

Dimensions Math[®]

Textbook 1A



Authors and Reviewers

Bill Jackson

Jenny Kempe

Cassandra Turner

Allison Coates

Tricia Salerno

Pearly Yuen

Consultant

Dr. Richard Askey

Preface

The Dimensions Math® Pre-Kindergarten to Grade 5 series is based on the pedagogy and methodology of math education in Singapore. The curriculum develops concepts in increasing levels of abstraction, emphasizing the three pedagogical stages: Concrete, Pictorial, and Abstract. Each topic is introduced, then thoughtfully developed through the use of problem solving, student discourse, and opportunities for mastery of skills.

Features and Lesson Components

Students work through the lessons with the help of five friends: Emma, Alex, Sofia, Dion, and Mei. The characters appear throughout the series and help students develop metacognitive reasoning through questions, hints, and ideas.

The colored boxes  and blank lines in the textbook lessons are used to facilitate student discussion. Rather than writing in the textbooks, students can use whiteboards or notebooks to record their ideas, methods, and solutions.

Chapter Opener

Each chapter begins with an engaging scenario that stimulates student curiosity in new concepts. This scenario also provides teachers an opportunity to review skills.

Think

Students, with guidance from teachers, solve a problem using a variety of methods.

Learn

One or more solutions to the problem in Think are presented, along with definitions and other information to consolidate the concepts introduced in Think.

Do

A variety of practice problems allow teachers to lead discussion or encourage independent mastery. These activities solidify and deepen student understanding of the concepts.

Exercise

A pencil icon  at the end of the lesson links to additional practice problems in the workbook.

Practice

Periodic practice provides teachers with opportunities for consolidation, remediation, and assessment.

Review

Cumulative reviews provide ongoing practice of concepts and skills.

Emma



Alex



Sofia



Dion



Mei



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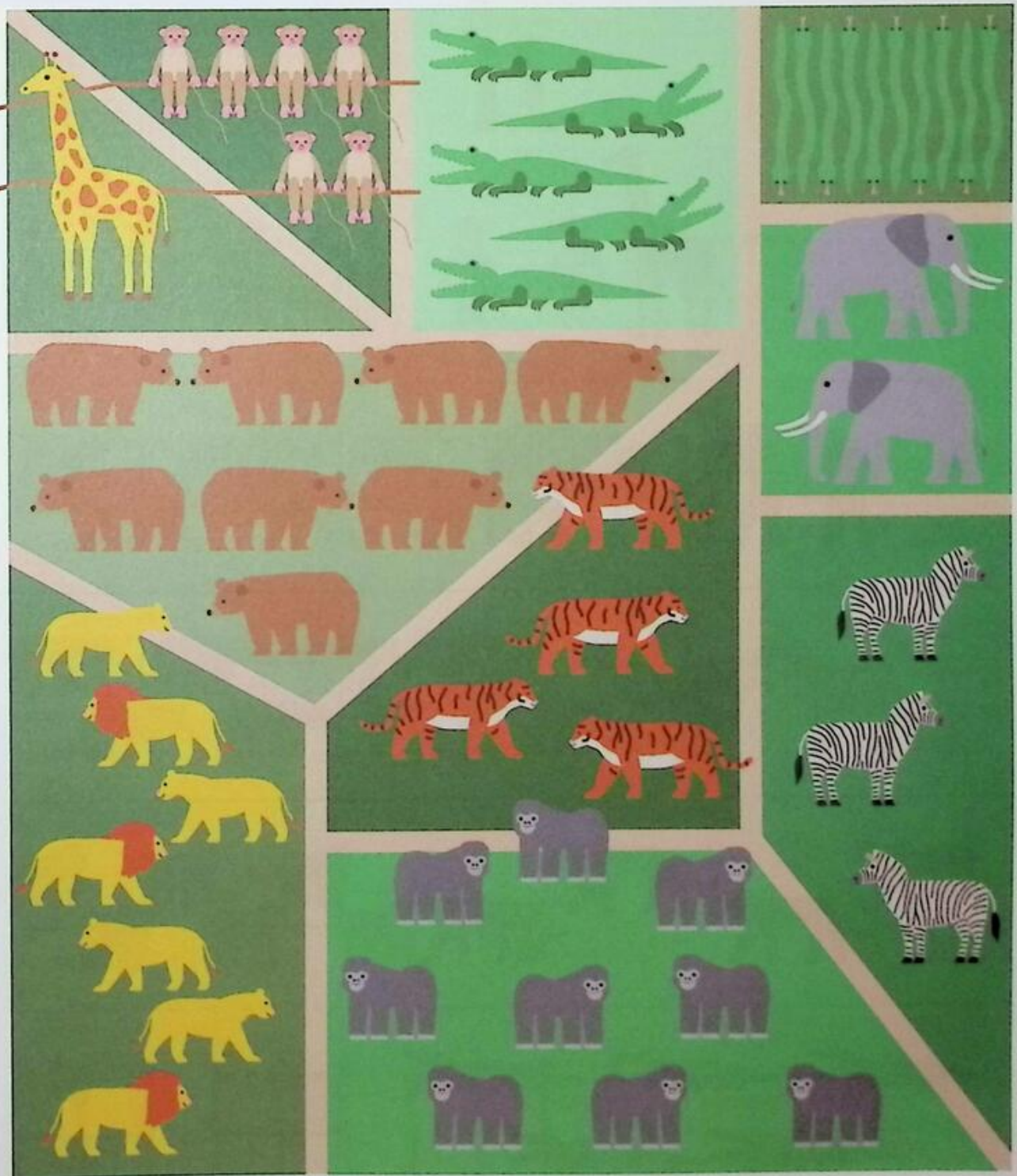
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Chapter 1

Numbers to 10



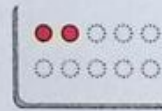
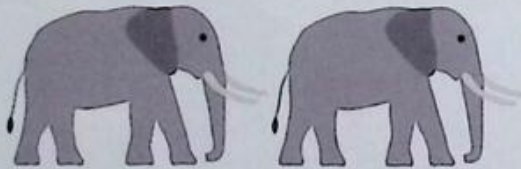
Think

How many?

Learn

1

one



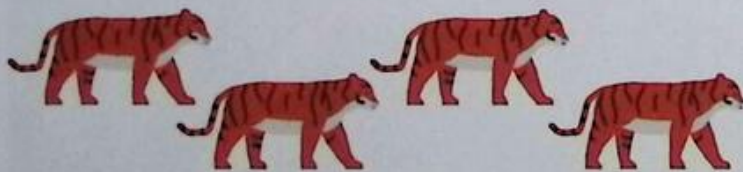
2

two



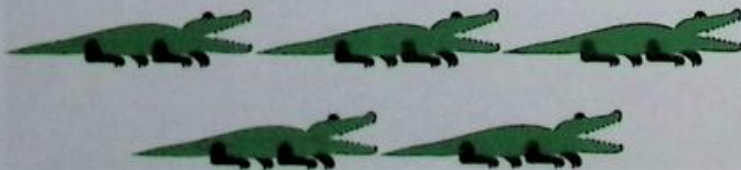
3

three



4

four



5

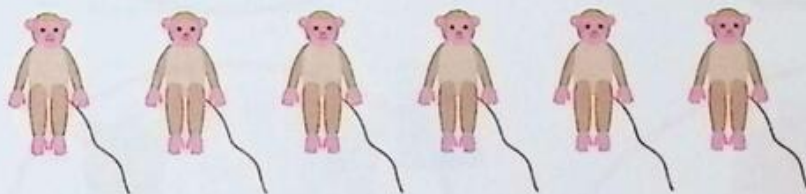
five



Be sure to count
each animal once.

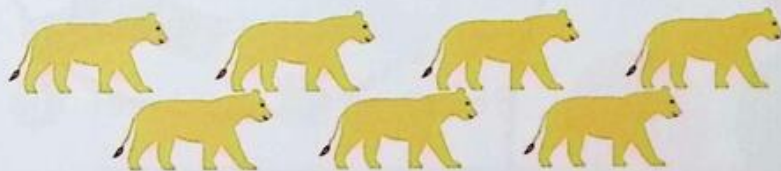


Can you tell how many dots
there are on the card without
counting them one by one?



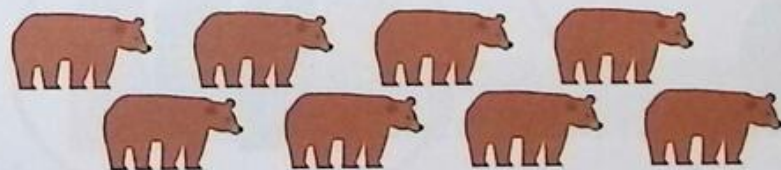
6

six



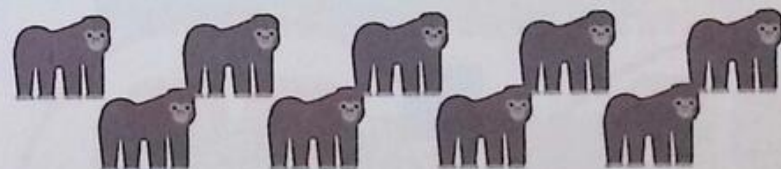
7

seven



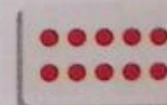
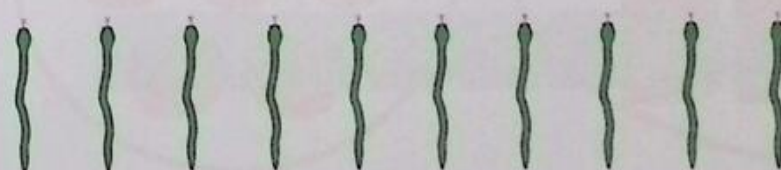
8

eight



9

nine

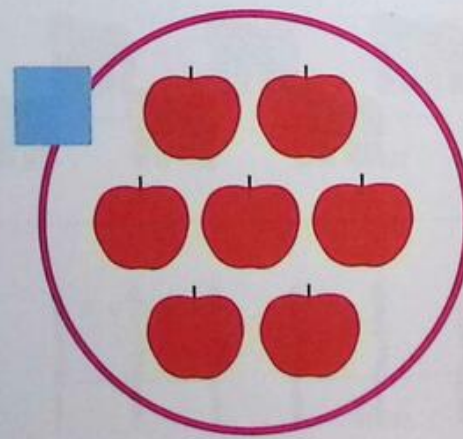
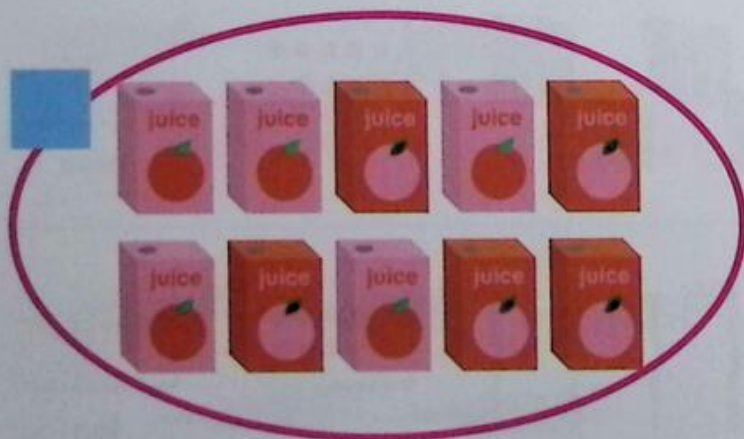
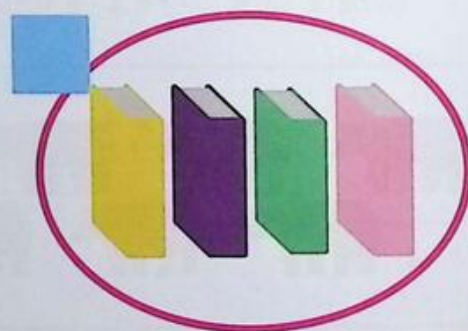
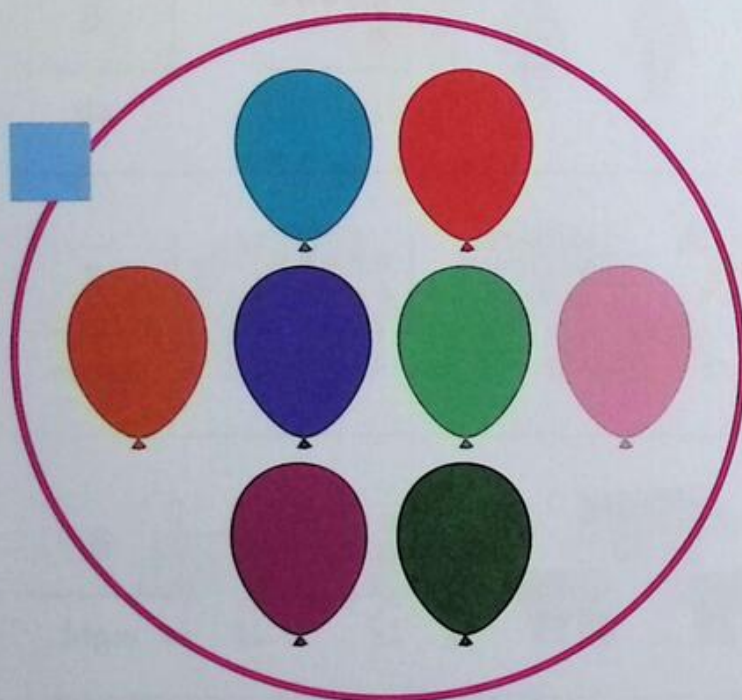
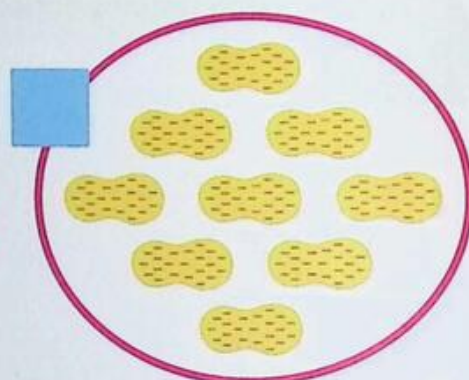
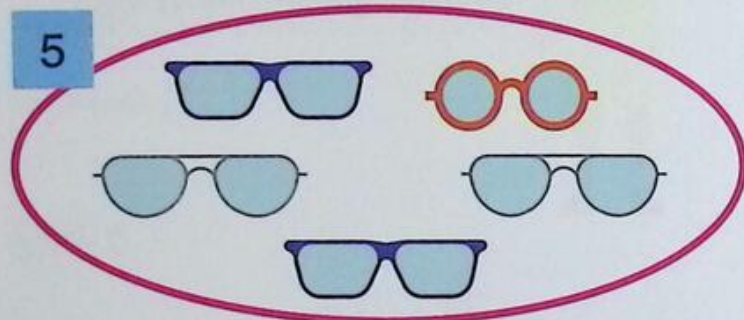


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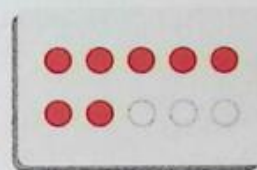
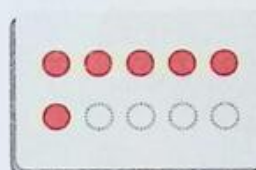
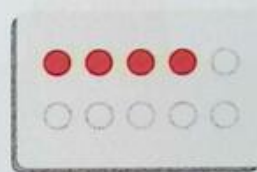
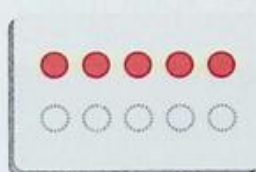
ten

Do

1 How many are in each group?



② How many ● are there?



③ How many ■ are there?



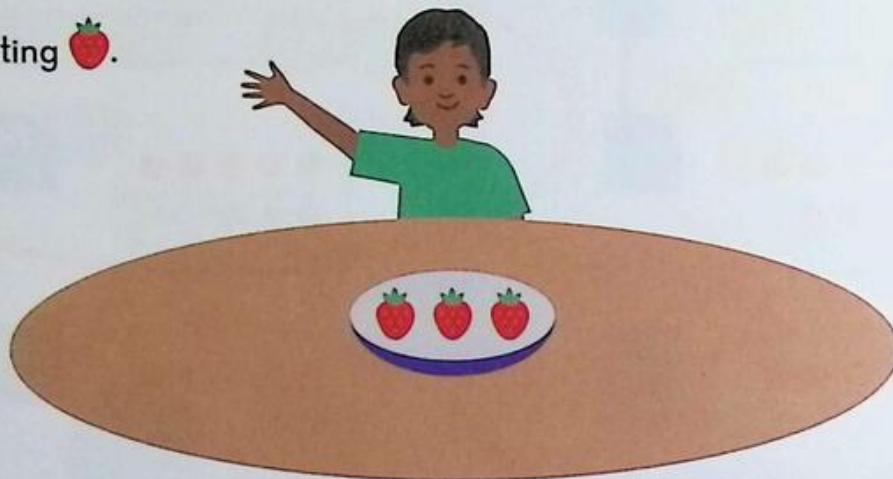
Lesson 2

The Number 0

2

Think

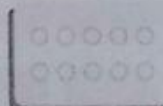
Alex is eating .



How many  are on each ?



Learn



0

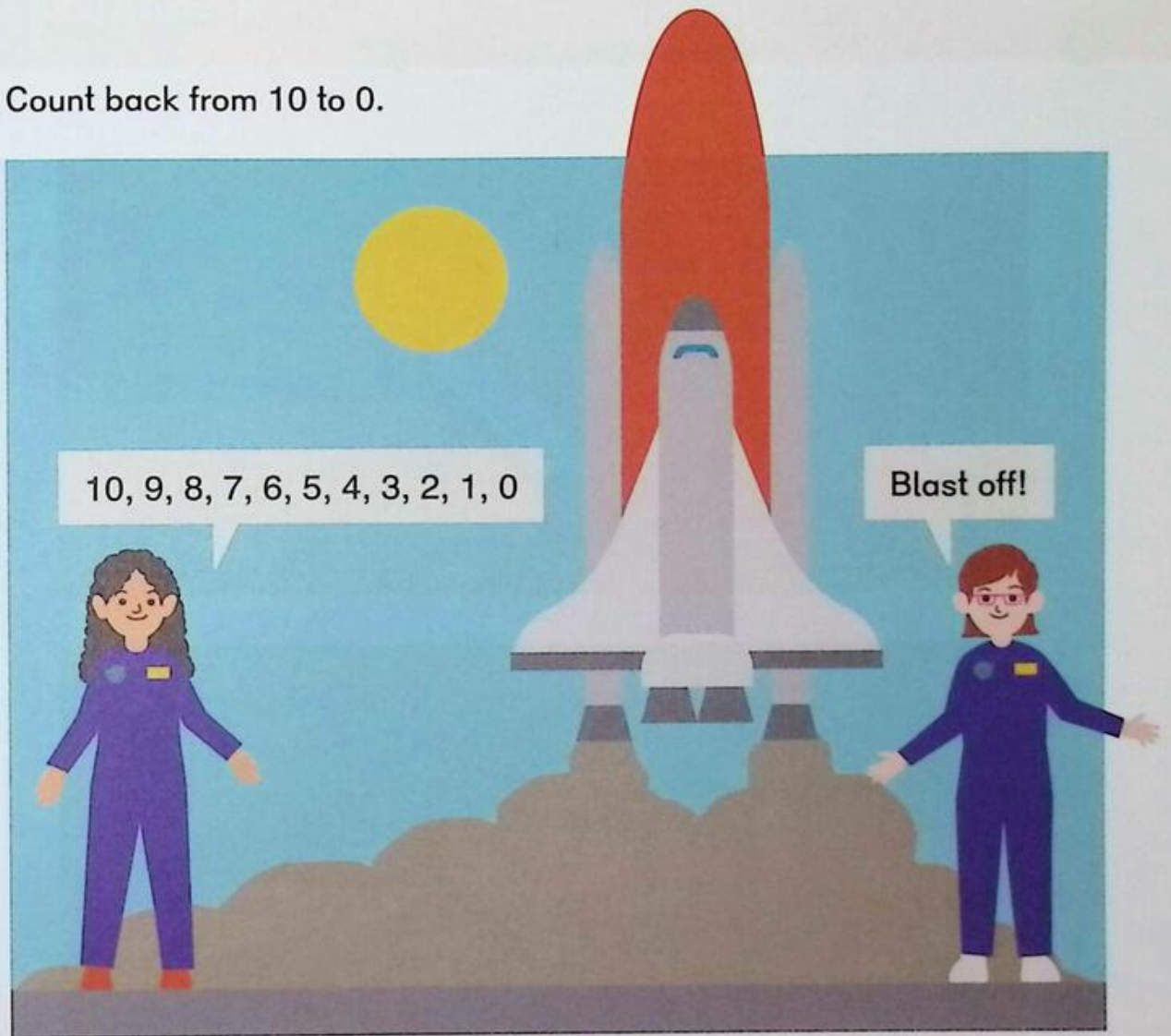
zero

There are 0 strawberries on the plate.



Do

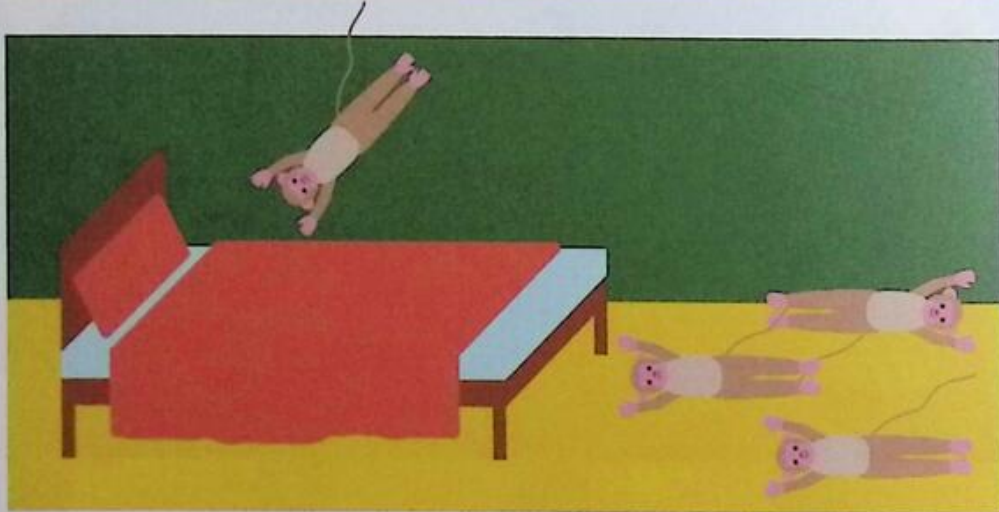
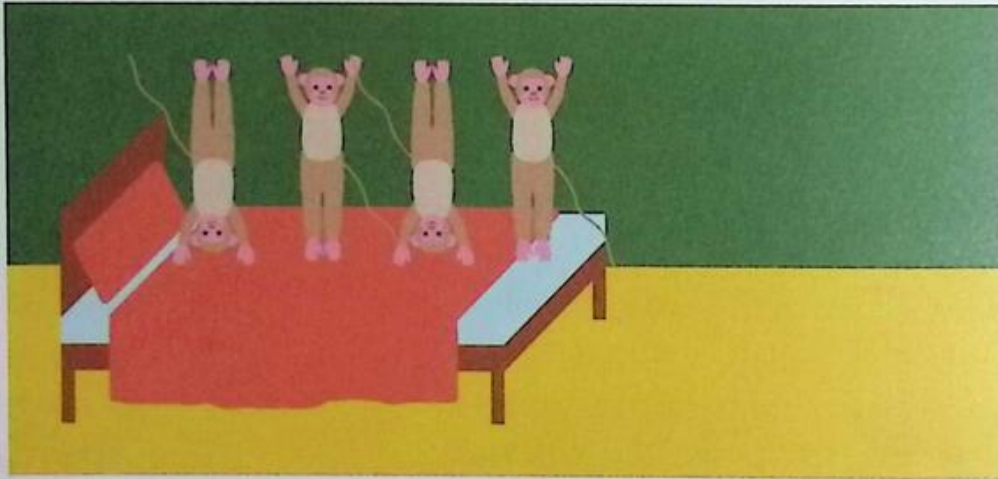
- ① Count back from 10 to 0.



