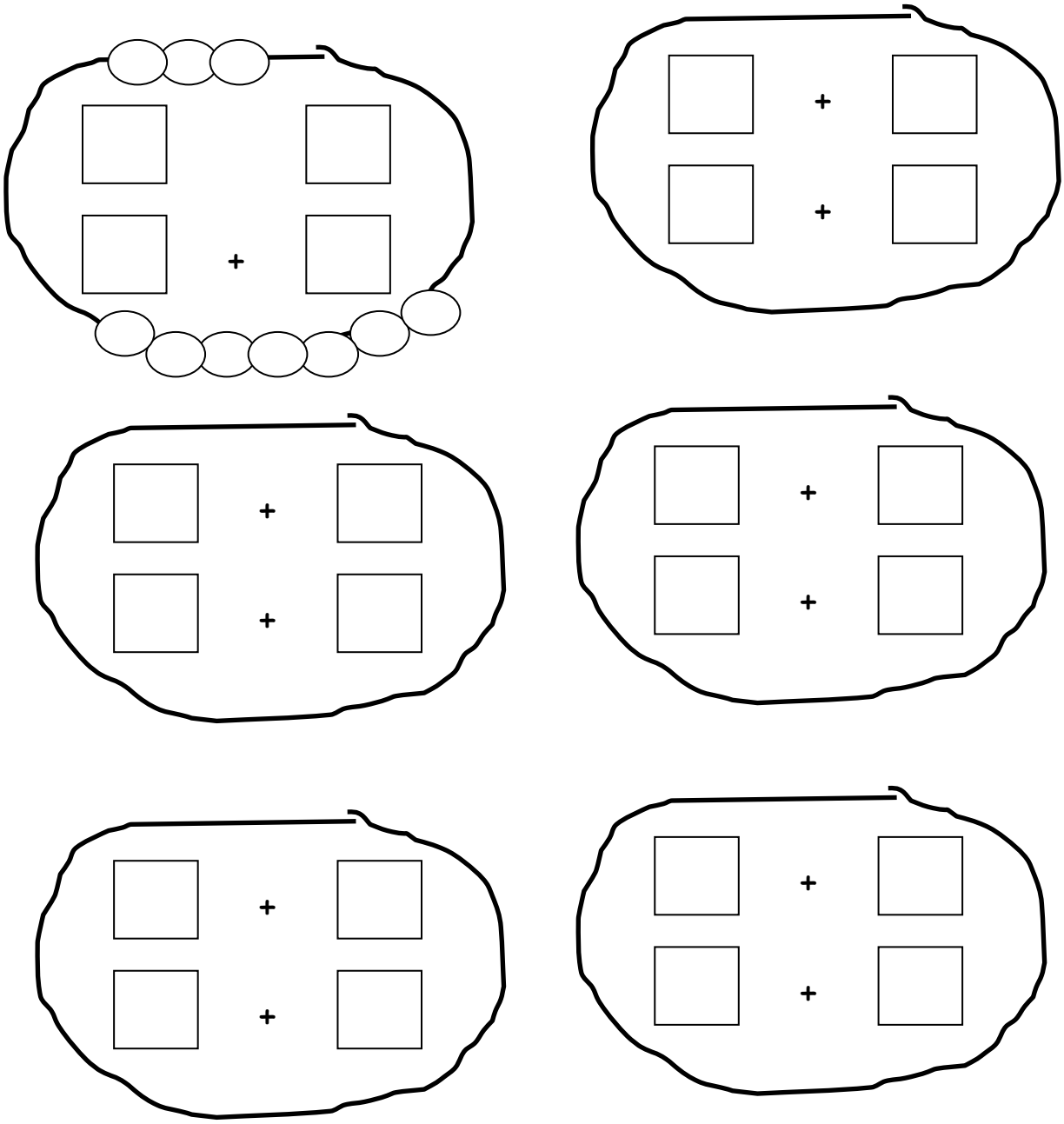
After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.



