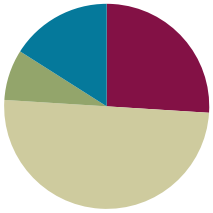
Lesson 25

Objective: Model decompositions of 9 using a story situation, objects, and number bonds.

Suggested Lesson Structure

Fluency Practice	(13 minutes)
Application Problem	(4 minutes)
Concept Development	(25 minutes)
Student Debrief	(8 minutes)
Total Time	**(50 minutes)**



Fluency Practice (13 minutes)

- Rekenrek Wave **K.NBT.1** (3 minutes)
- 5-Group Flashes **K.OA.5** (5 minutes)
- Take Apart the Array **K.OA.3** (5 minutes)

Rekenrek Wave (3 minutes)

Materials: (T) 20-bead Rekenrek

Note: This fluency activity anticipates the work of Module 5. Developing automaticity with the counting sequence in conventional language facilitates the work with teen numbers.

T: You've become very good at counting with the Rekenrek the Say Ten Way. I want to teach you the regular way to say the numbers that come after 10. (Show 10 beads on the top row of the Rekenrek). Here is 10. 1 more than 10 is 11. (Slide over 1 more bead.) Say "eleven."

S: Eleven.

T: How many beads do you see?

S: 11.

T: 1 more than 11 is 12. (Slide over 1 more bead.) Say "twelve."

S: Twelve.

T: How many beads now?

S: 12.

Repeat this process to 13. Then, continue with the following possible sequence: 11, 12, 11, 12, 13, 12, 13, 12, 11. Direct students to gradually raise their hands as the numbers increase and lower their hands as the numbers decrease, mimicking the motion of a wave.

5-Group Flashes (5 minutes)

Materials: (T) Large 5-group cards (1–4) (Lesson 12 Fluency Template 2) (S) Personal white board

Note: This fluency activity seeks to build on students' understanding of comparison to demonstrate the relationship between number partners.

T: (Show 4 dots.) How many dots do you see?
S: 4.
T: How many more to make 5?
S: 1.
T: Say the number sentence.
S: 4 plus 1 equals 5.
T: Write the number sentence on your personal white board. Get ready. Show me.
S: (Display 4 + 1 = 5.)

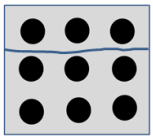
Continue with the following possible sequence: 3, 2, 1, 4, 2, and 3.

Take Apart the Array (5 minutes)

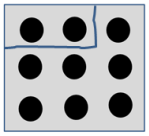
Materials: (S) Array of 9 (Fluency Template), personal white board

Note: This activity prepares students to work with decomposing 9 at the pictorial level.

T: (Project or show array of 9.) Let's count the dots. Ready?
S: 1, 2, 3, 4, 5, 6, 7, 8, 9.
T: So, our job is to take apart…?
S: 9.
T: We can take apart the 9 dots by drawing a straight line like this. (Demonstrate.) How many dots are in this part? (Point to indicate which part to count.)



S: 3.
T: The other part? (Provide wait time and a signal, such as a clap of the hands, for the answer of 6 to allow time for those students who need to count all 6 dots).
S: 6.
T: (Record the number bond.) We can read it like this: 9 is 3 and 6. Echo me, please.
S: 9 is 3 and 6.
T: (Erase the line, but do not erase the number bond.) We can also take apart the 9 dots with a line that looks like an *L*. (Demonstrate.) How many dots are in this part? (Point to indicate which part to count.)



S: 2.
T: The other part? (Provide wait time and a signal, such as a clap of the hands, for the answer of 7 to allow time for those students who need to count all 7 dots.)
S: 7.

T: (Record the number bond.) We can read it like this: 9 is 2 and 7. Echo me, please.

S: 9 is 2 and 7.

T: Now, it's your turn to take apart 9.

If necessary, complete another example with the class, or direct students to work independently on drawing lines and recording decompositions of 9 as number bonds. After some time, invite students to explain how they know they have found all of the ways to take apart 9.