- ② How many  are in each ?



3 How many  are jumping on the ?



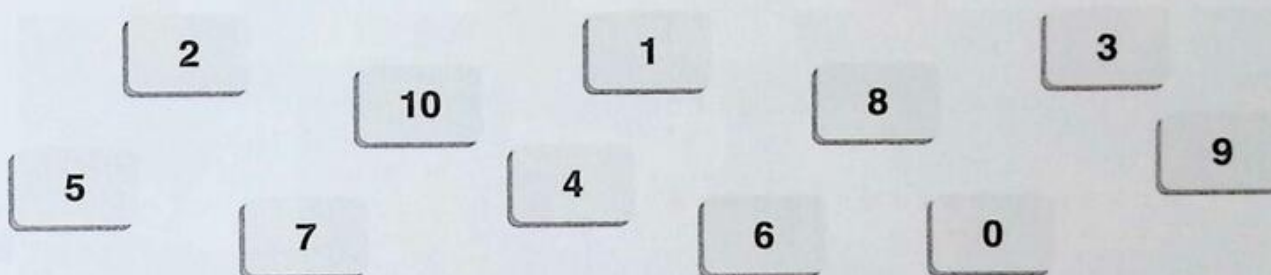
Lesson 3

Order Numbers

3

Think

Put the numbers in order from least to greatest.

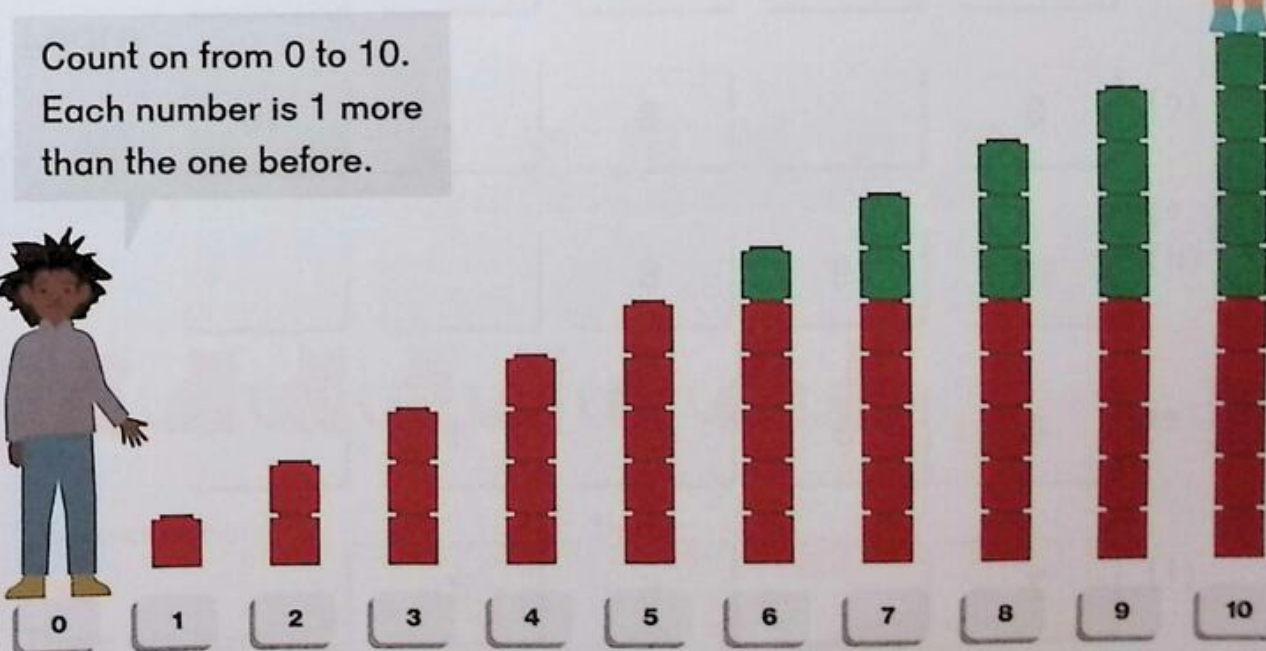


Learn

Count back from 10 to 0.
We are counting back by
1 each time.

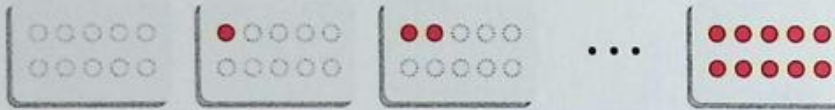


Count on from 0 to 10.
Each number is 1 more
than the one before.

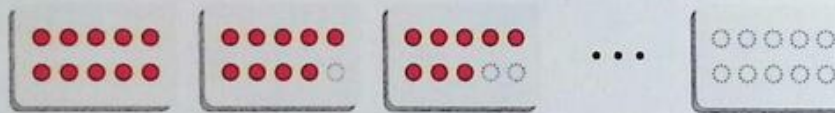


Do

- 1 Arrange your ten-frame cards from least to greatest.



- 2 Arrange your ten-frame cards from greatest to least.



- 3 What are the missing numbers?

(a)	2	3	4		
(b)		5	6		8
(c)	6		8		10
(d)	10	9	8		
(e)	4	3		1	
(f)	7		5	4	

Lesson 4

Compare Numbers

4

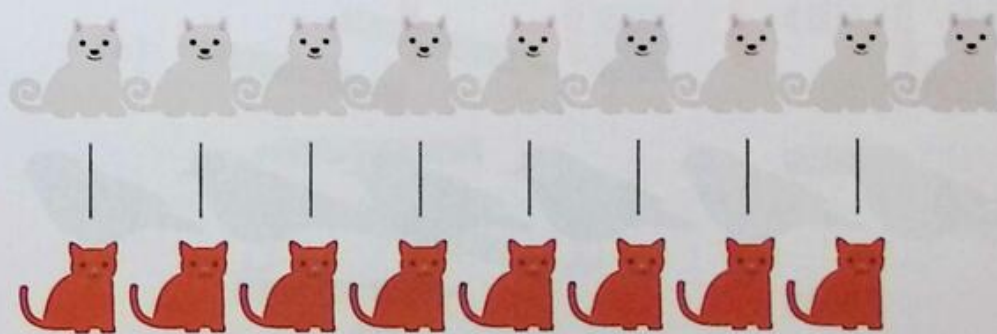
Think



Are there **more** dogs or cats?

Are there **fewer** dogs or cats?

Learn



dogs

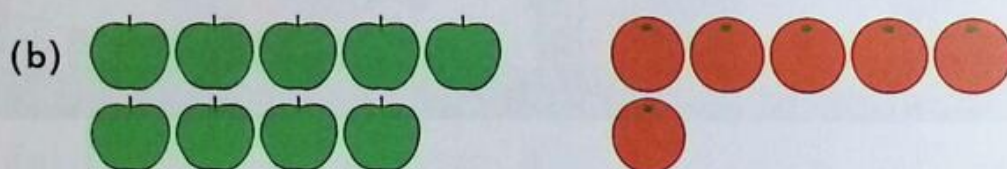
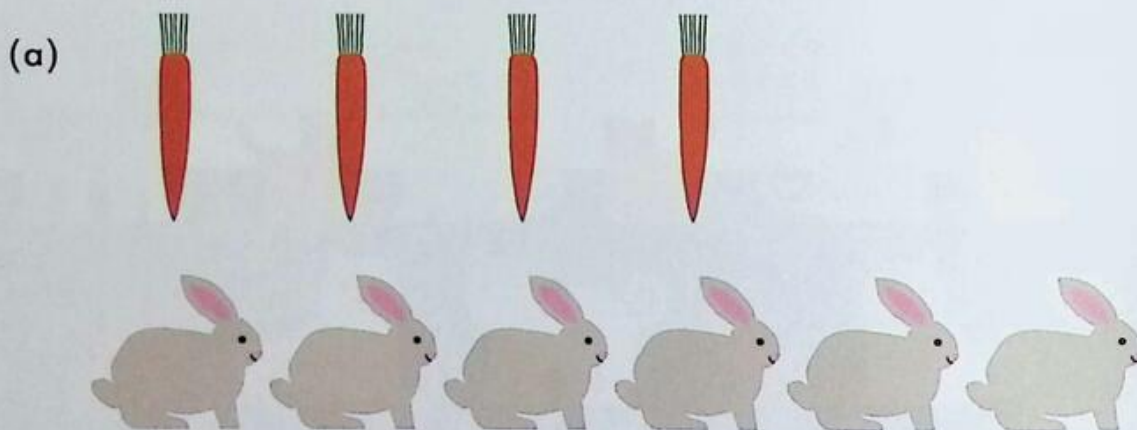
cats

There are more _____ than _____.

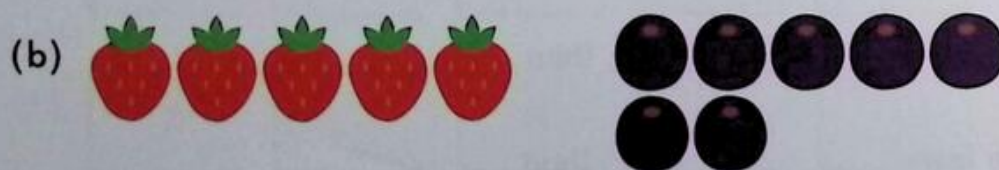
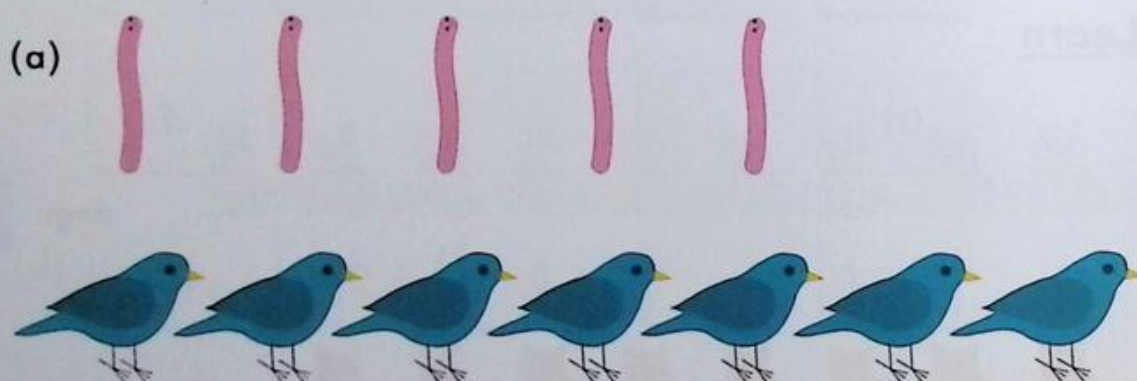
There are fewer _____ than _____.

Do

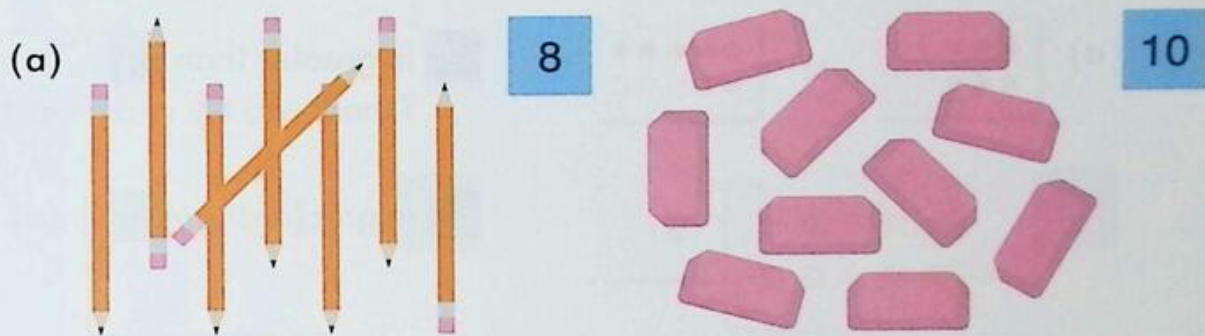
1 Which has more?



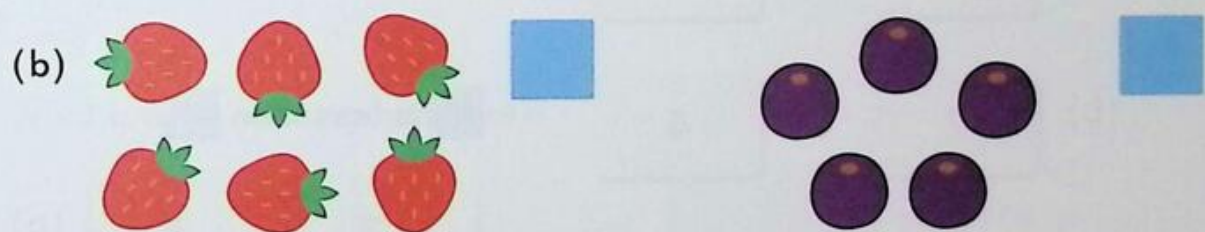
2 Which has fewer?



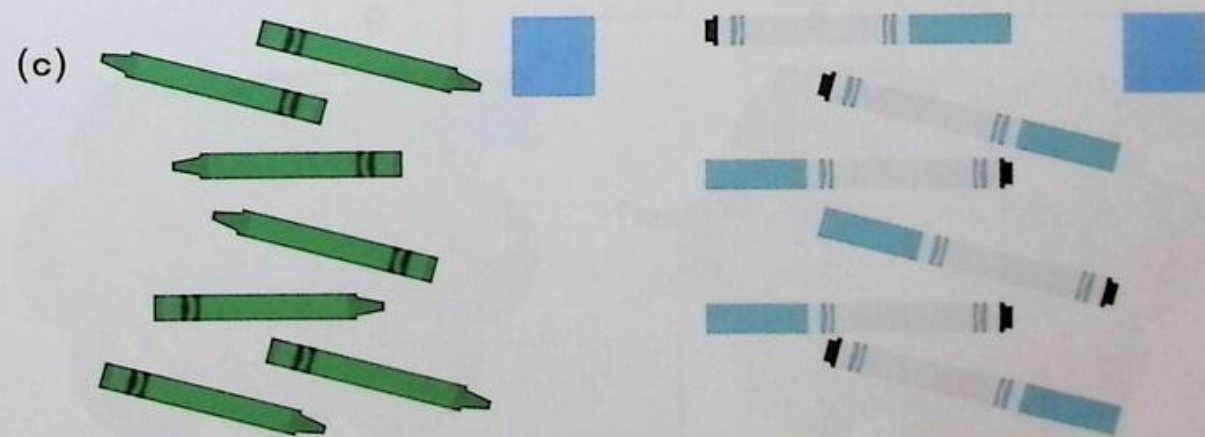
3 More or fewer?



There are _____ pencils than erasers.



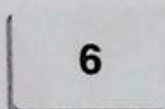
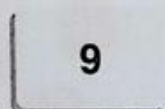
There are _____ strawberries than grapes.



There are _____ crayons than markers.

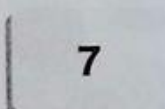
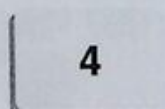
4 Which is greater?

(a)  or   is greater than .

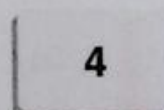
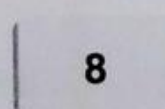
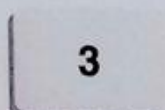
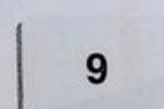
(b)  or   is greater than .

5 Which is less?

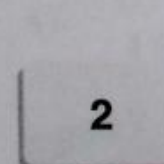
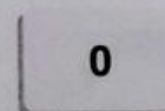
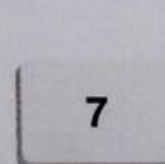
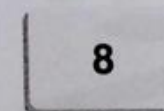
(a)  or   is less than .

(b)  or   is less than .

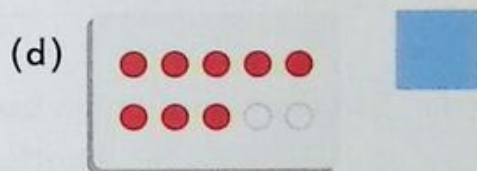
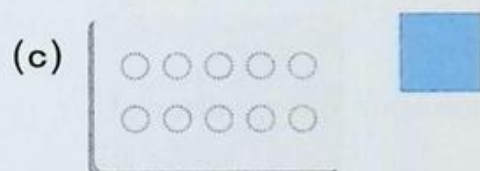
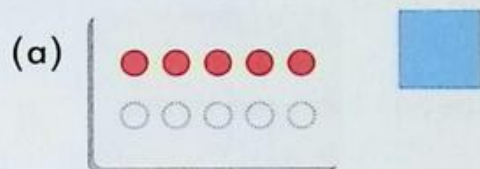
6 Which number is the least?

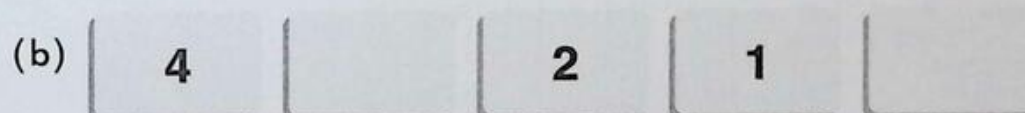
7 Which number is the greatest?

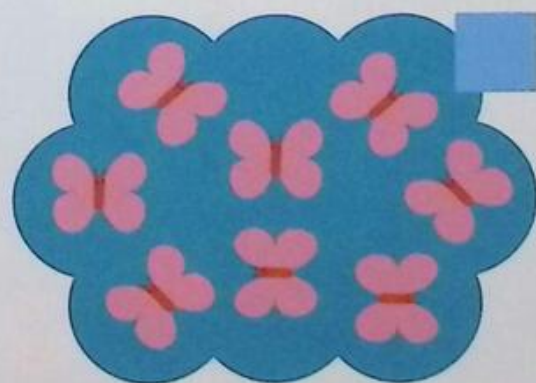
1 How many ● are there?



2 What are the missing numbers?

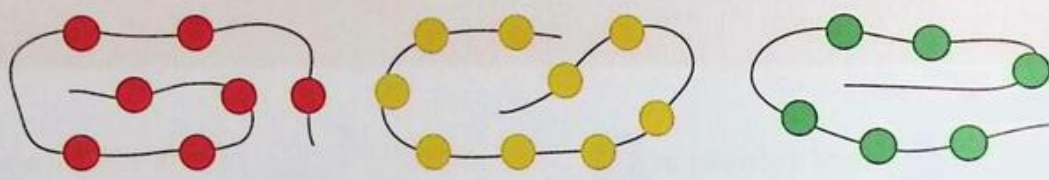


3



There are more _____ than _____.

4



- (a) There are red beads, yellow beads, and green beads.
- (b) There are fewer _____ beads than red beads.
- (c) There are more _____ beads than red beads.
- (d) The number of green beads is 1 less than the number of _____ beads.
- (e) The number of _____ beads is the greatest.

5 Which number is the least?

seven	four	eight	ten
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6 Put the numbers in order from least to greatest.

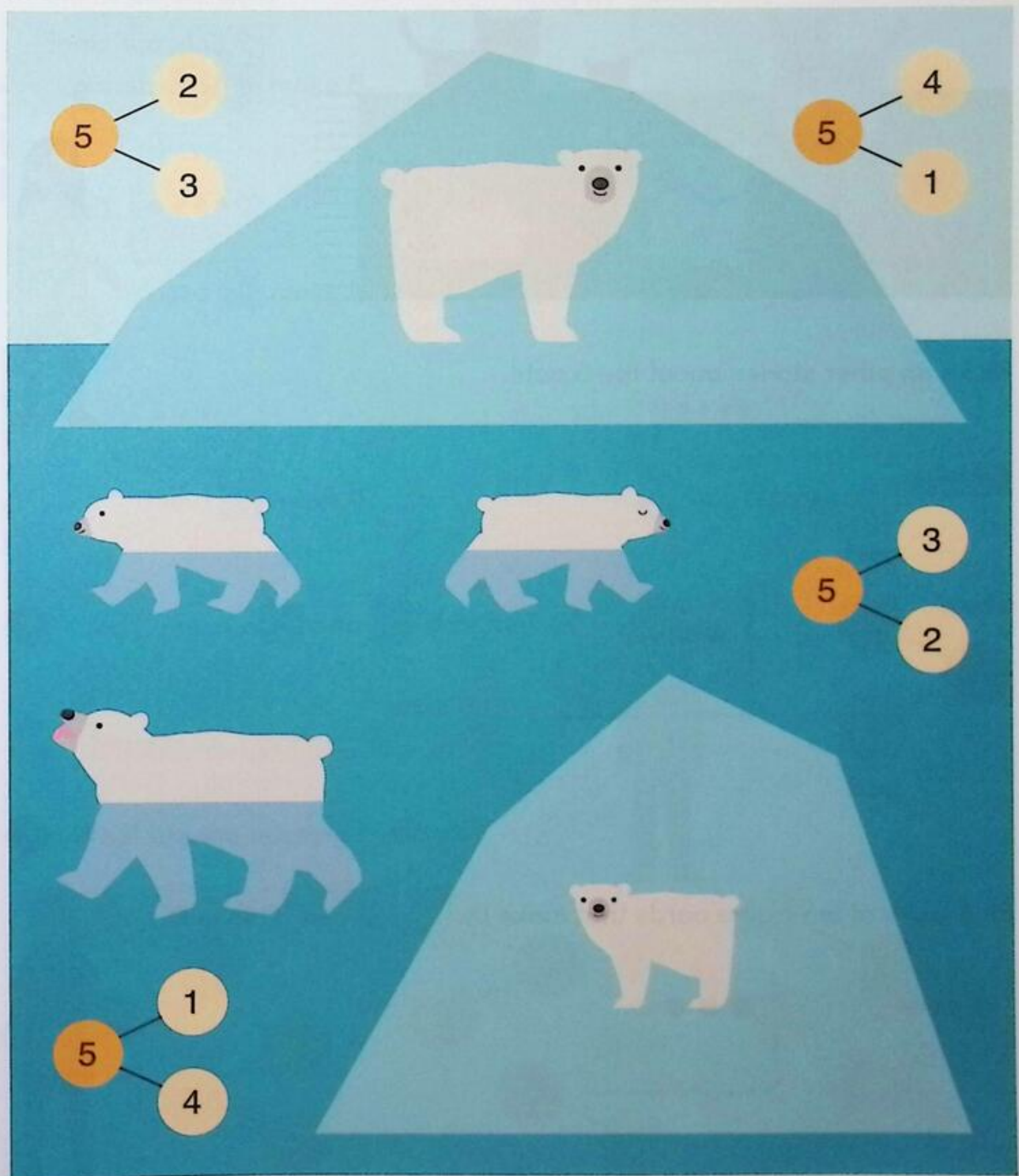
9	3	0	6
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7 Which numbers are greater than 7?