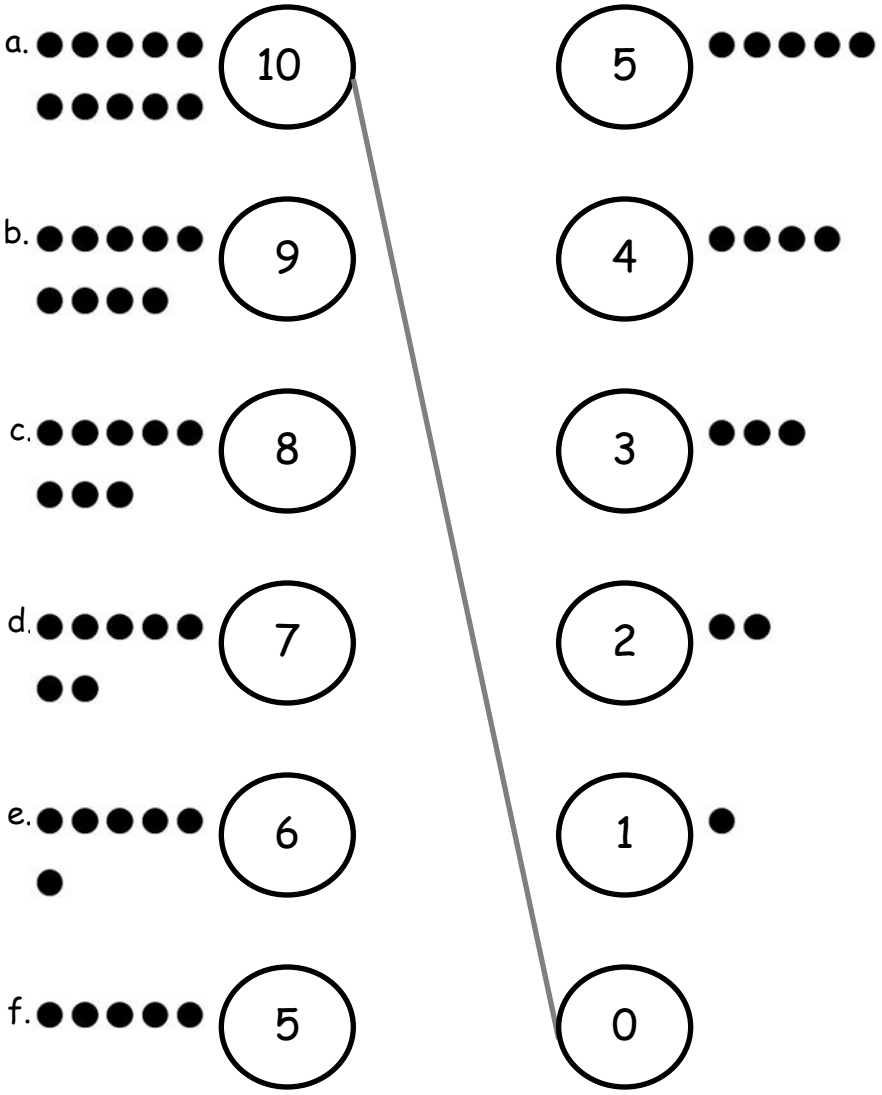
Linking cubes showing the patterns in the decompositions of 10.