Application Problem (4 minutes)

Materials: (S) Personal white board

There were 9 flowers in Casey's beautiful garden. She had 2 vases. Draw 1 way she could have put all of the flowers into the vases. Show your picture to your partner. Did he draw the flowers in the vases the same way? Are both ways right? Are there other ways you could have shown the flowers?

Note: Thinking about different ways to decompose 9 and discussing them with a partner sets the stage for today's lesson.

NOTES ON MULTIPLE MEANS OF ACTION AND EXPRESSION:

Give students working below grade level linking cubes or counting sticks (or another manipulative) to show the Application Problem before asking them to draw their results. Manipulatives ease the conceptual transference from concrete to pictorial to abstract.

Concept Development (25 minutes)

Materials: (S) 9 teddy bear counters or other manipulatives and 1 paper bowl (per pair), personal white board

T: There were 9 bears in the forest. Some bears went to sleep in their caves, and some left to find a honey tree. Use your counters to show the bears. How many bears were there in all?

S: 9.

T: I wonder how many bears were sleeping. Who would like to share an idea?

S: I think that 3 bears were sleeping and that the other ones went to the honey tree.

T: Great! Let's use your set of counters to show 3 sleeping bears and the rest of your counters to show the honey tree–hunting bears. Arrange your counters to show the different groups. (Allow time for children to model the situation, circulating to ensure accuracy.)

NOTES ON MULTIPLE MEANS OF ENGAGEMENT:

Make partner work easier for English language learners by providing sentence frames, such as "I see ___ bears outside, so there are ___ bears sleeping." Practice with them a few times so they are more comfortable working with their partners.

T: Good work! Could we show this story in a number bond? How many bears are there in all? What number should go in the whole?

S: 9.

T: Good! Draw the number bond and the whole. What are our parts?
S: There are 3 sleeping and 6 hunting in the forest! → The parts are 3 and 6.
T: (Demonstrate.) Yes! We can make our 9 bears into parts of 3 and 6. Finish the number bond on your board.
T: Did anyone think about the story in another way?
S: Yes! → I imagined 7 sleeping and the rest hunting.
T: If more bears were sleeping in the story this time, do you think there will be more or fewer bears hunting for honey now? Let's show this new situation with your bears to find out!
S: More bears sleeping means that there aren't as many hunting this time!

Allow time for other student ideas and discussion, modeling of the new situations, and creation of other number bonds representing the bears. Guide the discussion if necessary to find all of the partners making 9.

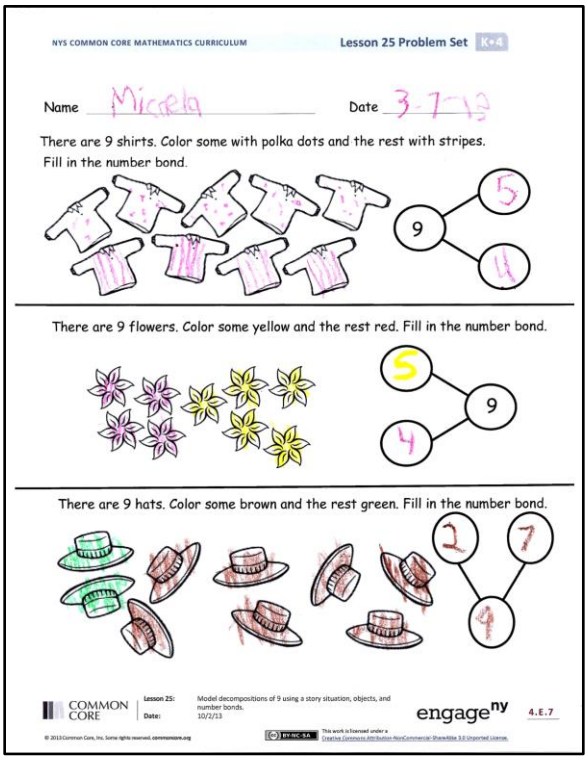
MP.4

T: You are going to play a game with your 9 teddy bears and your partner. While she closes her eyes, hide some of your bears under the bowl to show the sleepy bears in the cave. Then, tell your partner to open her eyes. How many bears are outside? Can she figure out how many bears are hiding in the cave? If not, show her. Draw a number bond to show your story, and then switch! How many partners for 9 can you find? (Allow time for play and discussion.)
T: Let's show some of the number bonds you discovered on the board! What partners did you find?
S: We found 8 and 1. → We found 4 and 5. → 7 and 2 make 9, too! (Record student number bonds on the board.)