6	8	7	9
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Chapter 2

Number Bonds

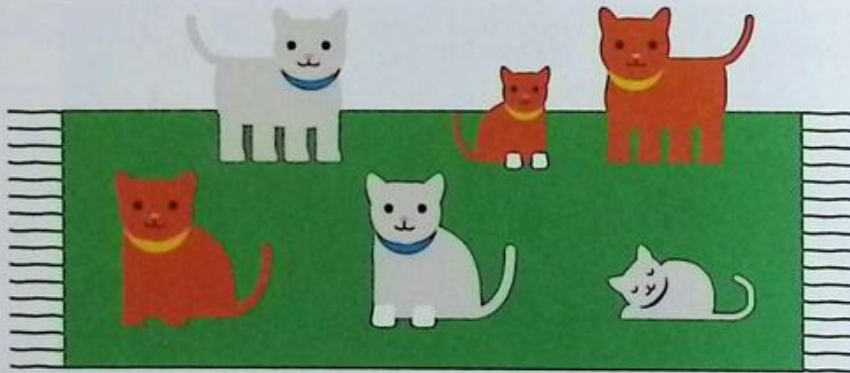


Lesson 1

Make 6

1

Think

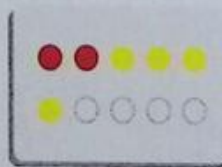
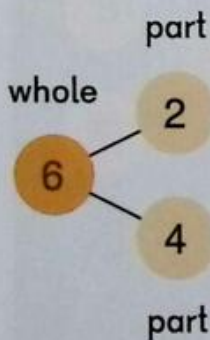


There are 6 cats.
2 cats are small.
4 cats are big.



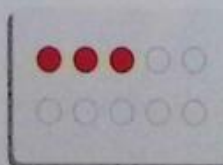
Make up other stories about the 6 cats.

Learn



6 is and .

Find pairs of ten-frame cards that make 6.

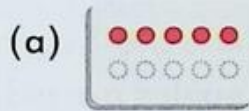


3 and 3 make 6.

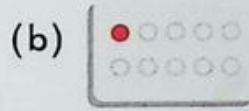


Do

① How many more ● make 6?



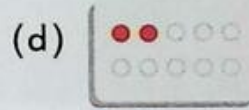
5 and make 6.



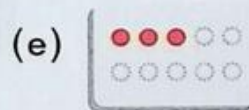
1 and make 6.



4 and make 6.



and 2 make 6.



3 and make 6.



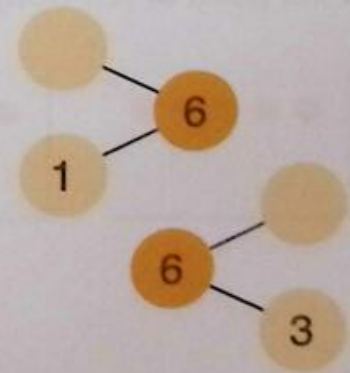
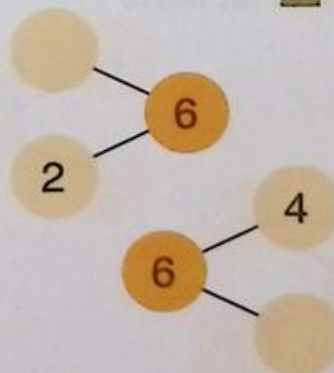
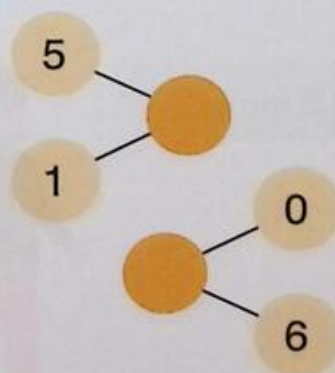
and 6 make 6.

② Find pairs of number cards that make 6.

and make 6.



③ What are the missing numbers?

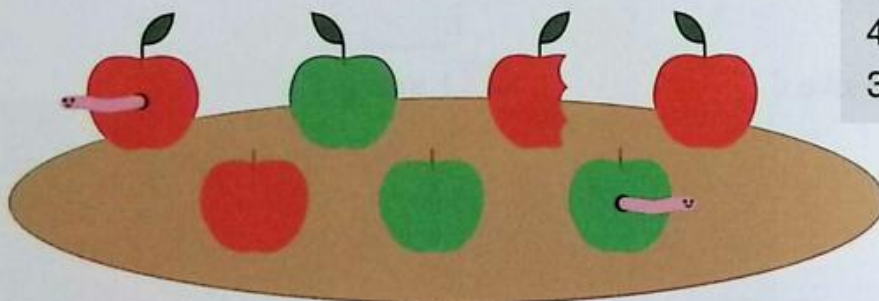


Lesson 2

Make 7

2

Think

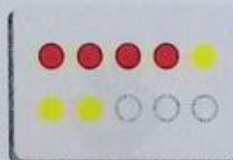
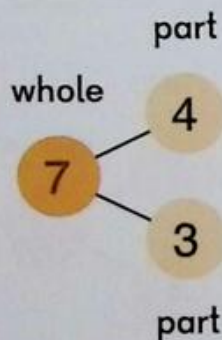


There are 7 apples.
4 apples are red.
3 apples are green.



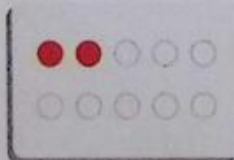
Make up other number stories about the 7 apples.

Learn



7 is and .

Find pairs of ten-frame cards that make 7.



5 and 2 make 7.

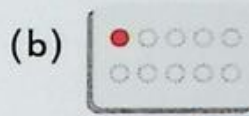


Do

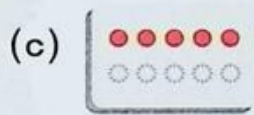
1 How many more ● make 7?



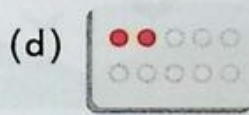
6 and make 7.



1 and make 7.



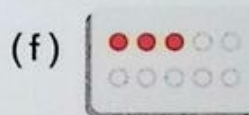
5 and make 7.



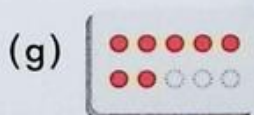
and 2 make 7.



and 4 make 7.



3 and make 7.

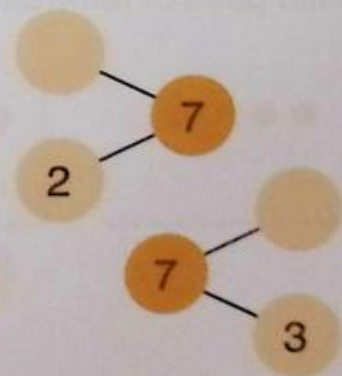
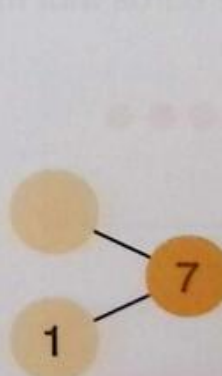
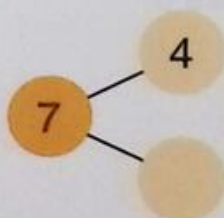
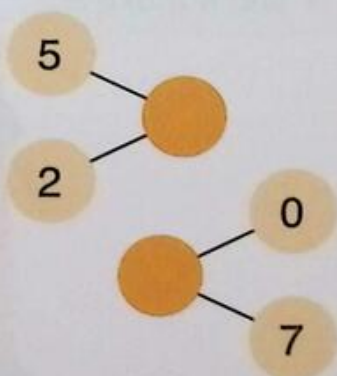


7 and make 7.



0 and make 7.

2 What are the missing numbers?

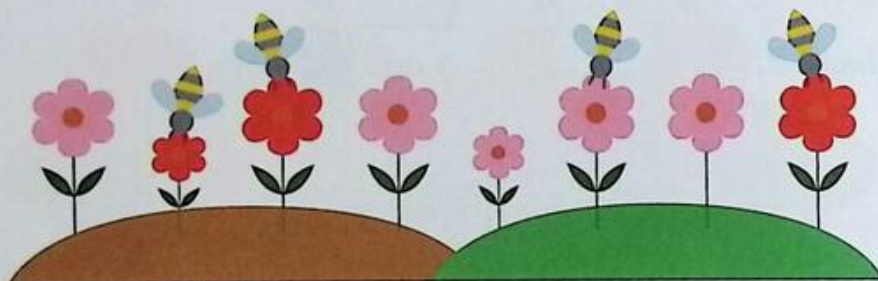


Lesson 3

Make 8

3

Think

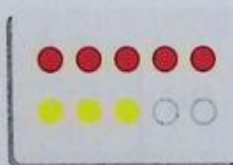
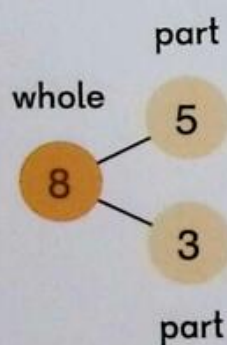


There are 8 flowers.
5 flowers are pink.
3 flowers are red.



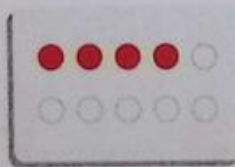
Make up other number stories about the 8 flowers.

Learn



8 is and .

Find pairs of ten-frame cards that make 8.



4 and 4 make 8.



Do

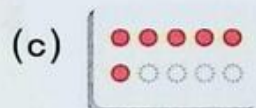
① How many more ● make 8?



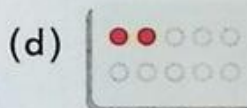
and 7 make 8.



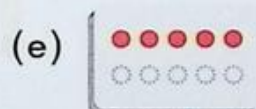
and 1 make 8.



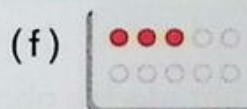
6 and make 8.



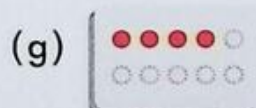
and 2 make 8.



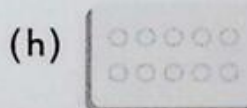
5 and make 8.



3 and make 8.

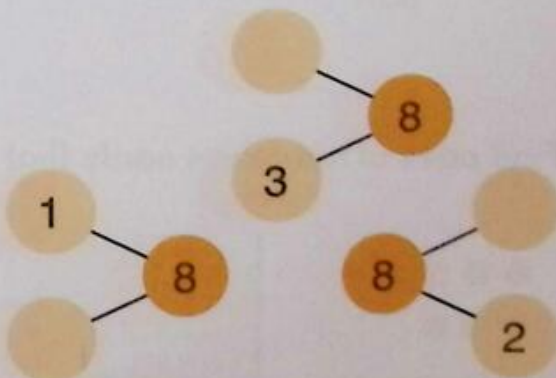
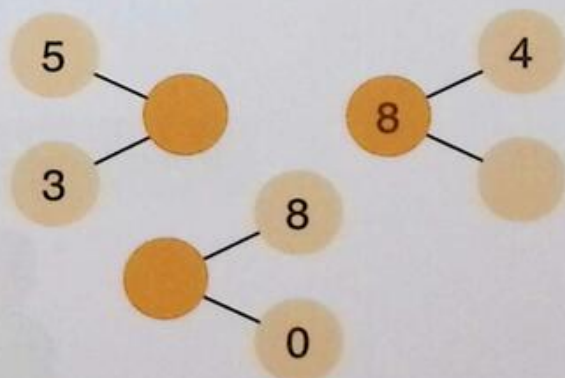


4 and make 8.



0 and make 8.

② What are the missing numbers?

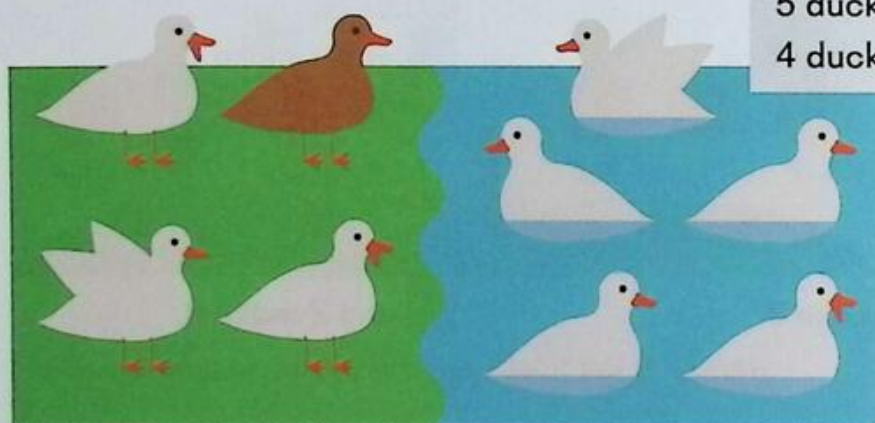


Lesson 4

Make 9

4

Think

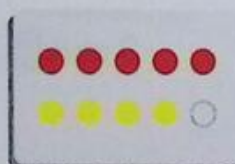
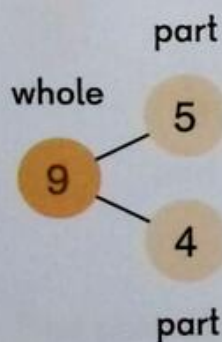


There are 9 ducks.
5 ducks are in the water.
4 ducks are on land.



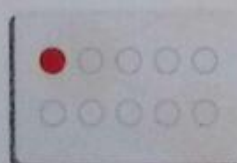
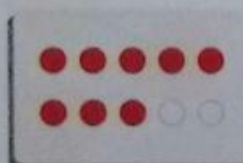
Make up other number stories about the 9 ducks.

Learn



9 is and .

Find pairs of ten-frame cards that make 9.



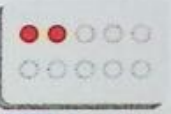
8 and 1 make 9.



Do

① How many more ● make 9?

(a) 
 and 7 make 9.

(b) 
 and 2 make 9.

(c) 
 and 6 make 9.

(d) 
 and 3 make 9.

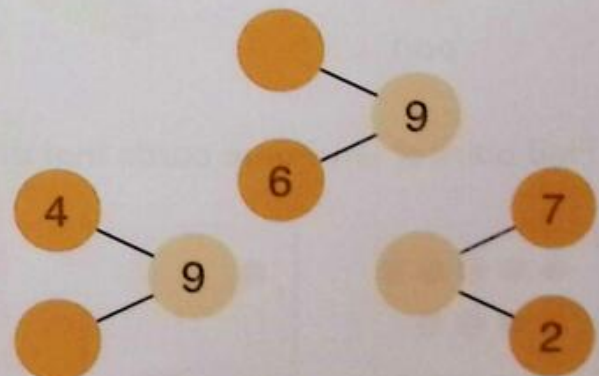
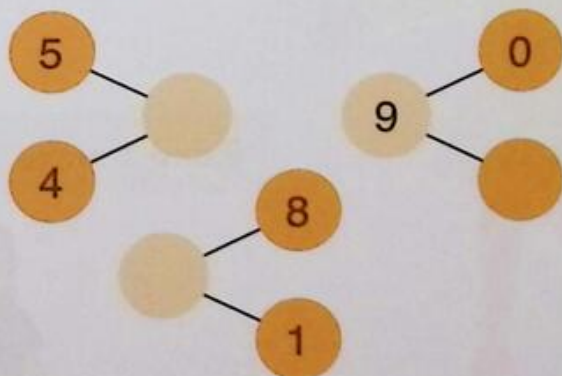
(e) 
 5 and  make 9.

(f) 
 4 and  make 9.

(g) 
 9 and  make 9.

(h) 
 0 and  make 9.

② What are the missing numbers?

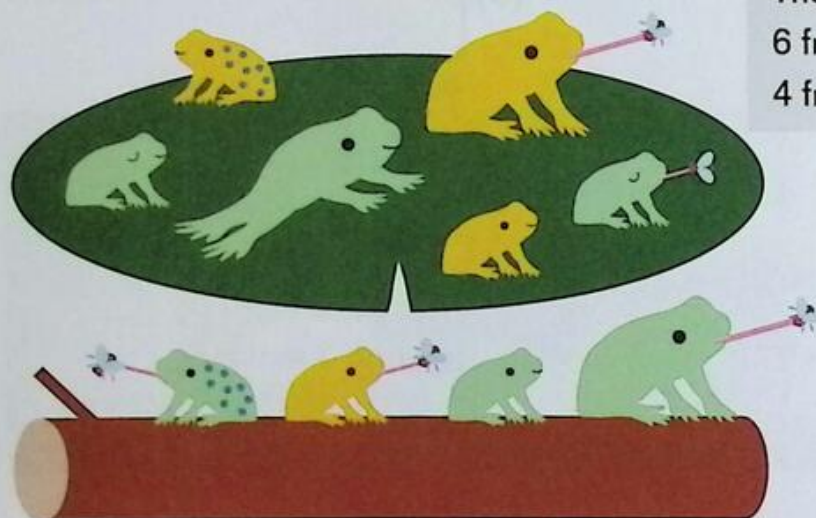


Lesson 5

Make 10 — Part 1

5

Think

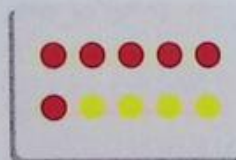
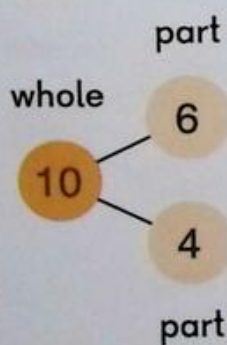


There are 10 frogs.
6 frogs are on the lily pad.
4 frogs are on the log.



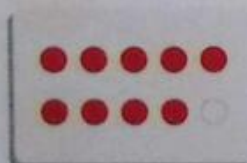
Make up other number stories about the 10 frogs.

Learn



10 is and .

Find pairs of ten-frame cards that make 10.



9 and 1 make 10.

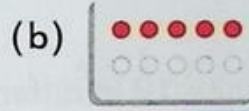


Do

① How many more ● make 10?



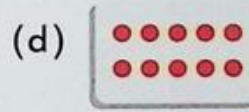
8 and make 10.



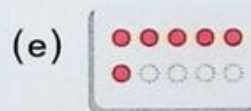
5 and make 10.



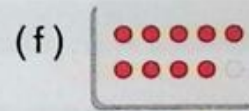
7 and make 10.



10 and make 10.



6 and make 10.



9 and make 10.

② How many are hidden?
Play the game with a partner.



4 and how many make 10?

Lesson 6

Make 10 — Part 2

6

Think

Use the cubes to make 10 in different ways.



7 and 3 make 10.



Learn



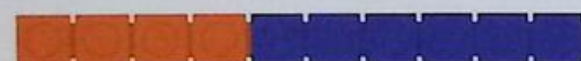
1 and 9 make 10.



2 and 8 make 10.



3 and 7 make 10.



4 and 6 make 10.



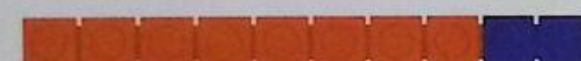
5 and 5 make 10.



6 and 4 make 10.



7 and 3 make 10.



8 and 2 make 10.



9 and 1 make 10.

What patterns do you see?

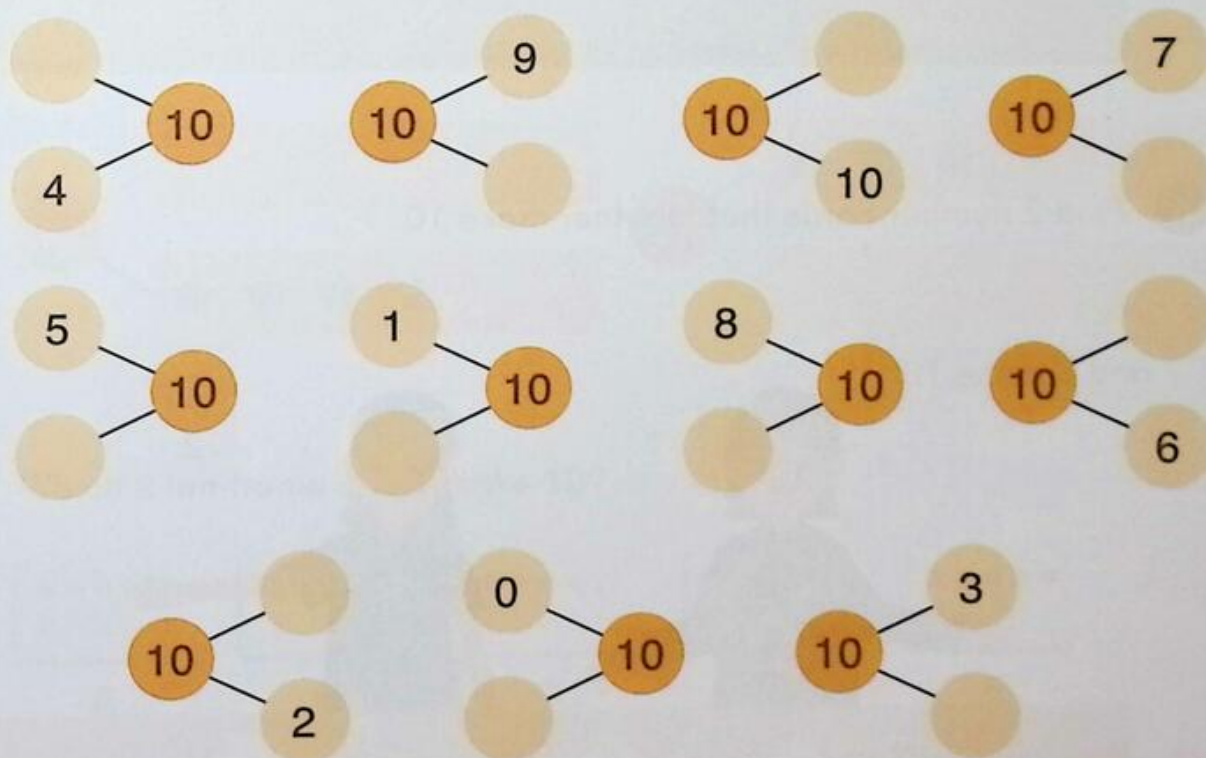


Do

- ① Line up 2 sets of number cards so that the top card makes 10 with the one under it.