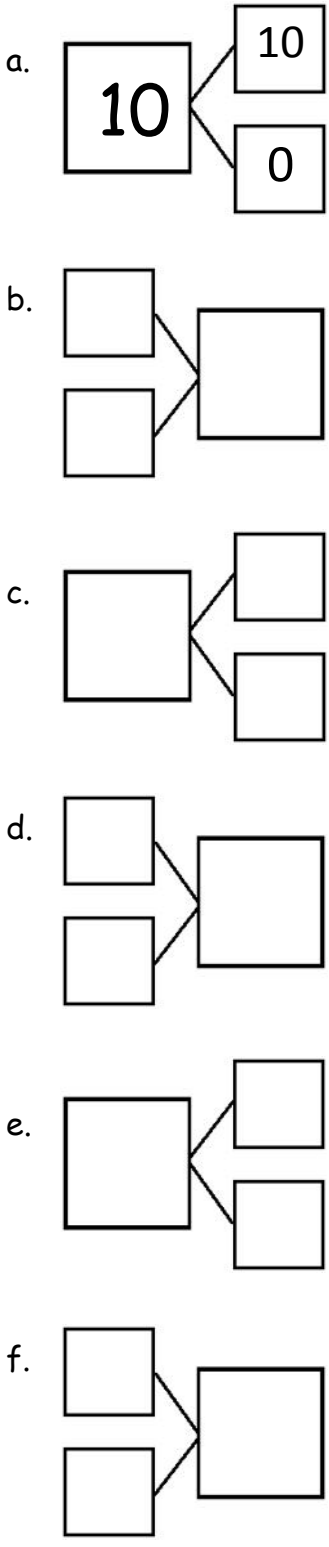
Name _____ Date _____

1. Use your bracelet to show different partners of 10. Then, draw the beads. Write an expression to match.

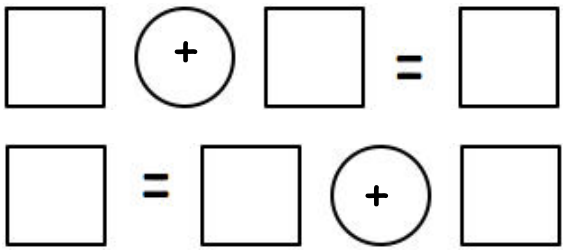


2. Match the partners of 10. Then, write a number bond for each partner.



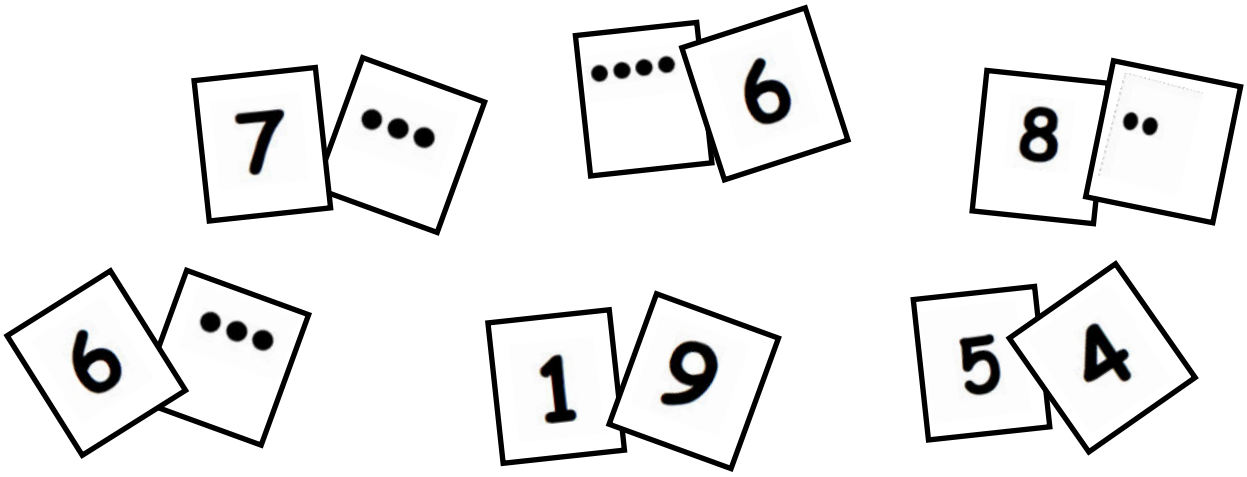


3. Color the number bond that has 2 parts that are the same. Write addition sentences to match that number bond.



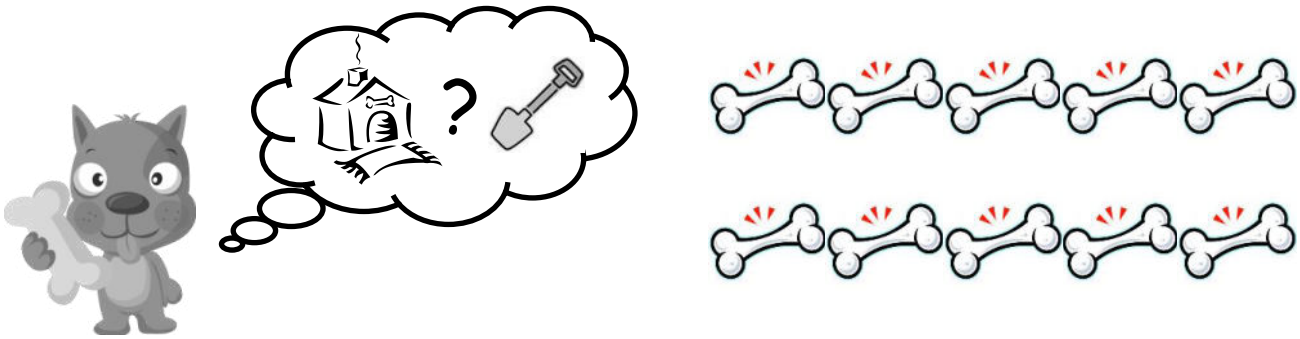
Name _____ Date _____

Color the partners that make 10.

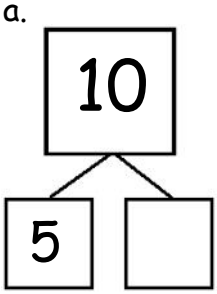