Problem Set (10 minutes)

Students should do their personal best to complete the Problem Set within the allotted time.

Note: The teacher may first need to read each problem aloud, depending on the reading abilities of students. After explaining the problem, allow time for students to create the solution before moving on.


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 25 Problem Set K•4

Name Micaela Date 3-7-13

There are 9 shirts. Color some with polka dots and the rest with stripes.
Fill in the number bond.

9 5 4

There are 9 flowers. Color some yellow and the rest red. Fill in the number bond.

5 9 4

There are 9 hats. Color some brown and the rest green. Fill in the number bond.

2 7 9

COMMON CORE Lesson 25: Model decompositions of 9 using a story situation, objects, and number bonds. Date: 10/2/13 engage^ny 4.E.7

Student Debrief (8 minutes)

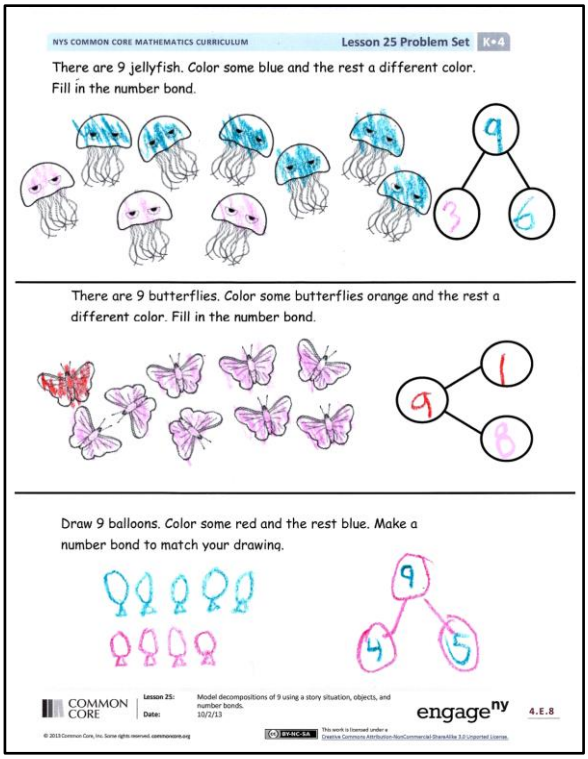
Lesson Objective: Model decompositions of 9 using a story situation, objects, and number bonds.

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.

- What strategies did you use to fill in the number bonds in the Problem Set? Did you count each of the parts, or did you think in a different way?
- How did you figure out how many bears were in the cave during your partner game?
- How did you know where to write each part of the number bond on your personal white board?
- 7 bears are sleeping, and 2 are in the honey tree. Here is the number bond. What if there were 2 bears sleeping and 7 in the honey tree? Would the number bond change? Does the story change?
- Thumbs up if you think you are getting really good at putting together and taking apart numbers to 5. (Ask a few addition and subtraction questions, such as 3 + 2, 5 – 1, 4 + 1, and 3 – 2.)


NYS COMMON CORE MATHEMATICS CURRICULUM Lesson 25 Problem Set K•4

There are 9 jellyfish. Color some blue and the rest a different color. Fill in the number bond.

9
3
6

There are 9 butterflies. Color some butterflies orange and the rest a different color. Fill in the number bond.