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

- ② What are the missing numbers?



3 Roll a die.

Say the number that makes a 10 with the number on the die.



2 and 8 make 10.

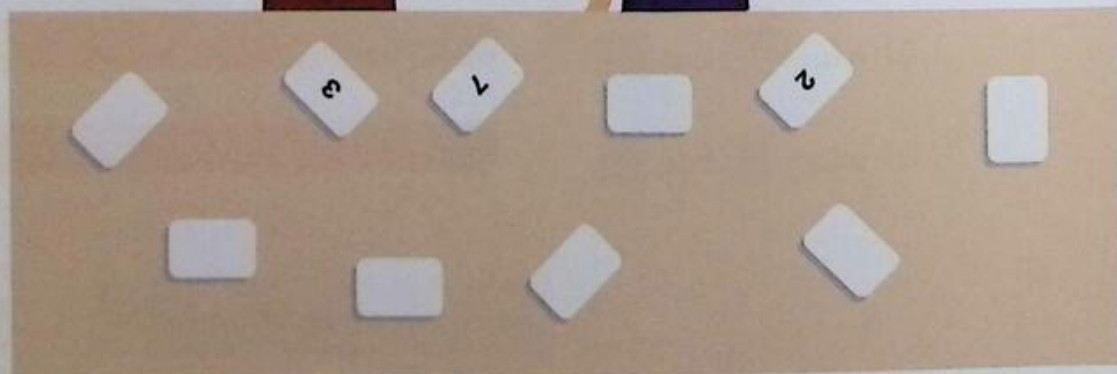


4 Find 2 number cards that together make 10.

7 and 3 make 10.



10
2



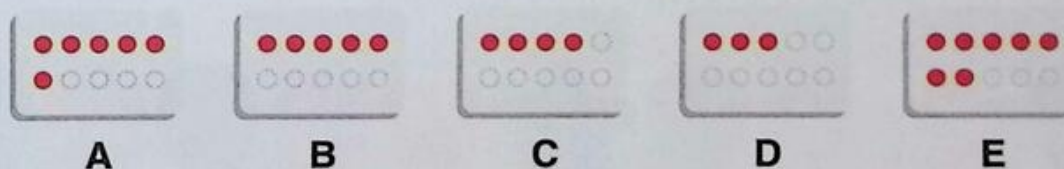


How many more does Emma need to have 10?

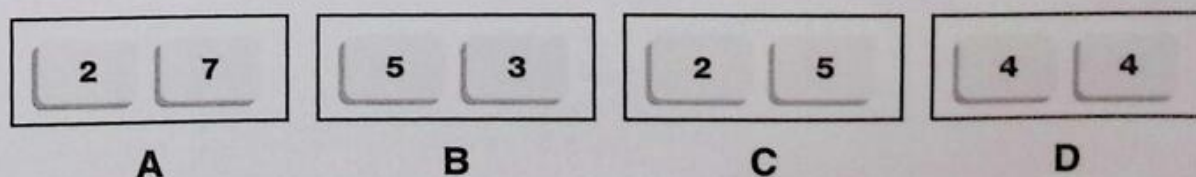
2 How many more stars are needed to complete the number bonds?



3 Which 2 ten-frame cards make 10?



4 Which boxes have 2 numbers that make 8?



- 5 Find pairs of numbers in each box that make 9.

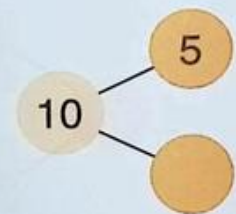
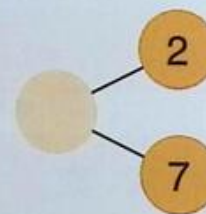
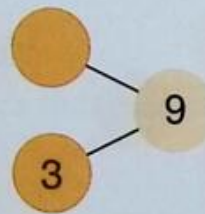
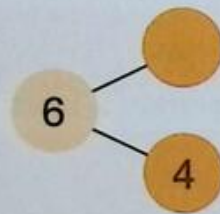
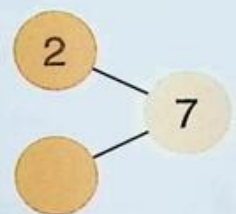
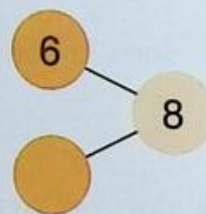
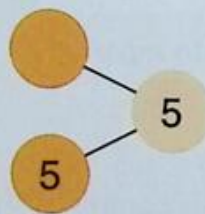
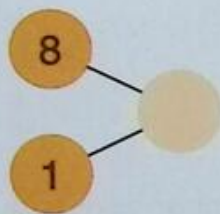
(a)

3	2	4
8	5	6

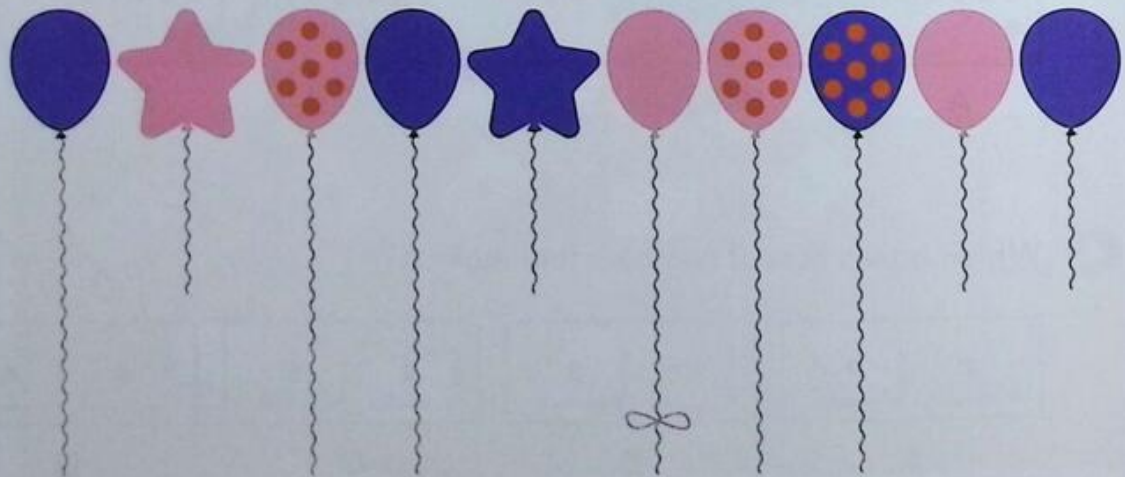
(b)

9	8	2
4	7	0

- 6 Complete the number bonds.

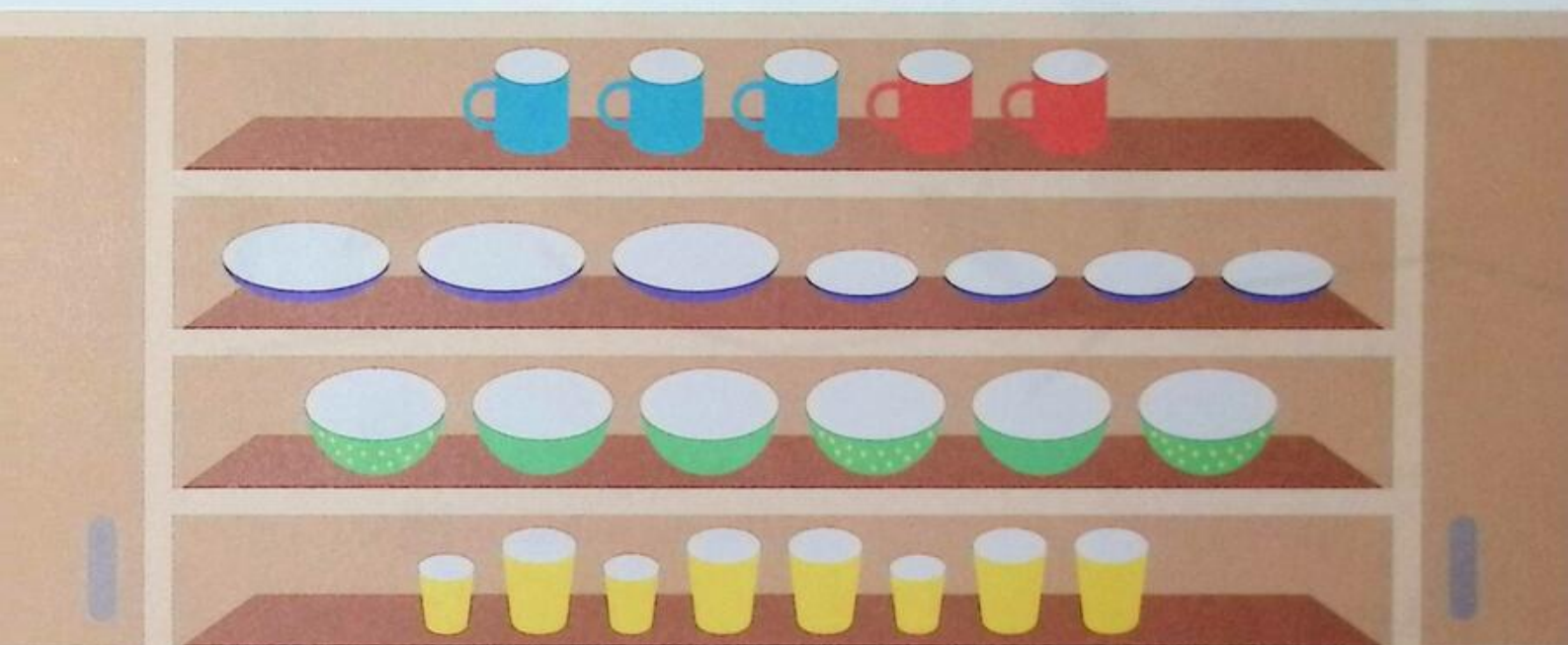


- 7 Make up number stories about the balloons. Write a number bond for each.



Chapter 3

Addition



There are 3 blue mugs.
There are 2 red mugs.
There are 5 mugs altogether.

What other number
stories can you make?

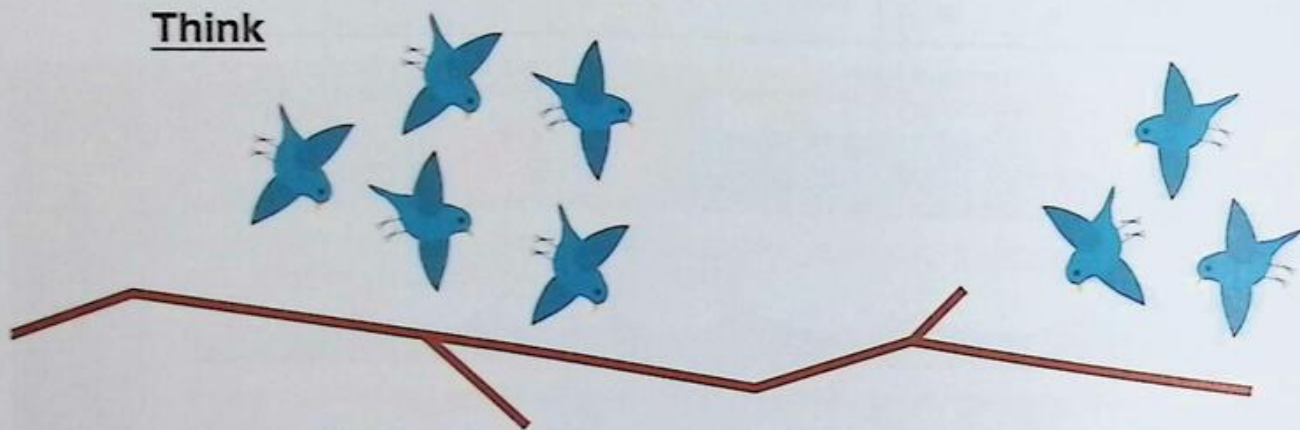


Lesson 1

Addition as Putting Together

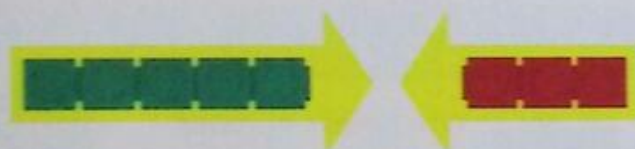
1

Think



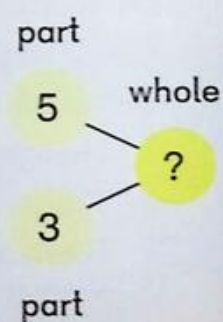
How many birds will there be on the branch altogether?

Learn



$$5 + 3 = 8$$

There will be birds on the branch altogether.



This is **addition**.
+ is read as **plus**.



= is read as **equals**.
It means the **same value** as.
 $5 + 3 = 8$ is an **equation**.



Do

①



How many butterflies are there altogether?

$$4 + 3 = \square$$

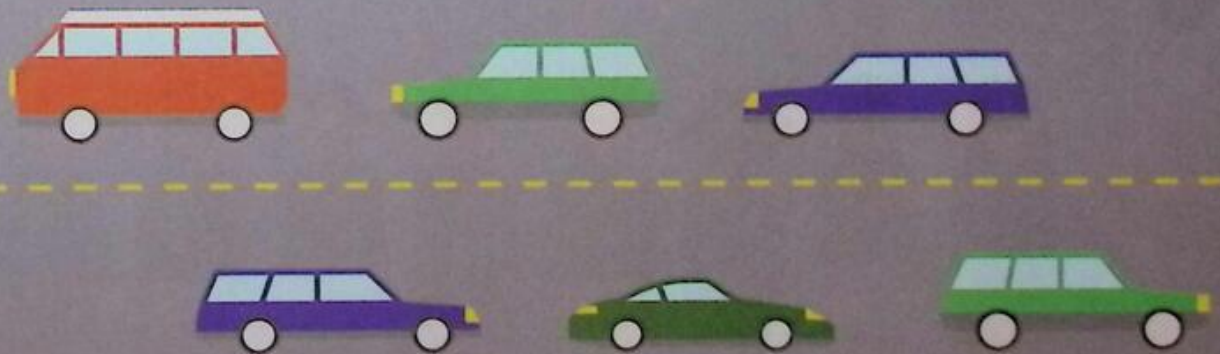
There are $\square$ butterflies altogether.

4

?

3

②



How many cars are there altogether?

$$\square + \square = \square$$

There are $\square$ cars altogether.

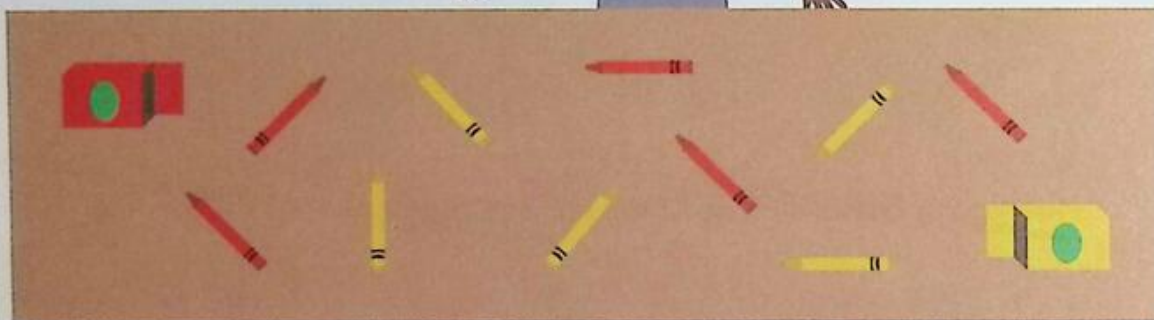
3

?

3

3

There are 5 red crayons.
There are 5 yellow crayons.
How many crayons are
there altogether?



$$\square + \square = \square$$

There are $\square$ crayons altogether.

4



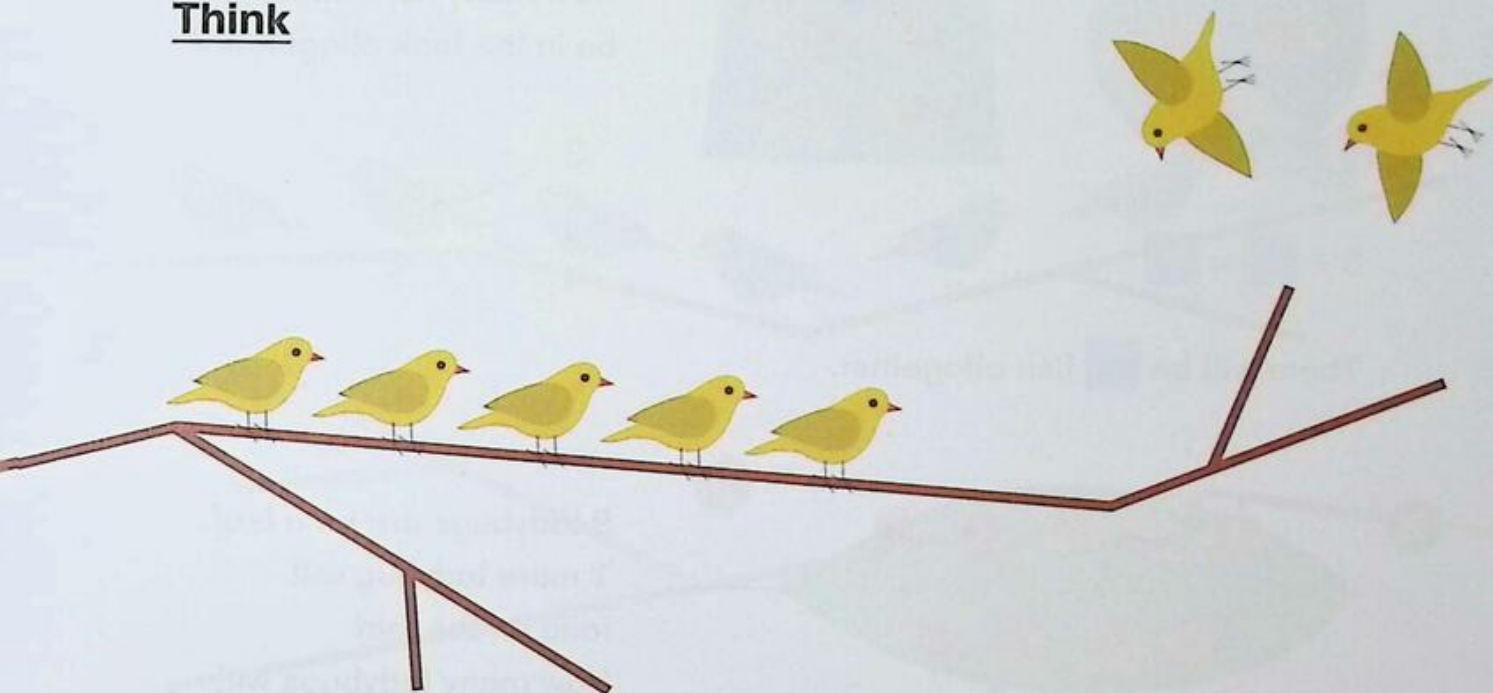
Write addition equations for this picture.

Lesson 2

Addition as Adding More

2

Think

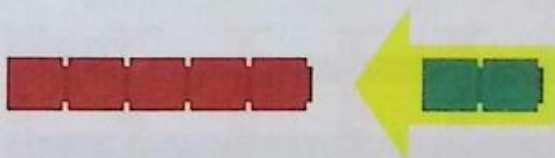


5 birds are on a branch.

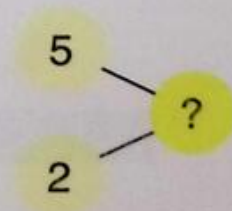
2 more birds come.

How many birds will be on the branch altogether?

Learn



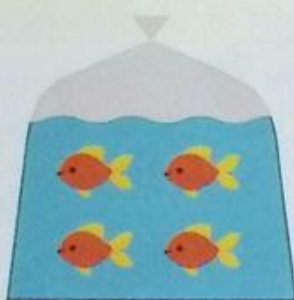
$$5 + 2 = \square$$



There will be $\square$ birds on the branch altogether.

Do

1



3 fish are in a tank.
4 more fish will be added.
How many fish will
be in the tank altogether?

$$3 + \square = \square$$

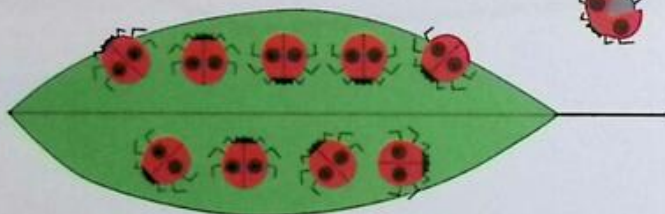
There will be $\square$ fish altogether.

3

?

4

2

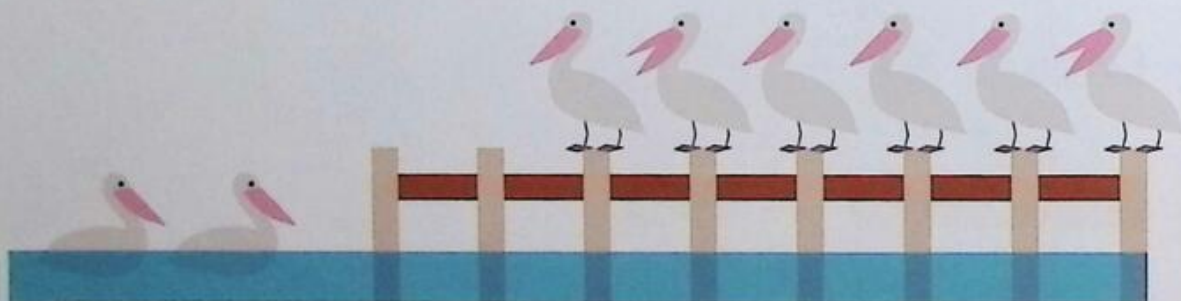


9 ladybugs are on a leaf.
1 more ladybug will
land on the leaf.
How many ladybugs will
be on the leaf altogether?

$$\square + \square = \square$$

There will be $\square$ ladybugs altogether.