Name _____ Date _____

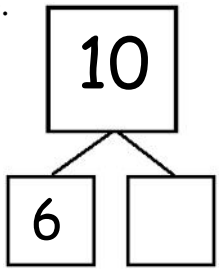
1. Rex found 10 bones on his walk. He can't decide which part he wants to bring to his doghouse and which part he should bury. Help show Rex his choices by filling in the missing parts of the number bonds.



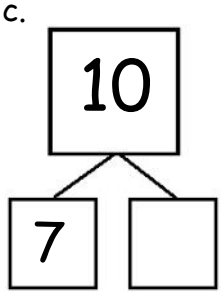
a.



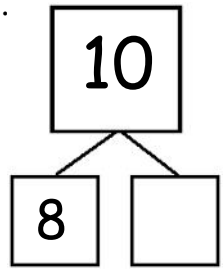
b.



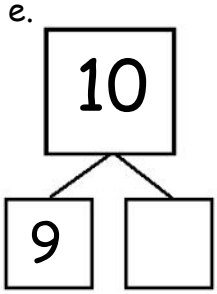
c.



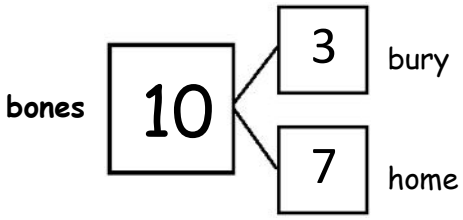
d.

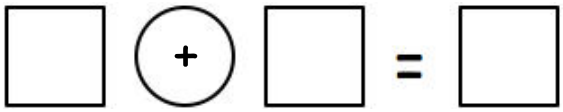


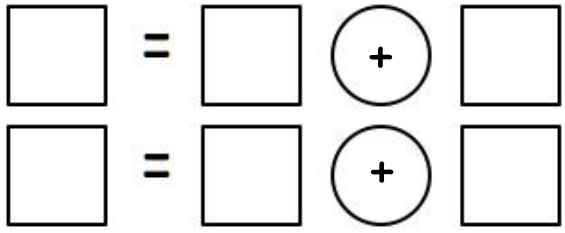
e.