9
1
8

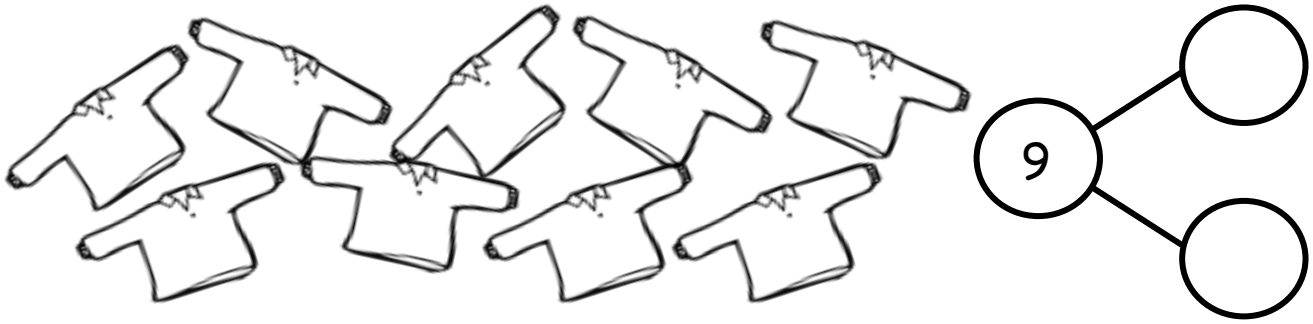
Draw 9 balloons. Color some red and the rest blue. Make a number bond to match your drawing.

9
4
5

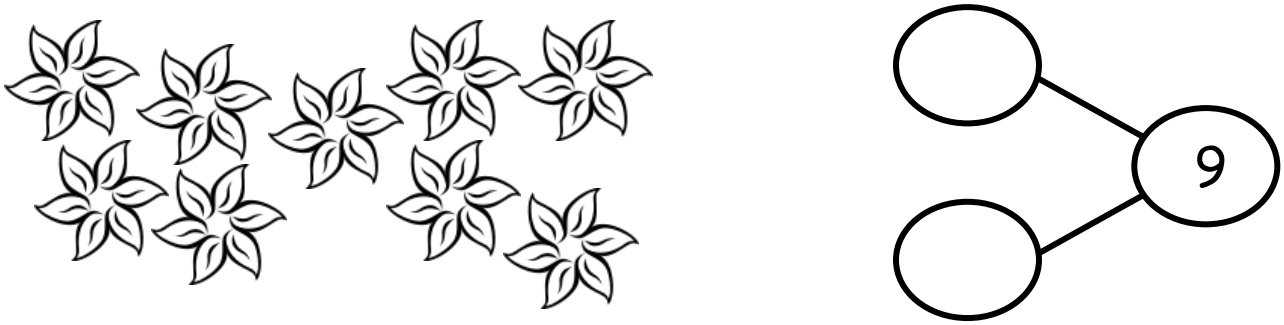
COMMON CORE Lesson 25: Model decompositions of 9 using a story situation, objects, and number bonds. Date: 10/2/13 engage^ny 4.E.8

Name _____ Date _____

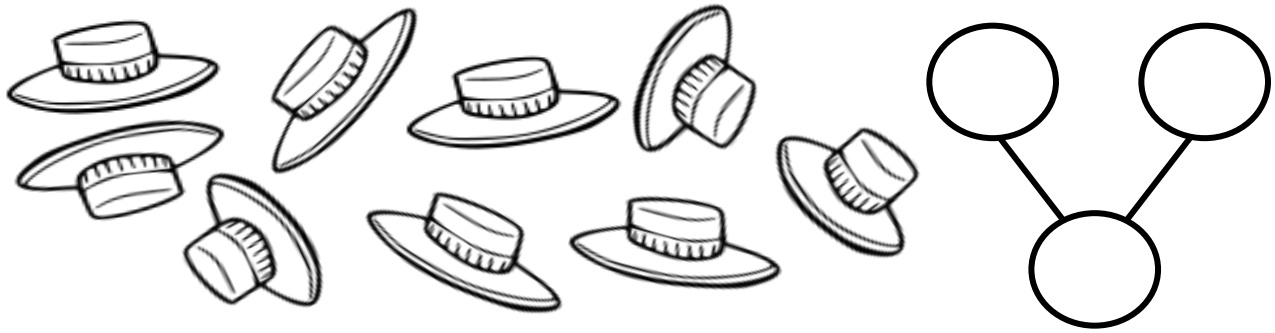
There are 9 shirts. Color some with polka dots and the rest with stripes. Fill in the number bond.