3



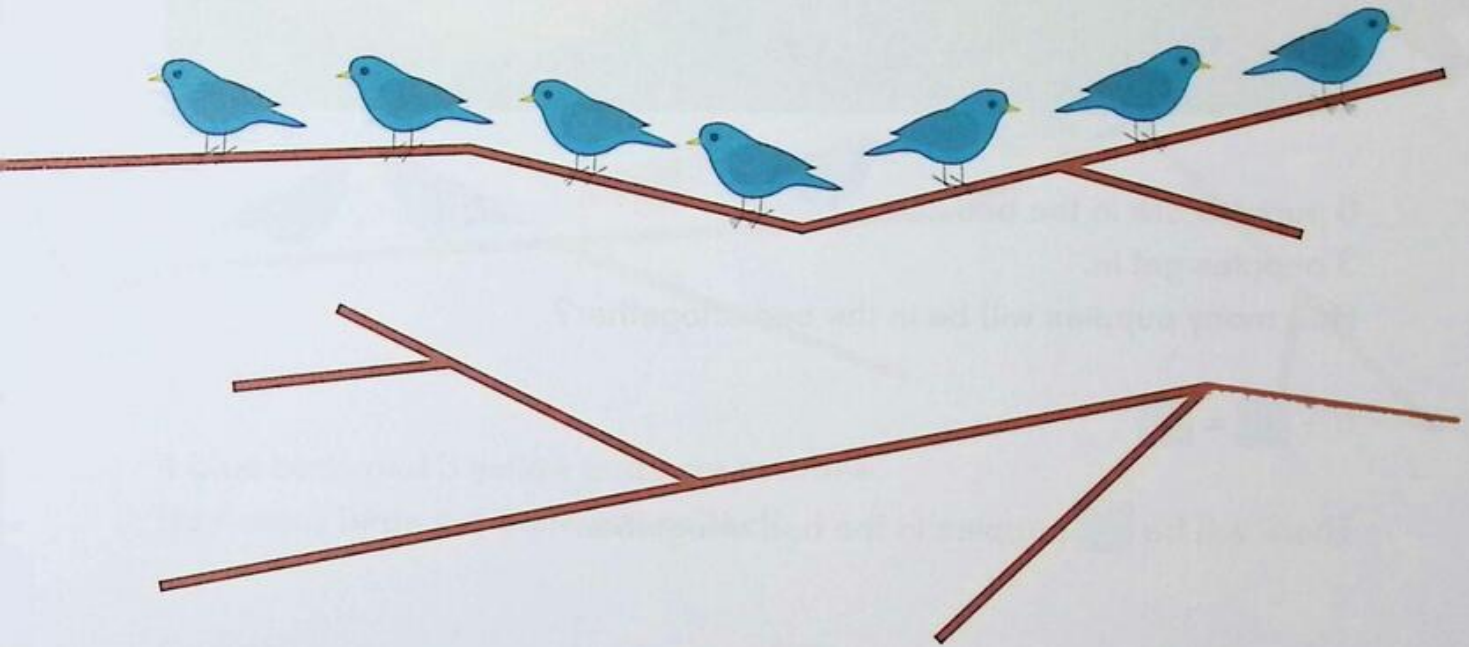
There are 6 pelicans on the dock.
2 more pelicans come.
How many pelicans will be on the dock altogether?
Write an addition equation.

Lesson 3

Addition with 0

3

Think



There are 7 birds on one branch.

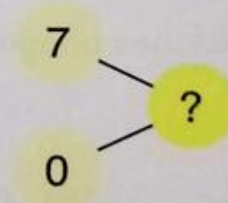
There are 0 birds on the other branch.

Write an addition equation to show how many birds there are in all.

Learn

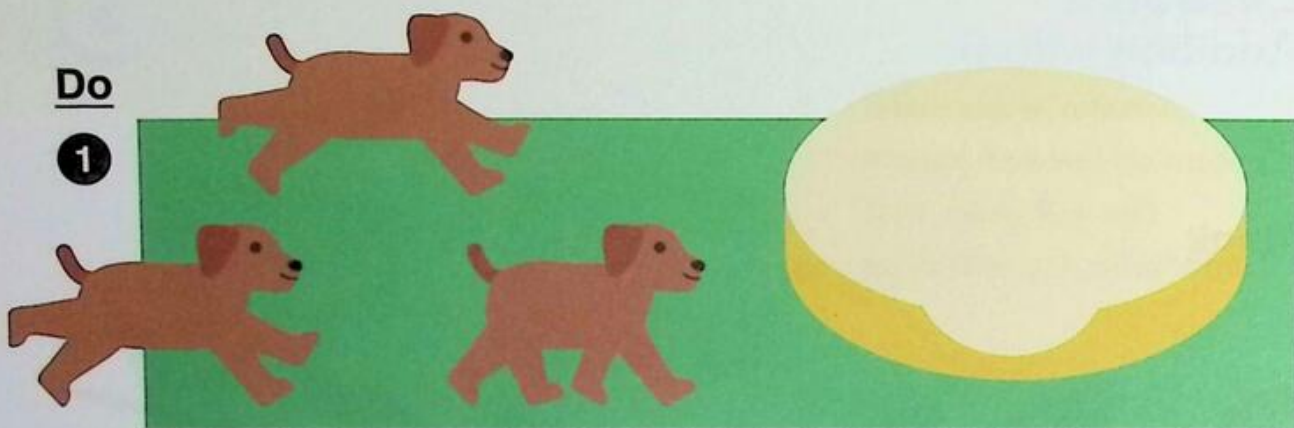
$$7 + 0 = \square$$

There are $\square$ birds in all.



Do

1



0 puppies are in the bed.

3 puppies get in.

How many puppies will be in the bed altogether?

$$0 + \square = \square$$

There will be $\square$ puppies in the bed altogether.

2



How many sandwiches are there altogether?

$$0 + \square = \square$$

There are $\square$ sandwiches altogether.

3

(a) $7 + 0 = \square$

(b) $0 + 6 = \square$

(c) $\square = 8 + 0$

(d) $0 + 2 = \square$

(e) $\square + 0 = 9$

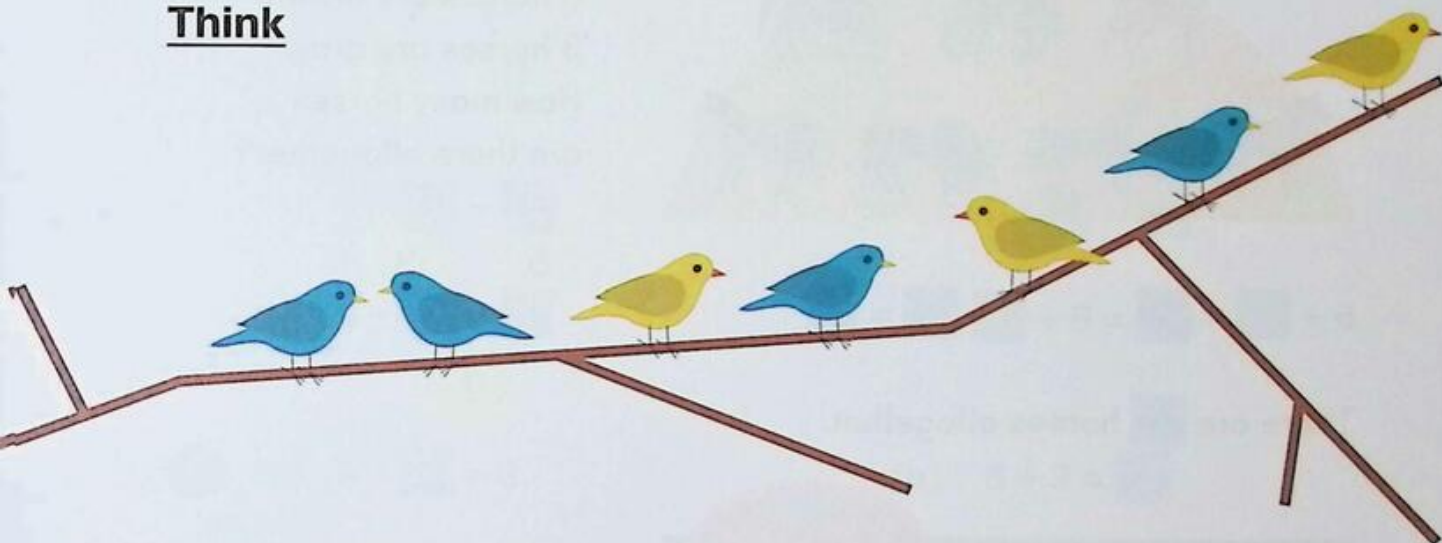
(f) $10 = \square + 10$

Lesson 4

Addition with Number Bonds

4

Think

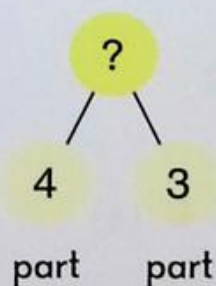


4 blue birds and 3 yellow birds are in a tree.
How many birds are there altogether?

Learn

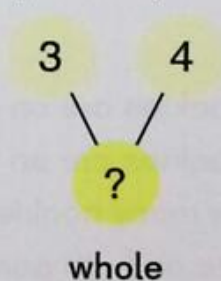


whole



$$4 + 3 = \square$$

part part



$$3 + 4 = \square$$

$$4 + 3 = 3 + 4$$

There are $\square$ birds altogether.



Do

1

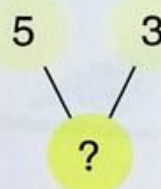


5 horses are brown.
3 horses are gray.
How many horses
are there altogether?

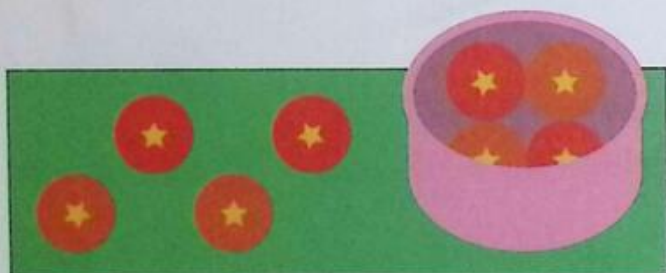
$$5 + \square = \square$$

$$3 + \square = \square$$

There are $\square$ horses altogether.



2

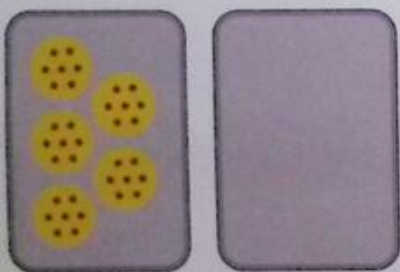


4 balls are in a basket.
4 balls are on the ground.
How many balls
are there in all?

$$4 + \square = \square$$

There are $\square$ balls in all.

3

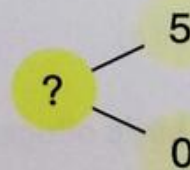


5 cookies are on one pan.
0 cookies are on the other pan.
How many cookies are
there on both pans?

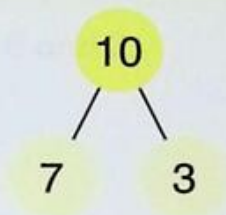
$$5 + \square = \square$$

$$0 + \square = \square$$

There are $\square$ cookies in all.



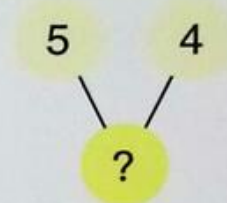
4 (a)



$$7 + \square = \square$$

$$3 + \square = \square$$

(b)

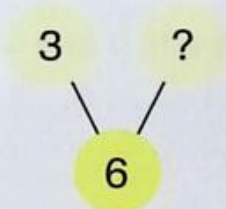


$$5 + \square = \square$$

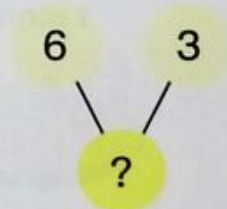
$$\square + 5 = \square$$

5

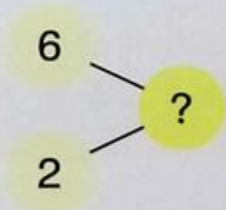
(a) $3 + \square = 6$



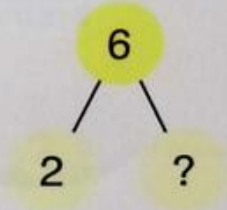
(b) $6 + 3 = \square$



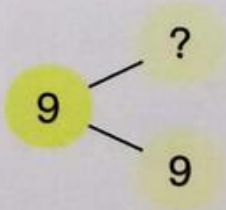
(c) $2 + 6 = \square$



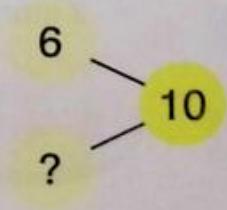
(d) $\square + 2 = 6$



(e) $9 = 9 + \square$



(f) $10 = \square + 6$



Lesson 5

Addition by Counting On

5

Think



How many strawberries will there be if Mei adds 1 or 2 or 3 more strawberries?

Learn

4



1 more



Start with 4 and
count on ... 5.



$$4 + 1 = \square$$

There will be $\square$ strawberries.

4



2 more



Start with 4 and
count on ... 5, 6.



$$4 + 2 = \square$$

There will be $\square$ strawberries.

4



3 more



Count on from 4:
5, 6, 7.



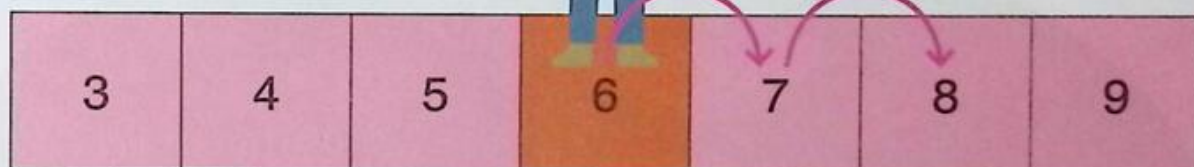
$$4 + 3 = \square$$

There will be $\square$ strawberries.

Do

- ① Add 6 and 2.

Count on from 6: 7, 8.



$$6 + 2 = \square$$

- ② Add 3 and 6.

Count on from 6: 7, 8, 9.

$3 + 6 = 6 + 3$.



$$3 + 6 = \square$$

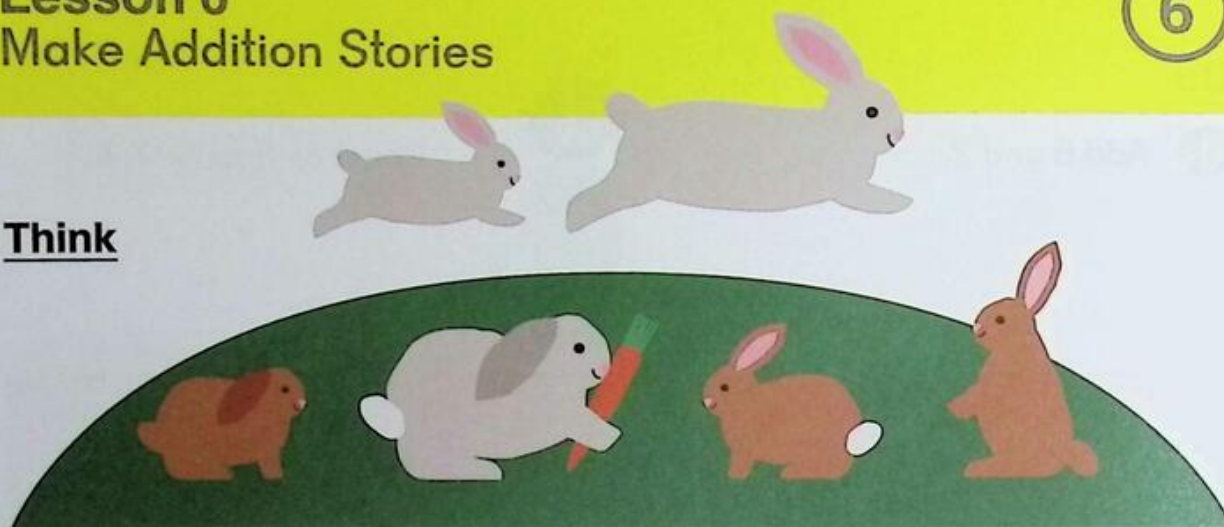
- ③ (a) $5 + 1 = \square$ (b) $1 + 6 = \square$ (c) $\square = 1 + 8$
(d) $4 + 2 = \square$ (e) $2 + 7 = \square$ (f) $\square = 8 + 2$
(g) $5 + 3 = \square$ (h) $3 + 4 = \square$ (i) $\square = 6 + 3$

Lesson 6

Make Addition Stories

6

Think



Make up an addition story for the rabbits.

Learn

There are 2 large rabbits.
There are 4 small rabbits.
There are 6 rabbits in all.



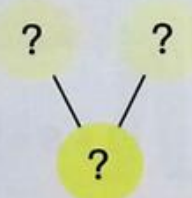
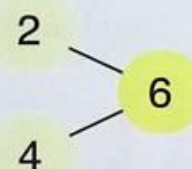
$$2 + 4 = \square$$

$\square$ rabbits are gray.

$\square$ rabbits are brown.

There are $\square$ rabbits altogether.

$$\square + \square = \square$$

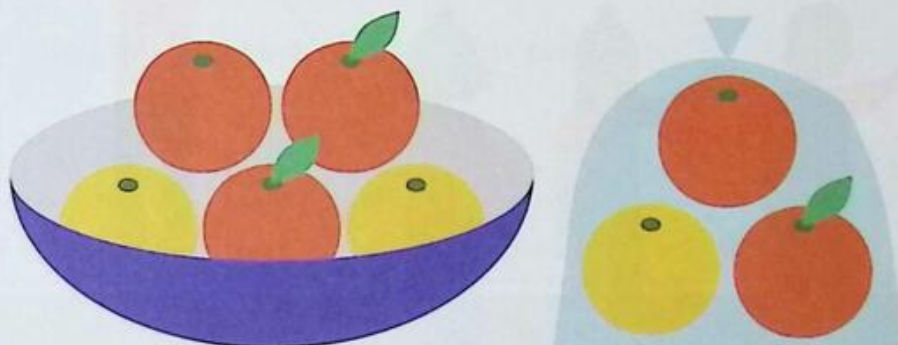


What other addition stories can you make?

Do

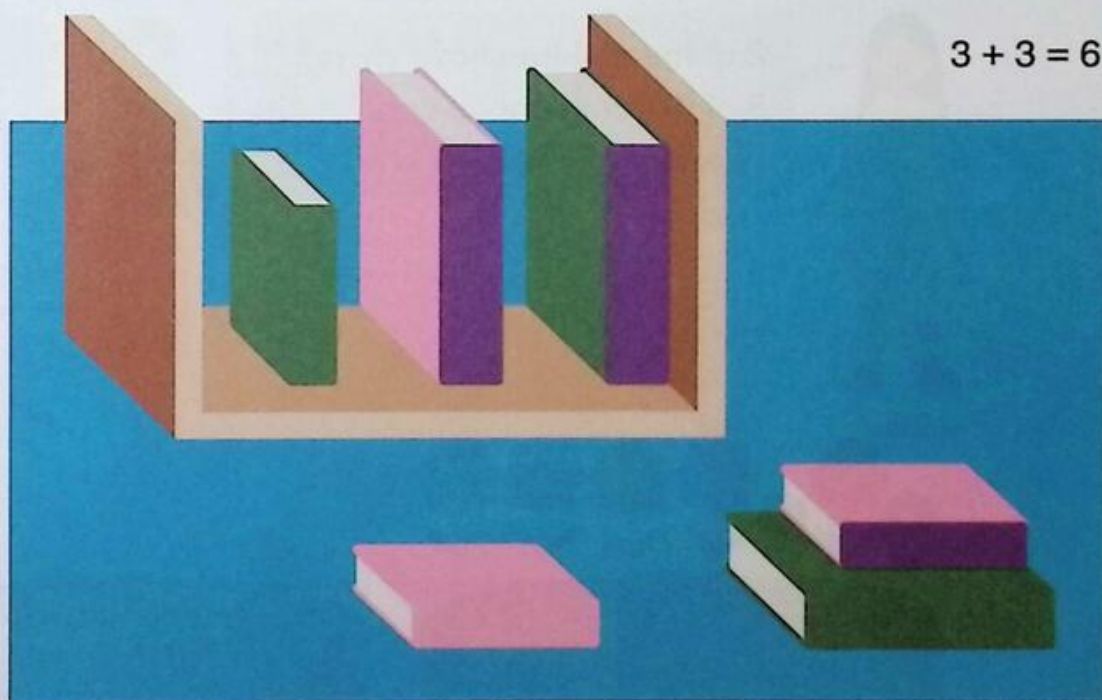
1 Make up addition stories for each equation.