2. He decided to bury 3 and bring 7 back home. Write all the adding sentences that match this number bond.

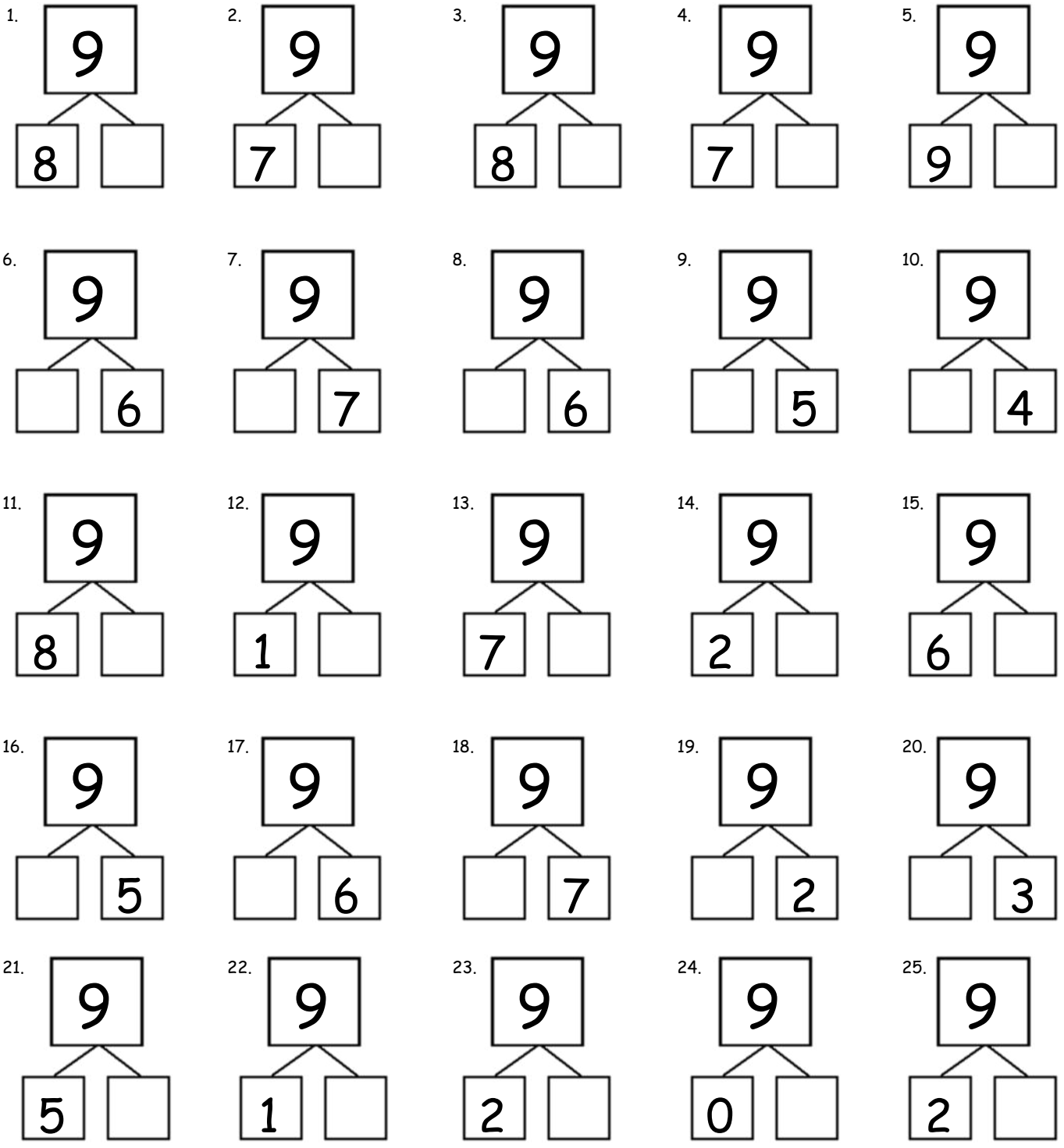




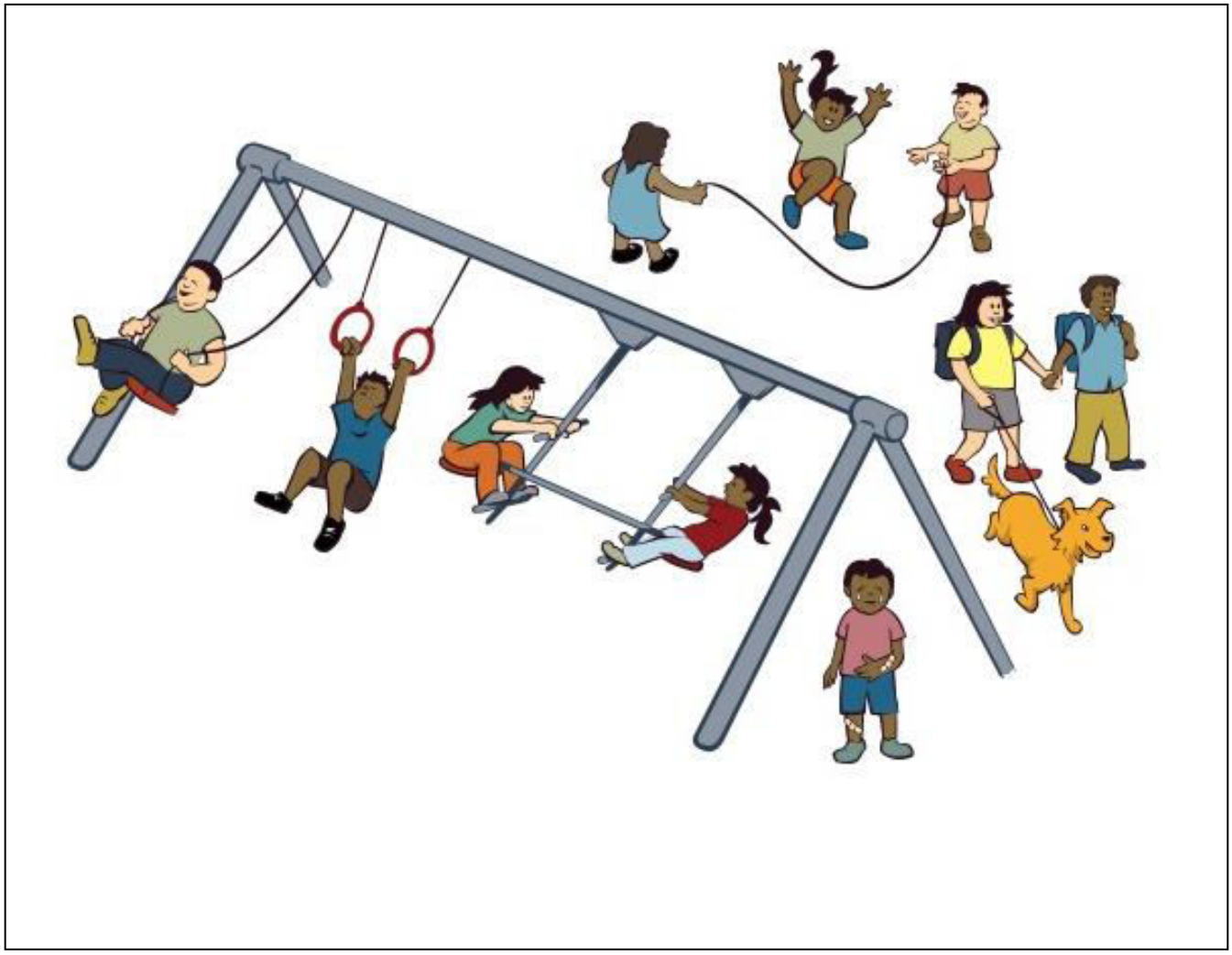


Name _____ Date _____

Do as many as you can in 90 seconds. Write the number of bonds you finished here: _____



number bond dash 9



10 children on the playground picture card