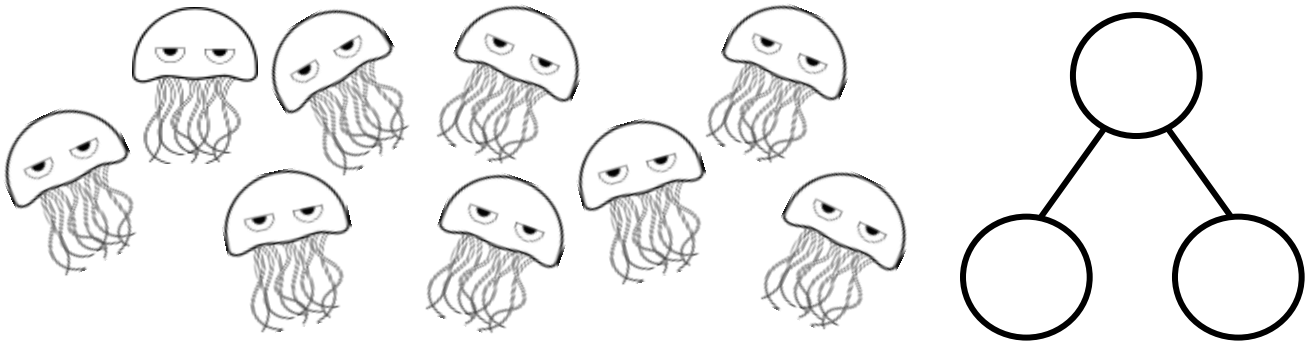
There are 9 flowers. Color some yellow and the rest red. Fill in the number bond.



There are 9 hats. Color some brown and the rest green. Fill in the number bond.



There are 9 jellyfish. Color some blue and the rest a different color. Fill in the number bond.



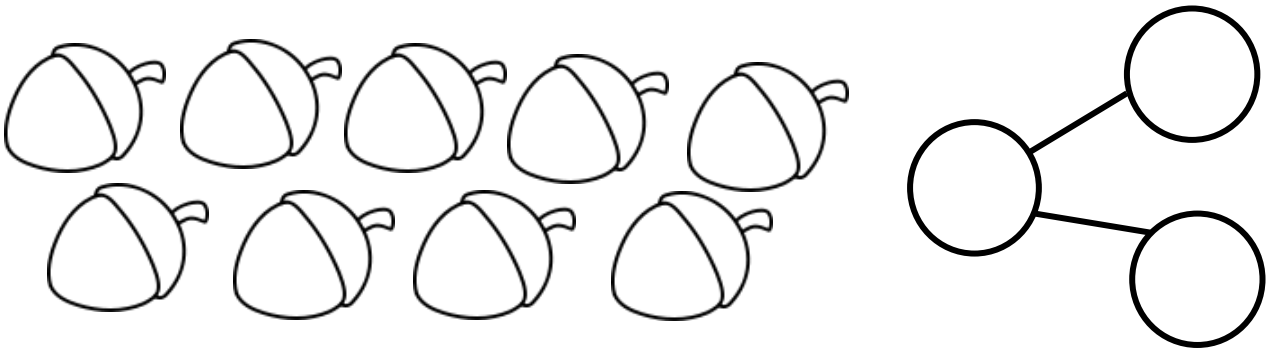
There are 9 butterflies. Color some butterflies orange and the rest a different color. Fill in the number bond.

Draw 9 balloons. Color some red and the rest blue. Make a number bond to match your drawing.

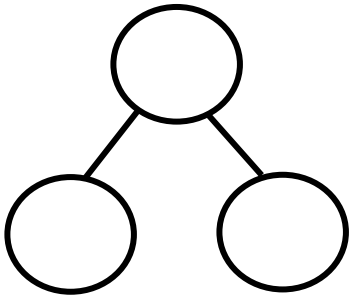
Name _____ Date _____

There are 9 leaves. Color some of them red and the rest of them yellow. Fill in the number bond to match.