(a)



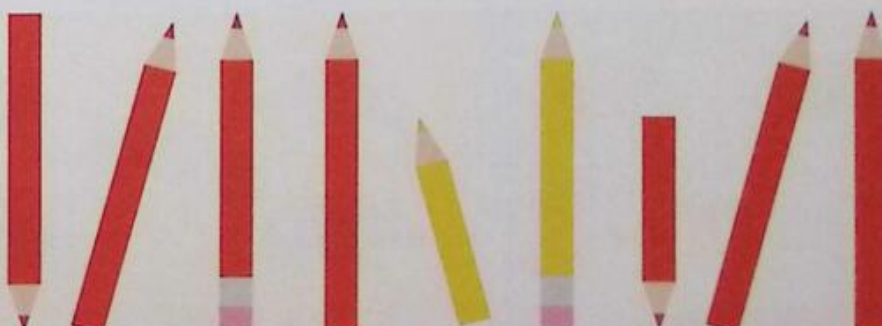
$$5 + 3 = 8$$

(b)



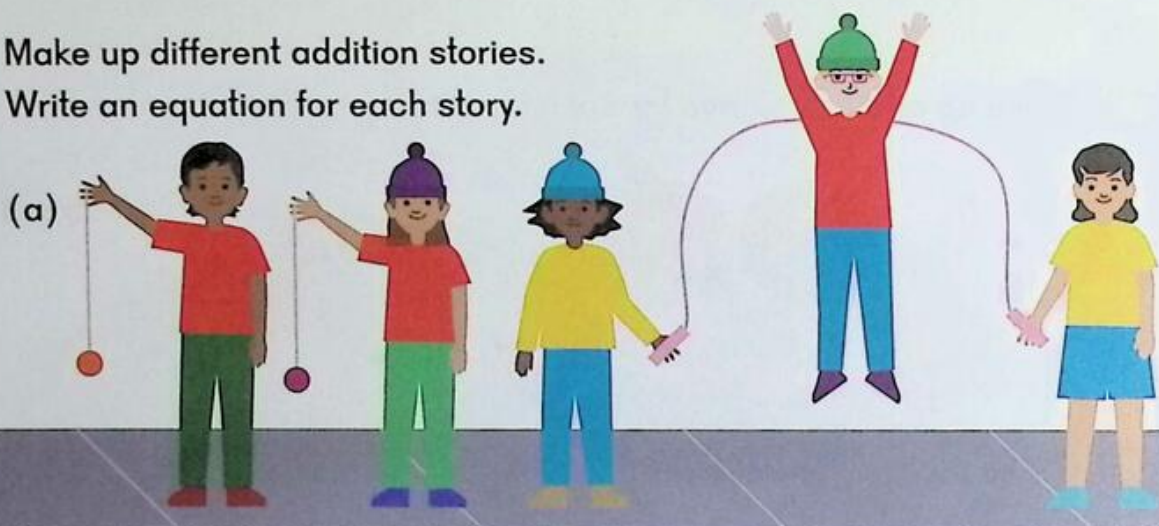
$$3 + 3 = 6$$

(c)



$$7 + 2 = 9$$

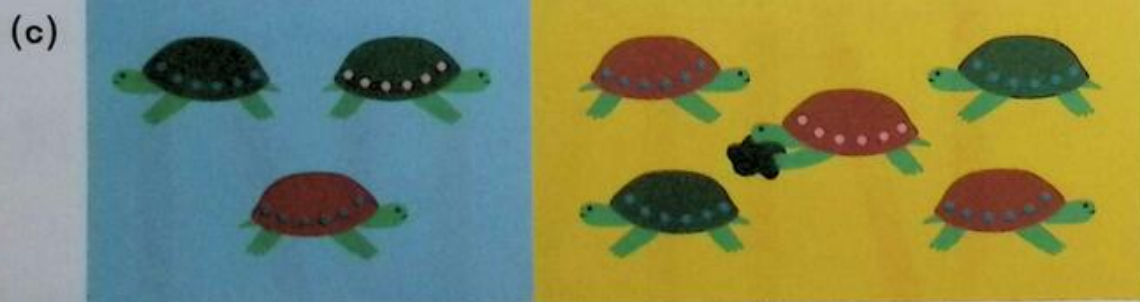
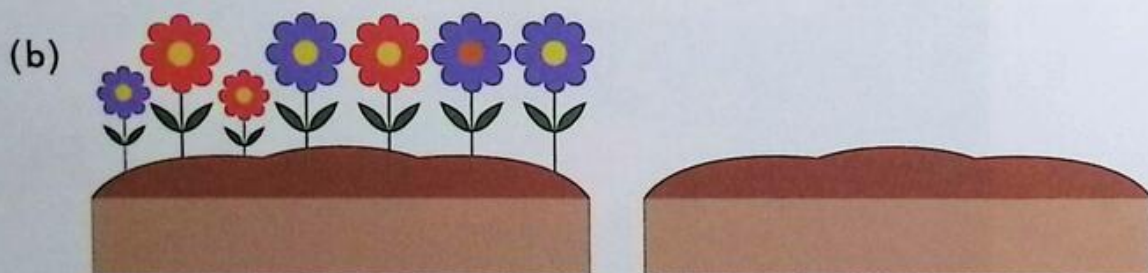
- 2 Make up different addition stories.
Write an equation for each story.



2 of the children have yo-yos.
3 of the children do not.
There are 5 children in all.



$$2 + 3 = 5$$



Lesson 7

Addition Facts

7

Think Say the answers and look for patterns.

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

Make flash cards for the facts you need to practice.

5 + 4	9
front	back

Learn

Put each addition fact under the correct answer.

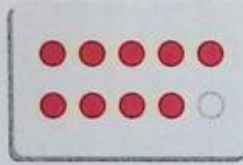
A boy is pointing to a flash card that says $5 + 5$. A red arrow points from the flash card to the number 10 on a grid. The grid has two rows of numbers: 1, 2, 3, 4, 5 in the top row and 6, 7, 8, 9, 10 in the bottom row. Below the numbers are several addition facts: $2 + 1$ is under 3, $4 + 3$ is under 7, $5 + 4$ is under 9, and $6 + 4$ is under 10.

Do

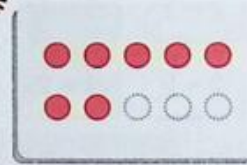
- 1 What addition facts do you see in the ten-frame cards?



$$5 + 4 = 9$$



$$5 + 2 = 7$$

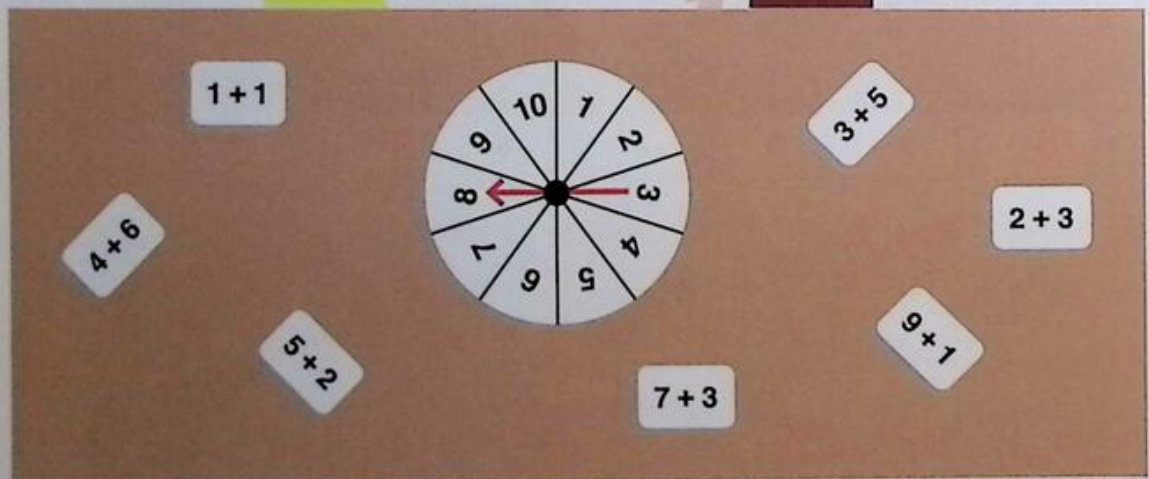
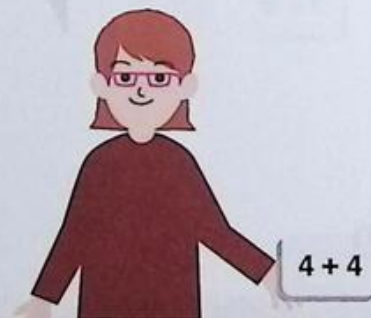


- 2 Find addition facts.

$$6 + 2 = 8$$

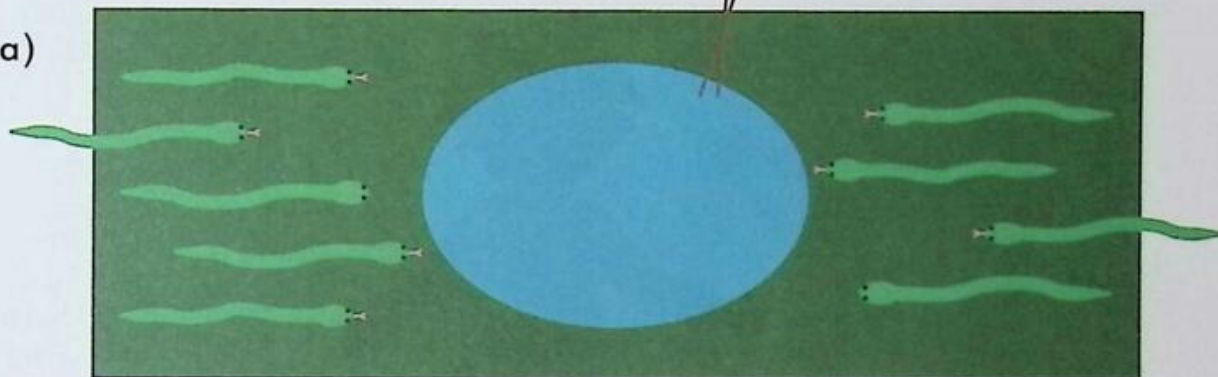


$$4 + 4 = 8$$

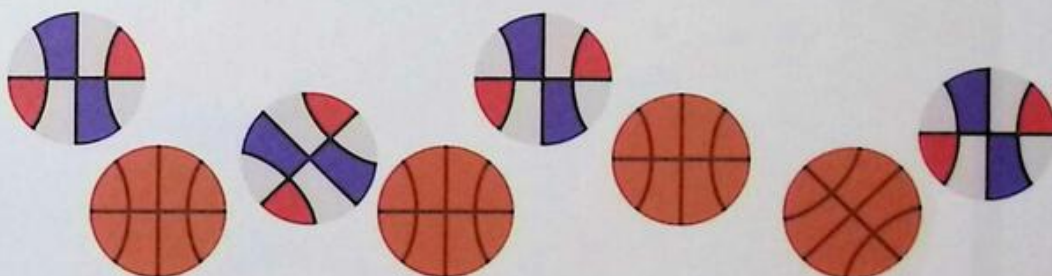


1 Write an addition equation for each picture.

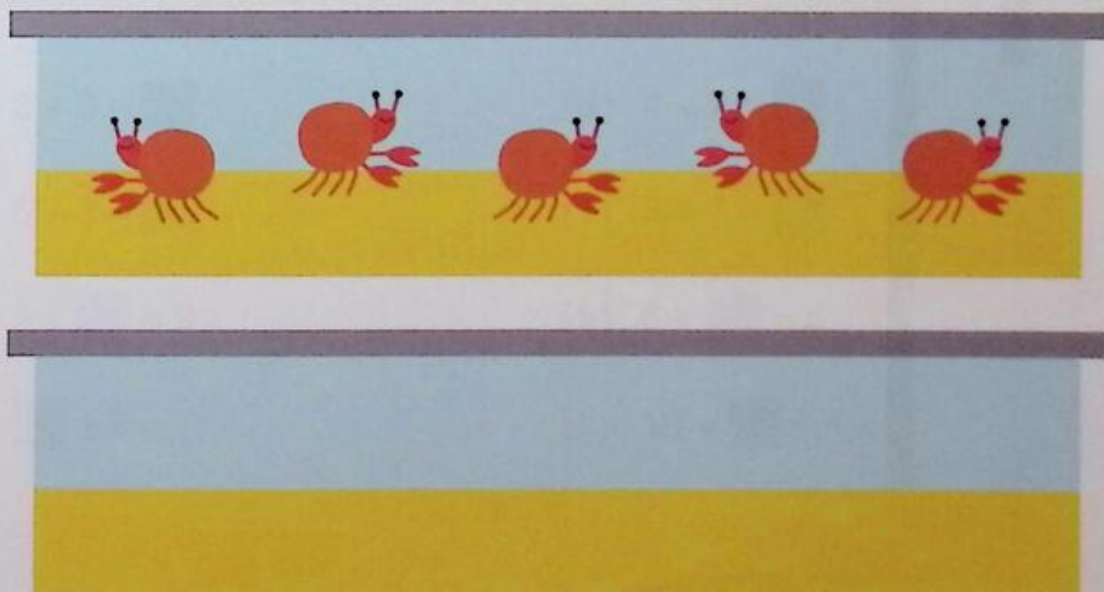
(a)



(b)



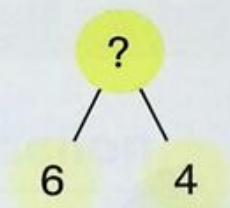
(c)



- 2 Make up addition stories about the flowers.
Write an equation for each.



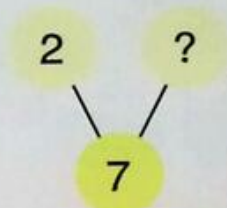
3 (a)



$$6 + \square = \square$$

$$4 + \square = \square$$

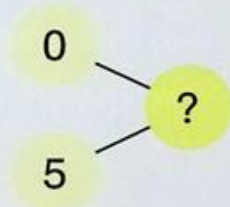
(b)



$$2 + \square = \square$$

$$\square + 2 = \square$$

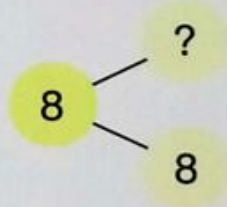
(c)



$$\square + 5 = \square$$

$$5 + \square = \square$$

(d)



$$8 + \square = 8$$

$$\square + 8 = 8$$

4

(a) $1 + 9 = \square$

(c) $3 + 6 = \square$

(e) $5 + 5 = \square$

(g) $5 + \square = 9$

(i) $\square + 5 = 7$

(b) $8 + 0 = \square$

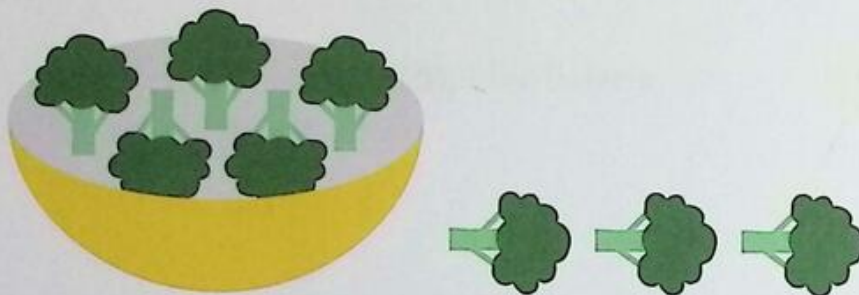
(d) $4 + 2 = \square$

(f) $3 + 7 = \square$

(h) $6 + \square = 8$

(j) $10 = \square + 4$

5



There are 5 broccoli in the bowl.

There are 3 broccoli outside the bowl.

How many broccoli are there altogether?

$$\square + \square = \square$$

There are $\square$ broccoli altogether.

6 (a) $2 + 8 = 8 + \square$

(b) $4 + 5 = 7 + \square$

(c) $6 + 1 = \square + 7$

(d) $5 + \square = 7 + 1$

(e) $3 + \square = 1 + 6$

(f) $\square + 2 = 0 + 5$

7 Which equations are true?

(a) $3 + 4 = 10$

(b) $9 = 3 + 6$

(c) $3 + 3 = 4 + 4$

(d) $3 + 6 = 6 + 3$

(e) $4 + 1 = 5 + 2$

(f) $3 + 5 = 2 + 6$

(g) $3 + 4 = 5 + 2 = 6 + 1$

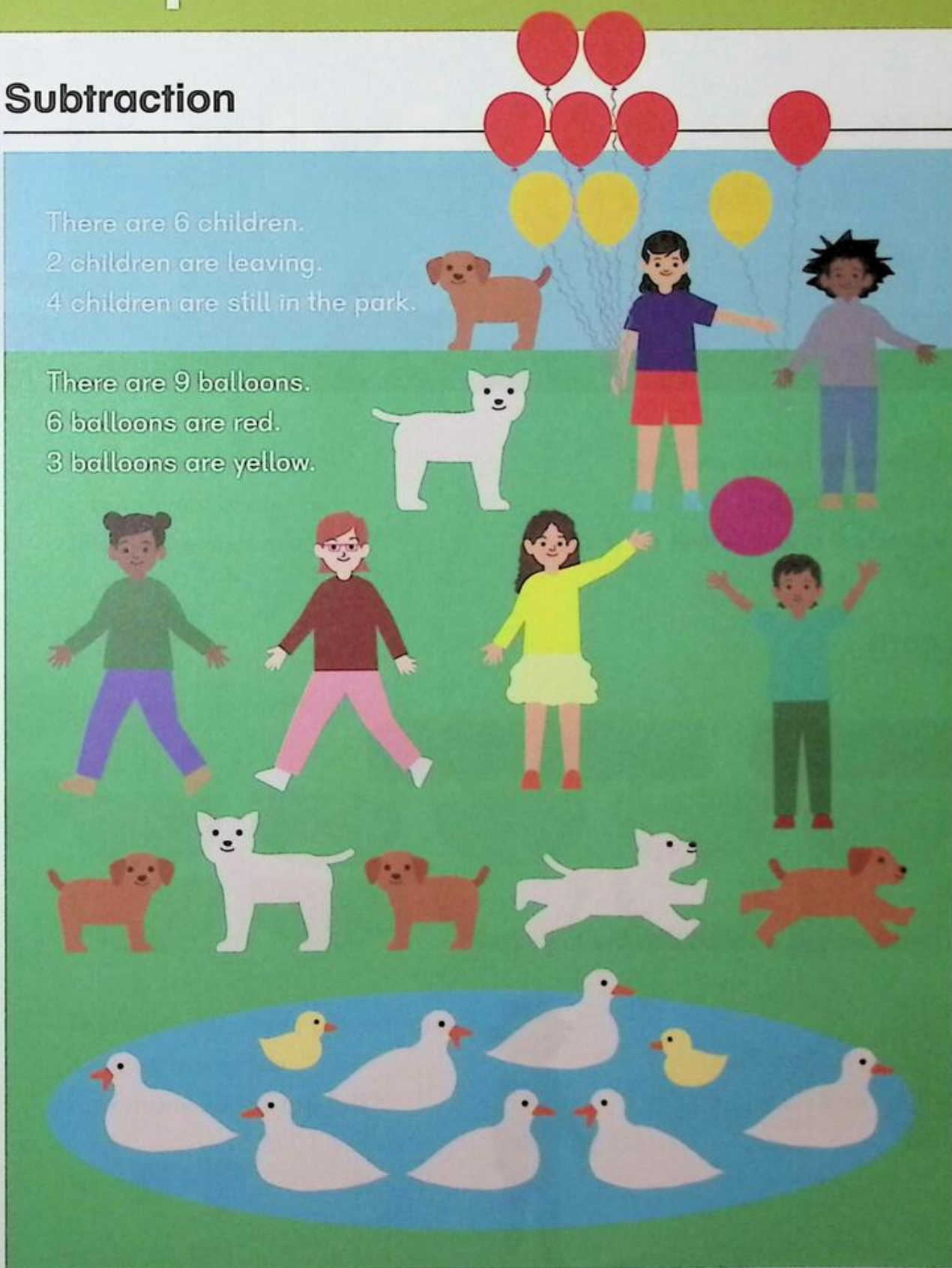
(h) $1 + 2 = 3 + 4 = 7$

Chapter 4

Subtraction

There are 6 children.
2 children are leaving.
4 children are still in the park.

There are 9 balloons.
6 balloons are red.
3 balloons are yellow.

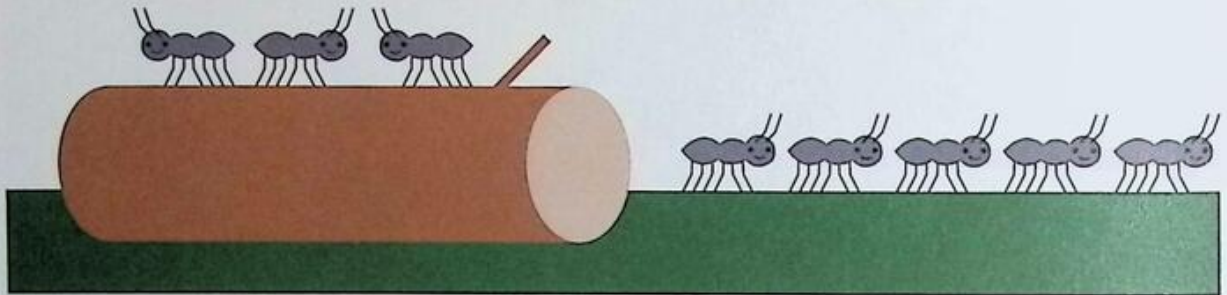


Lesson 1

Subtraction as Taking Away

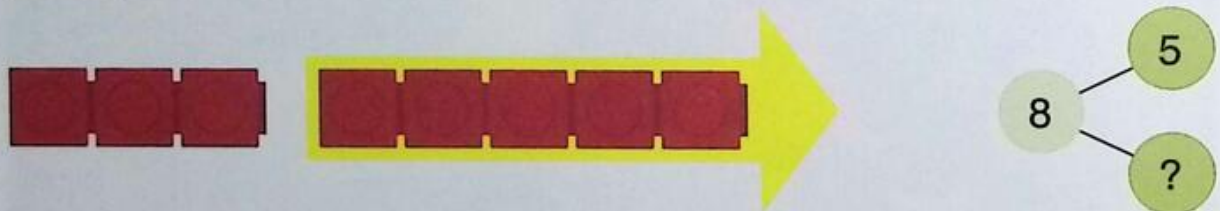
1

Think



There were 8 ants on a log.
5 ants left the log.
How many ants are still on the log?

Learn



$$8 - 5 = 3$$

There are ants still on the log.

This is subtraction.
— is read as minus.

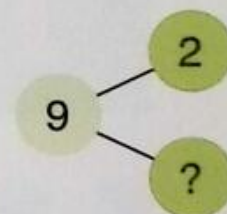


Do

①



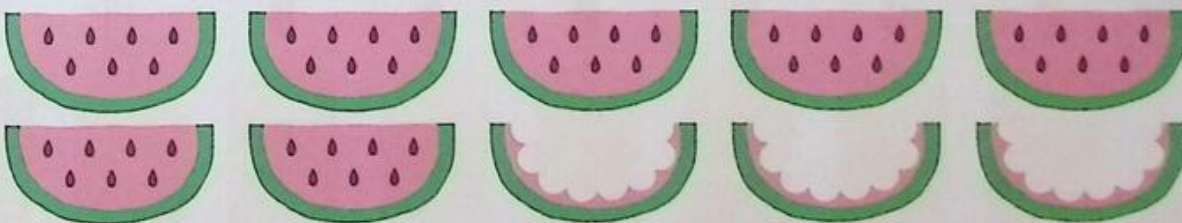
There are 9 boats.
2 boats sail away.
How many boats are left?



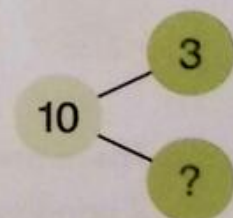
$$9 - 2 = \square$$

There are $\square$ boats left.