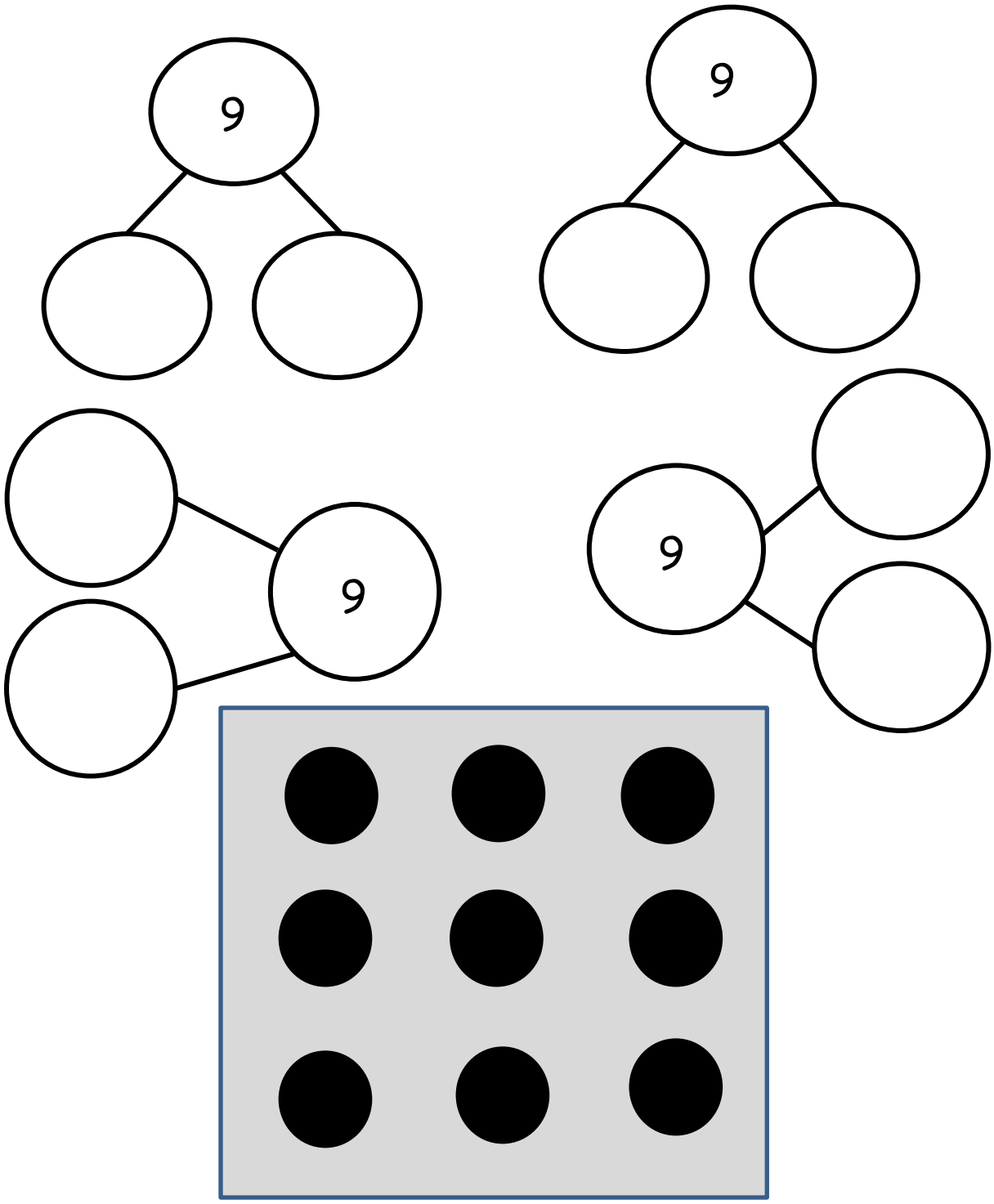
There are 9 acorns. Color some of them green and the rest yellow. Fill in the number bond to match.



Draw 9 birds. Color some of them blue and the rest red. Fill in the number bond to match.



On the back of your paper, draw 9 triangles. Color some red and some brown. Draw and fill in a number bond to match.



array of 9