②



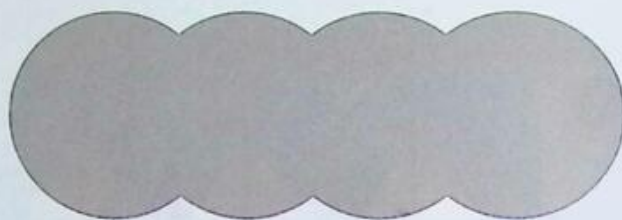
There are 10 slices of watermelon.
3 slices are eaten.
How many slices are left?



$$10 - \square = \square$$

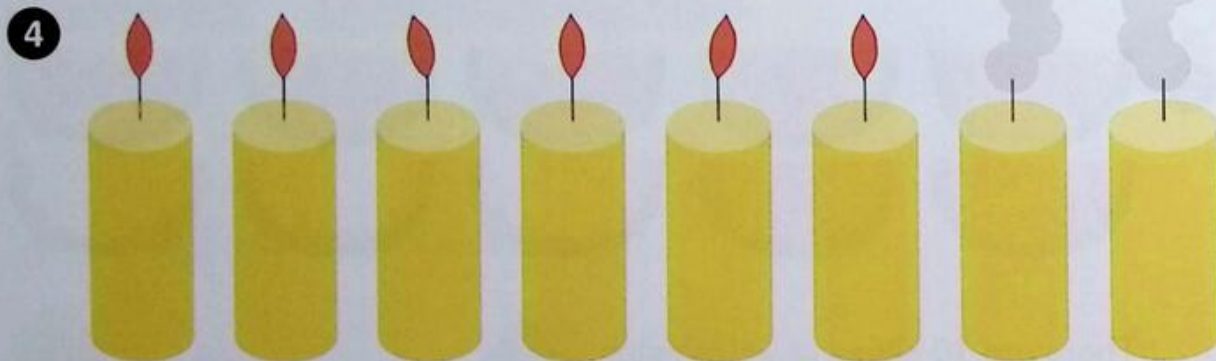
There are $\square$ slices of watermelon left.

- 3 There are 7 leaves.
4 leaves are raked away.
How many leaves are left?



$$\square - \square = \square$$

There are $\square$ leaves left.



There are 8 candles.
2 candles are blown out.
How many candles are still lit?

Write a subtraction equation for this story.

Lesson 2

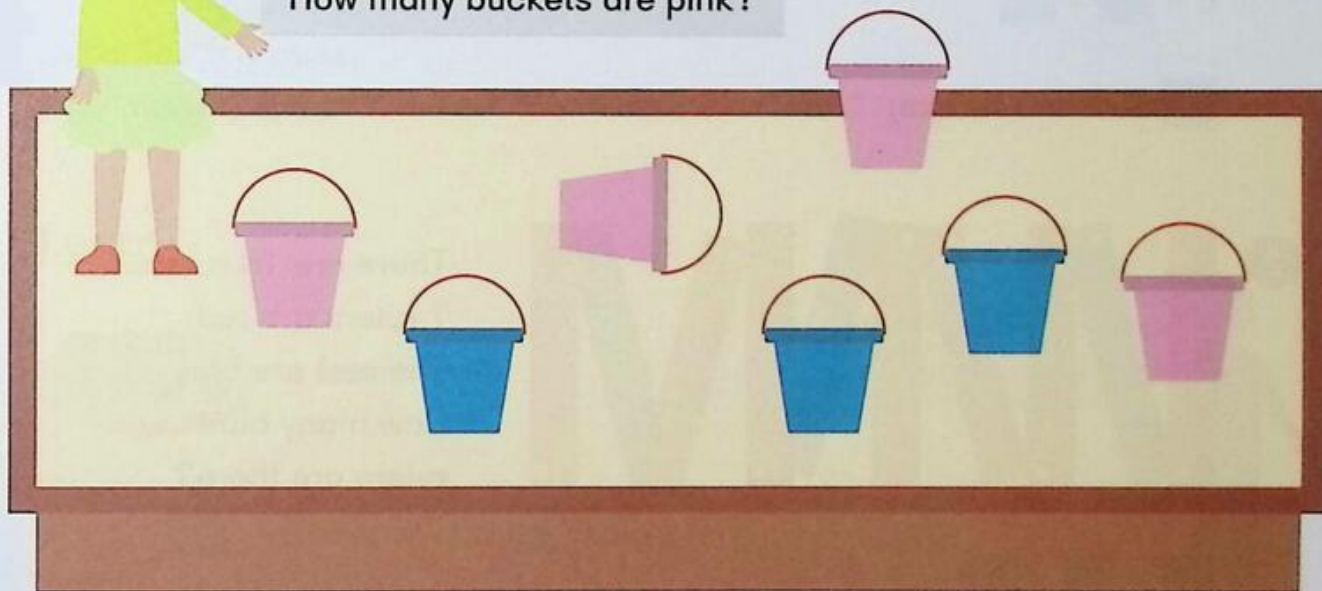
Subtraction as Taking Apart

2

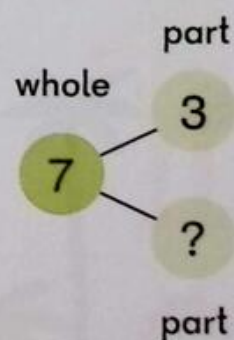
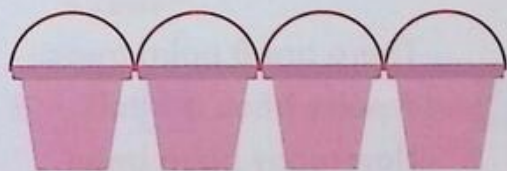
Think



There are 7 buckets.
3 buckets are blue.
How many buckets are pink?



Learn

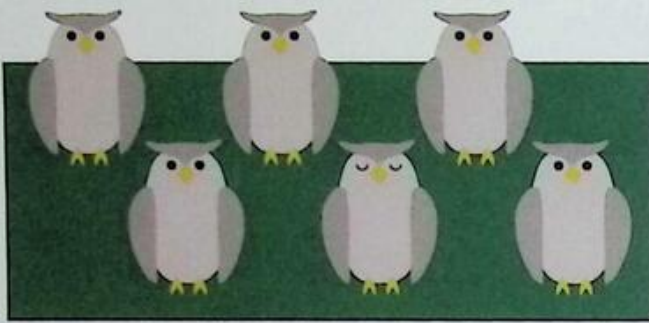


$$7 - 3 = \text{■}$$

There are pink buckets.

Do

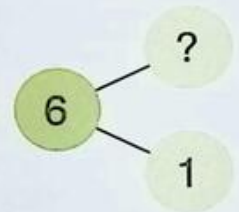
1



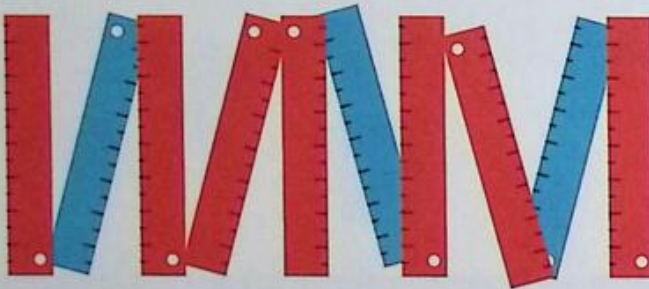
$$6 - \square = \square$$

$\square$ owls are awake.

There are 6 owls.
1 owl is sleeping.
How many owls are awake?



2

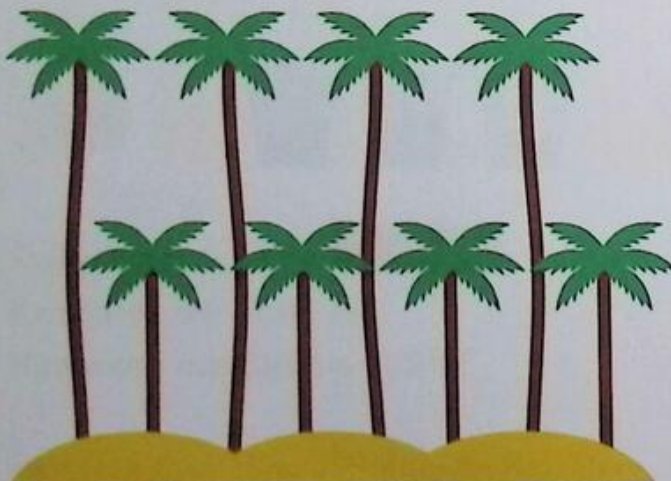


$$\square - \square = \square$$

There are $\square$ blue rulers.

There are 10 rulers.
7 rulers are red.
The rest are blue.
How many blue rulers are there?

3



There are 8 palm trees.
4 palm trees are tall.
How many palm trees are short?

Write a subtraction equation for this story.

Lesson 3

Subtraction by Counting Back

3

Think



Sofia has 8 grapes.

How many grapes will be left if she eats 1 or 2 or 3 grapes?

Learn



1 less than 8

Start with 8 and
count back ... 7.



$8 - 1 = \square$ There will be $\square$ grapes left.



2 less than 8

Start with 8 and
count back ... 7, 6.



$8 - 2 = \square$ There will be $\square$ grapes left.



3 less than 8

Count back
from 8: 7, 6, 5.



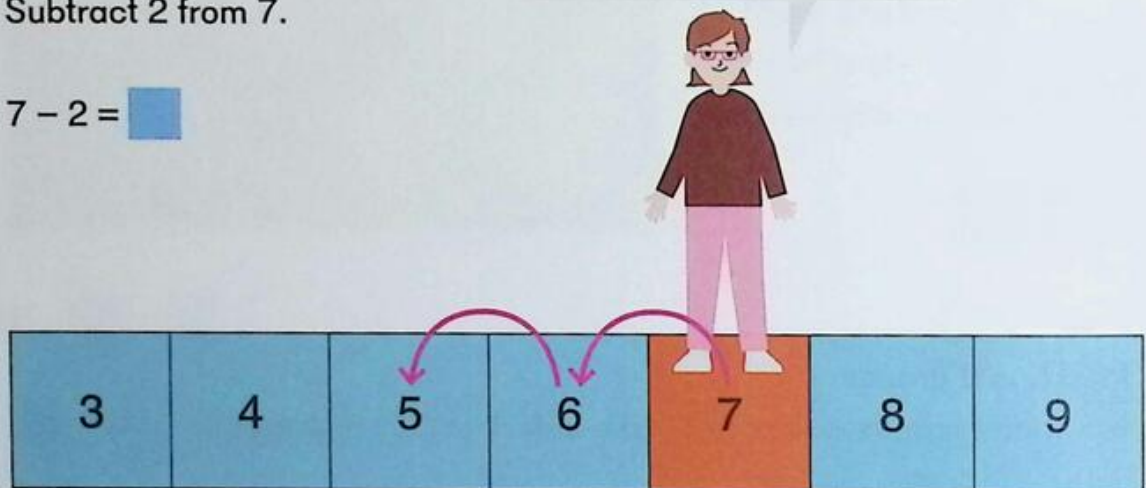
$8 - 3 = \square$ There will be $\square$ grapes left.

Do

- 1 Subtract 2 from 7.

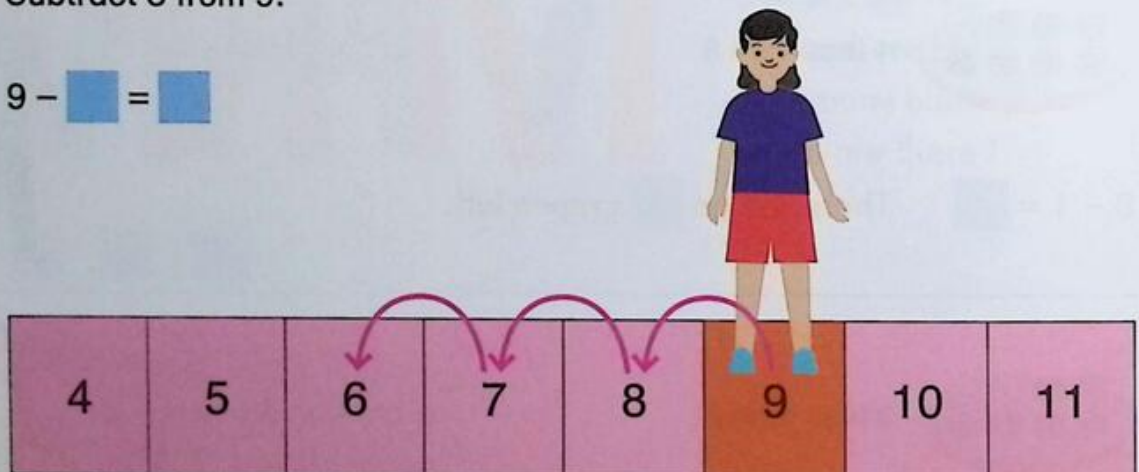
$$7 - 2 = \square$$

Count back from 7: 6, 5.



- 2 Subtract 3 from 9.

$$9 - \square = \square$$



- 3 (a) $2 - 1 = \square$ (b) $9 - 1 = \square$ (c) $\square = 10 - 1$
(d) $10 - 2 = \square$ (e) $5 - 2 = \square$ (f) $\square = 6 - 2$
(g) $6 - 3 = \square$ (h) $10 - 3 = \square$ (i) $\square = 7 - 3$

Lesson 4

Subtraction with 0

4

Think

How many pears will be left if 0 pears are eaten?

How many pears will be left if 3 pears are eaten?

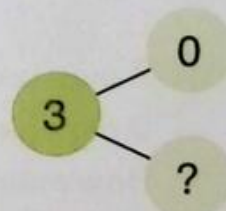


Learn



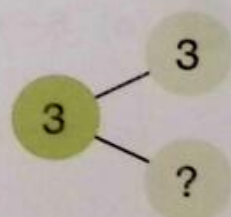
$$3 - 0 = \square$$

If 0 pears are eaten,
there will be $\square$ pears left.



$$3 - 3 = \square$$

If 3 pears are eaten,
there will be $\square$ pears left.

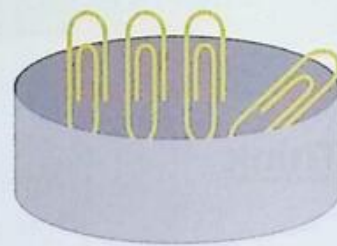


Do

- 1 Mei has 4 paper clips.
She gives away 4 paper clips.
How many paper clips does she have left?

$$\square - \square = 0$$

She has $\square$ paper clips left.



2



- 7 pigs are in the mud.
0 pigs get out.
How many pigs are still in the mud?

$$7 - \square = \square$$

There are $\square$ pigs still in the mud.



3 (a) $6 - 6 = \square$

(b) $6 - 0 = \square$

(c) $8 - 0 = \square$

(d) $8 - \square = 8$

(e) $10 - \square = 10$

(f) $\square - 10 = 0$

(g) $0 - 0 = \square$

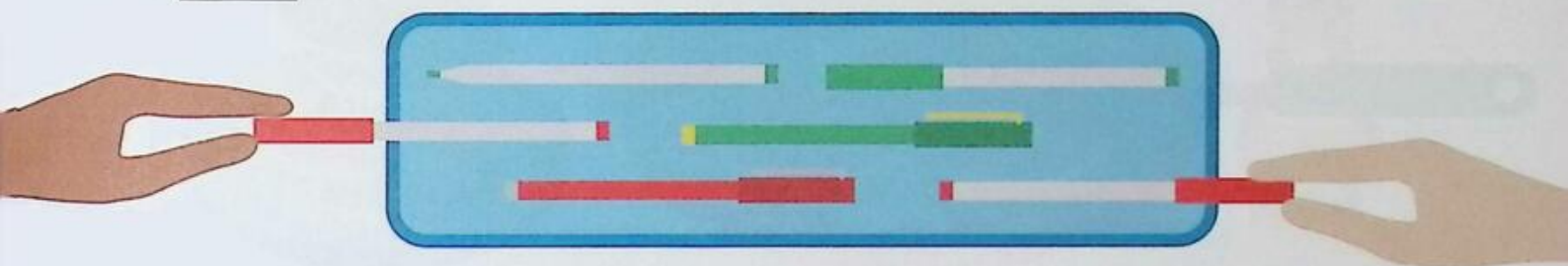
(h) $\square - 0 = 0$

Lesson 5

Make Subtraction Stories

5

Think



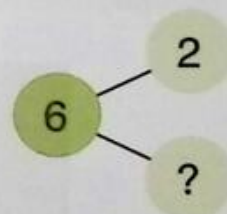
Make up a subtraction story for the pens.

Learn

There are 6 pens.
2 pens are picked up.
There are 4 pens left in the tray.



$$6 - 2 = \square$$

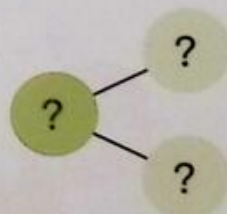


There are 6 pens.

$\square$ pens have caps.

$\square$ pen does not have a cap.

$$\square - \square = \square$$

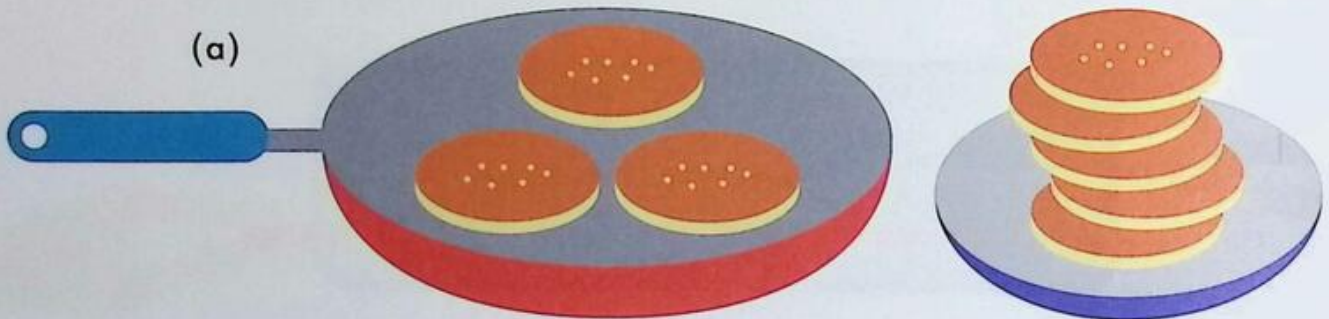


What other subtraction stories can you make?

Do

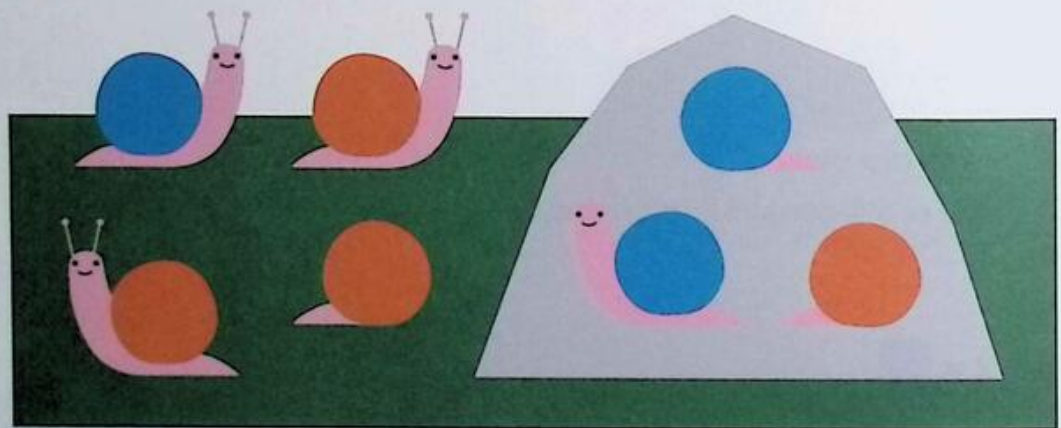
1 Make up subtraction stories for each number sentence.

(a)



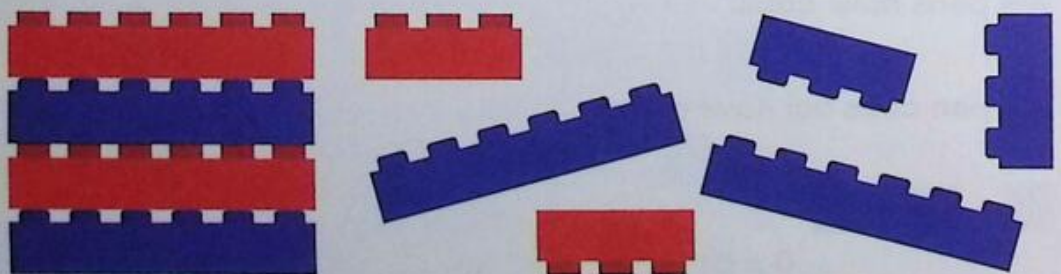
$$8 - 3 = 5$$

(b)



$$7 - 4 = 3$$

(c)



$$10 - 4 = 6$$

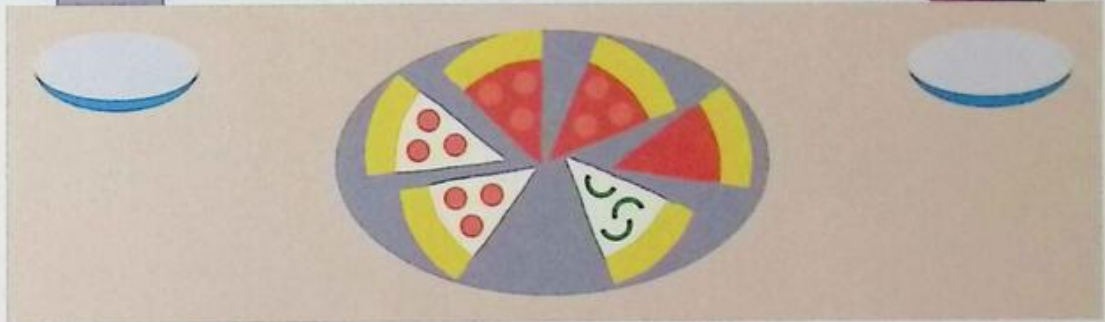
- ② Make up different subtraction stories.
Write an equation for each story.

$$8 - 1 = 7$$

(a)



There are 8 slices of pizza.
1 slice has green peppers.
7 slices do not.



(b)



(c)

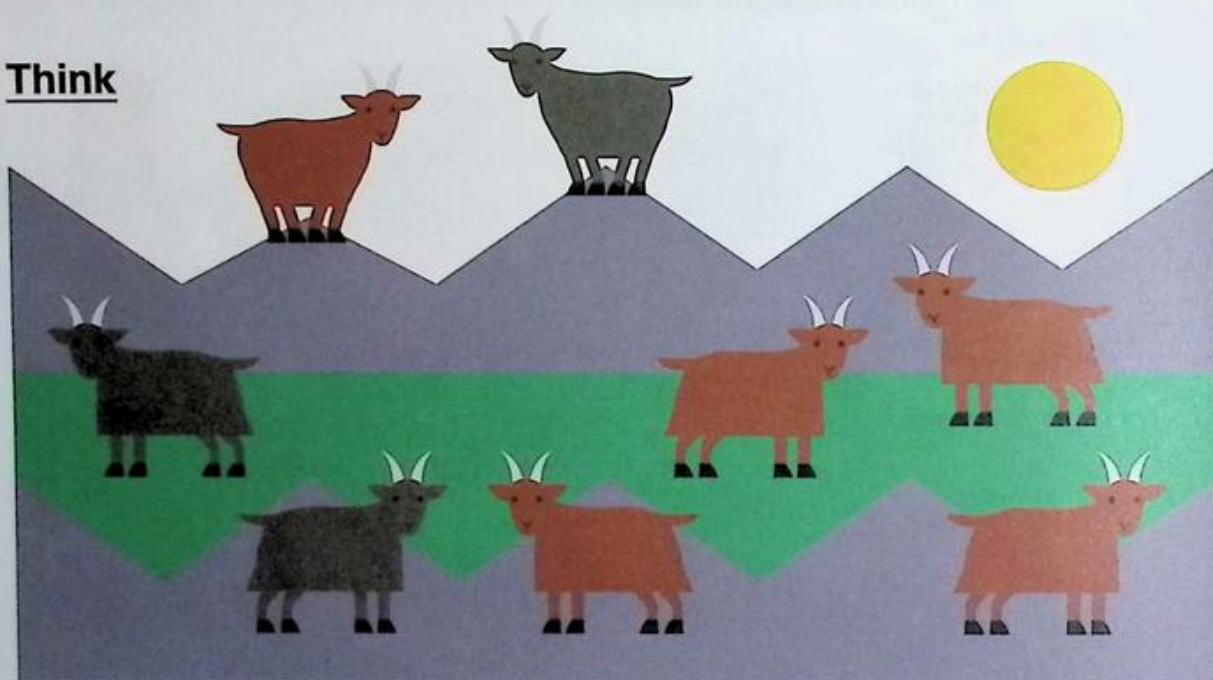


Lesson 6

Subtraction with Number Bonds

6

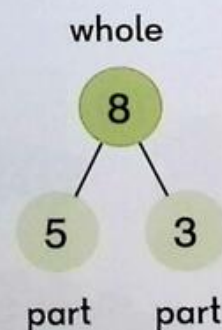
Think



There are 8 goats.
5 goats are brown.
How many goats are black?

There are 8 goats.
3 goats are black.
How many goats are brown?

Learn



$$8 - 5 = \square$$

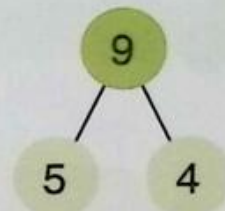
There are black goats.

$$8 - 3 = \square$$

There are brown goats.

Do

1



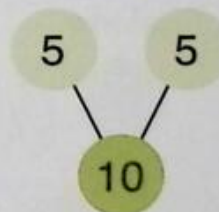
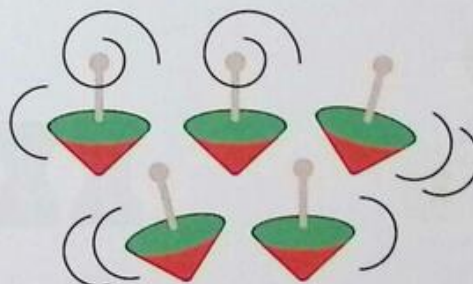
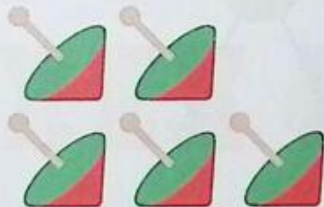
There are 9 cupcakes.
5 cupcakes have sprinkles.
How many cupcakes
do not have sprinkles?

There are 9 cupcakes.
4 cupcakes do not have sprinkles.
How many cupcakes
have sprinkles?

$$9 - \square = \square$$

$$9 - \square = \square$$

2



There are 10 tops.
5 tops are spinning.
How many tops are not spinning?

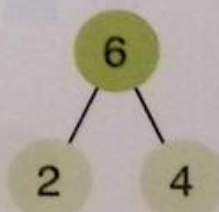
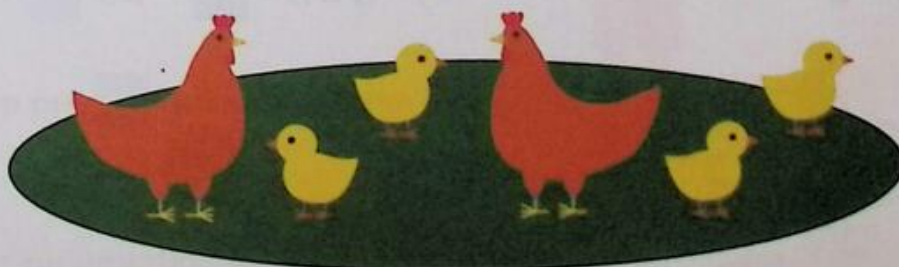
There are 10 tops.
5 tops are not spinning.
How many tops are spinning?

$$\square - \square = \square$$

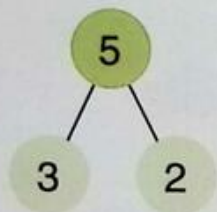
$$\square - \square = \square$$

3

Make up 2 subtraction stories for the number bond.



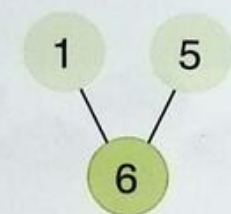
4 (a)



$$5 - 3 = \square$$

$$5 - \square = \square$$

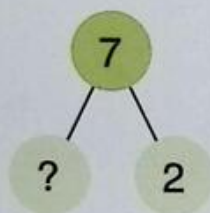
(b)



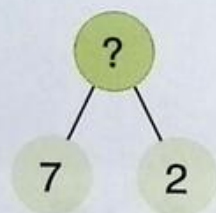
$$\square - \square = \square$$

$$\square - \square = \square$$

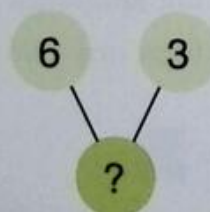
5 (a) $7 - \square = 2$



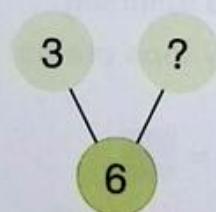
(b) $\square - 7 = 2$



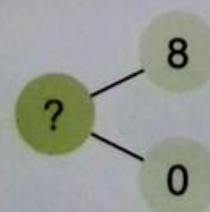
(c) $\square - 3 = 6$



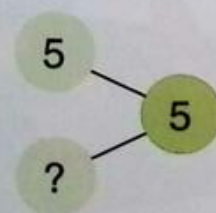
(d) $6 - \square = 3$



(e) $\square - 0 = 8$



(f) $5 = 5 - \square$



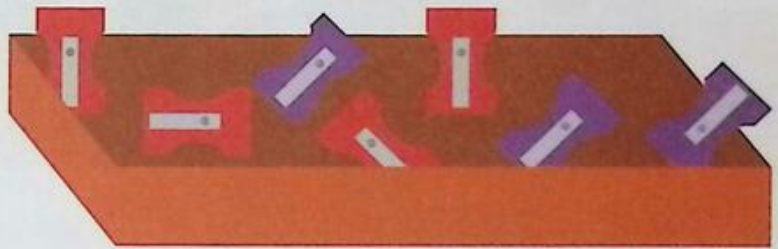
Lesson 7

Addition and Subtraction

7

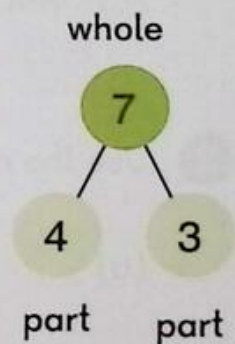
Think

There are 7 sharpeners.
4 sharpeners are red.
3 sharpeners are purple.



- (a) Write an equation for finding the total of 7 sharpeners.
- (b) Write an equation for finding the 4 red sharpeners.

Learn



$$\square + \square = 7$$

To find the whole, add the parts.

There are $\square$ sharpeners altogether.

To find a missing part, subtract the part you know from the whole.

$$\square - \square = 4$$

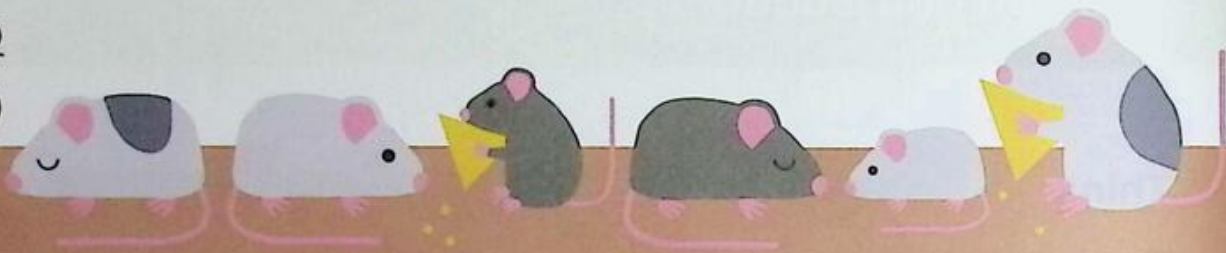
There are $\square$ red sharpeners.



Write an equation for finding the 3 purple sharpeners.

Do

1

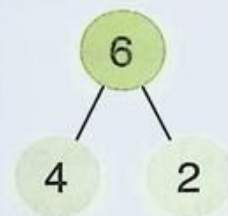


Write an equation for finding:

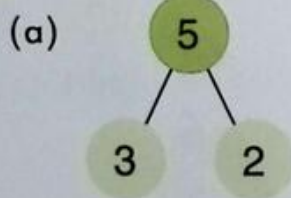
(a) The number of large mice. $\square \bigcirc \square = 4$

(b) The number of small mice. $\square \bigcirc \square = 2$

(c) The total number of mice. $\square \bigcirc \square = 6$



2 Use the number bond to complete the equations.

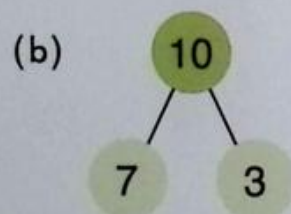


$3 + 2 = \square$

$5 - 3 = \square$

$2 + 3 = \square$

$5 - 2 = \square$

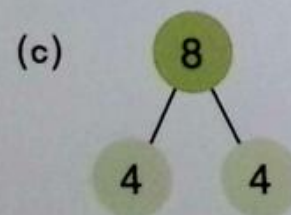


$\square + \square = \square$

$\square - \square = \square$

$\square + \square = \square$

$\square - \square = \square$



$\square + \square = \square$

$\square - \square = \square$

Lesson 8

Make Addition and Subtraction Story Problems

8

Think

Make addition and subtraction story problems.
Write the equations.



I want to find how many orange slices there are altogether.

$$\square + \square = 10$$

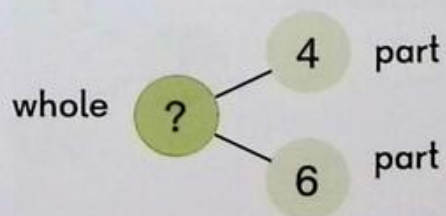


I want to find how many orange slices are small.

$$\square - \square = 4$$

Learn

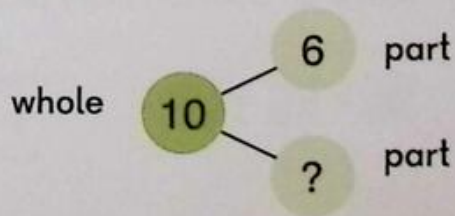
4 slices of orange are small.
6 slices are big.
How many slices are there altogether?



$$\square + \square = \square$$

There are $\square$ slices altogether.

There are 10 orange slices altogether.
6 slices are big.
How many slices are small?

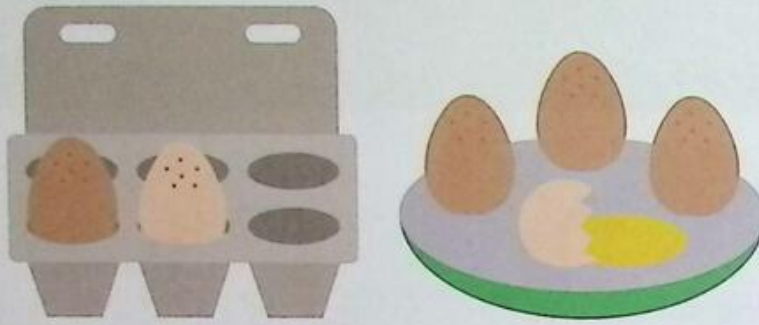


$$\square - \square = \square$$

$\square$ slices are small.

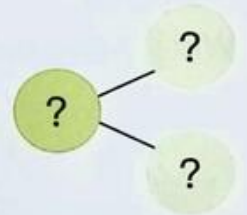
Do

1



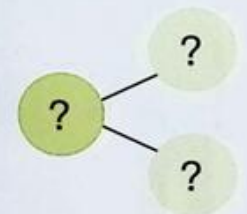
(a) Make an addition story problem about the eggs.

$$\square + \square = \square$$

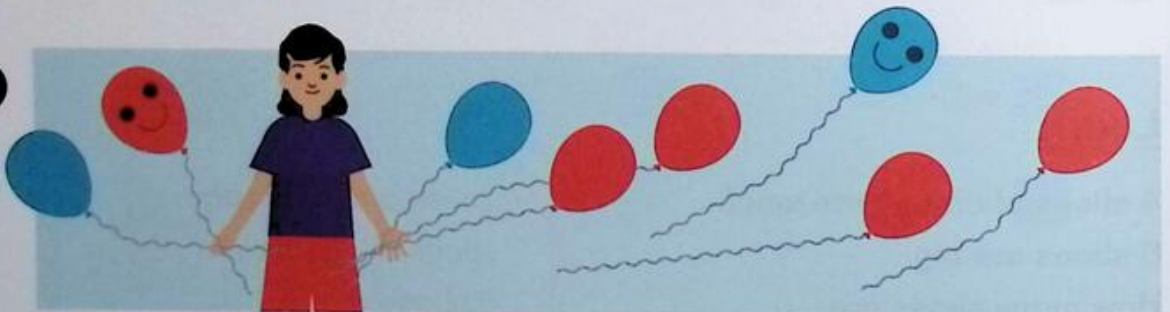


(b) Make a subtraction story problem about the eggs.

$$\square - \square = \square$$

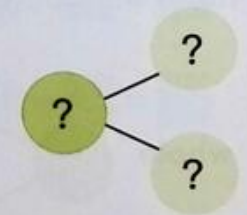


2



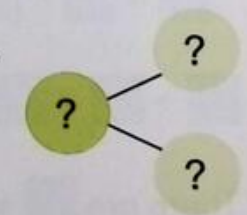
(a) Make an addition story problem about the balloons.

$$\square + \square = \square$$



(b) Make a subtraction story problem about the balloons.

$$\square - \square = \square$$



Lesson 9

Subtraction Facts

9

Think

Say the answers and look for patterns.

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

Make flash cards for the facts you need to practice.

7-3	4
front	back

Learn

Put each subtraction fact under the correct answer.

9 8 7 6

10-3 8-2

5 4 3 2 1 5-4

9-4 4-1

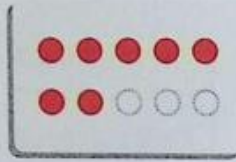
A boy is pointing to the card with the subtraction fact 5-4. A pink arrow points from the number 1 to this card.

Do

- 1 What subtraction facts do you see in the ten-frame cards?



$$10 - 3 = 7$$



$$10 - 1 = 9$$

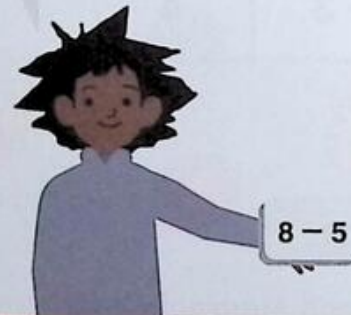


- 2 Find subtraction facts.

$$6 - 3 = 3$$

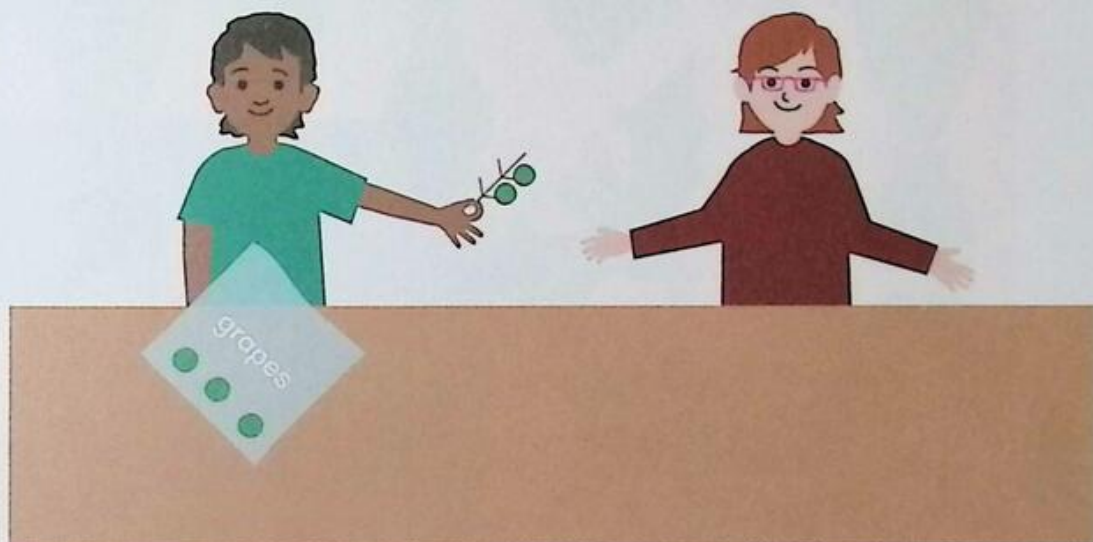


$$8 - 5 = 3$$

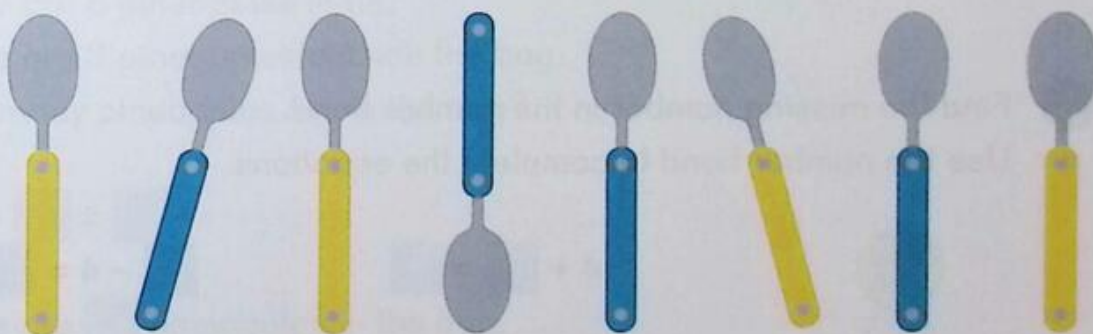


1 Write a subtraction equation for each picture.

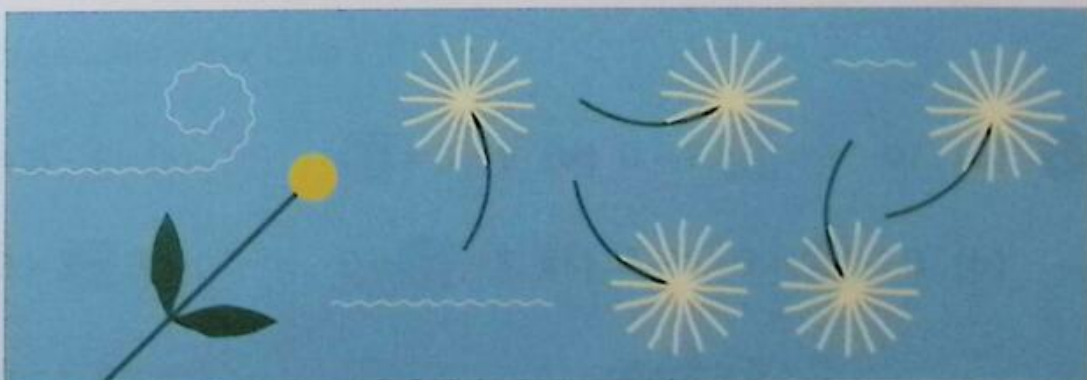
(a)



(b)



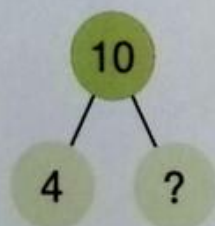
(c)



- 2 Make up subtraction stories about the bats.
Write an equation for each.



- 3 Find the missing number in the number bond.
Use the number bond to complete the equations.



$$4 + \square = \square$$

$$\square - 4 = \square$$

$$\square + 4 = \square$$

$$\square - \square = 4$$

4 (a) $10 - 9 = \square$

(b) $8 - 0 = \square$

(c) $9 - 6 = \square$

(d) $9 - \square = 4$

(e) $7 - \square = 3$

(f) $\square - 5 = 0$

5 (a) $8 - 2 = 9 - \square$

(b) $9 - 5 = 8 - \square$

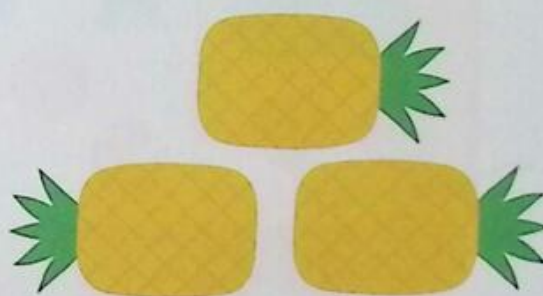
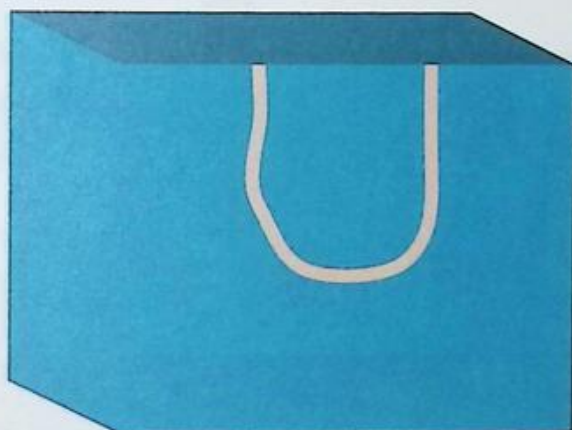
(c) $6 - 4 = \square - 6$

(d) $8 - \square = 5 - 1$

(e) $3 - \square = 6 - 6$

(f) $\square - 0 = 9 - 5$

6



There are 8 pineapples in all.

There are 3 pineapples outside the bag.

How many pineapples are in the bag?

$\square - \square = \square$

There are $\square$ pineapples in the bag.

7

Which equations are false?

(a) $10 - 4 = 6$

(b) $6 - 2 = 8$

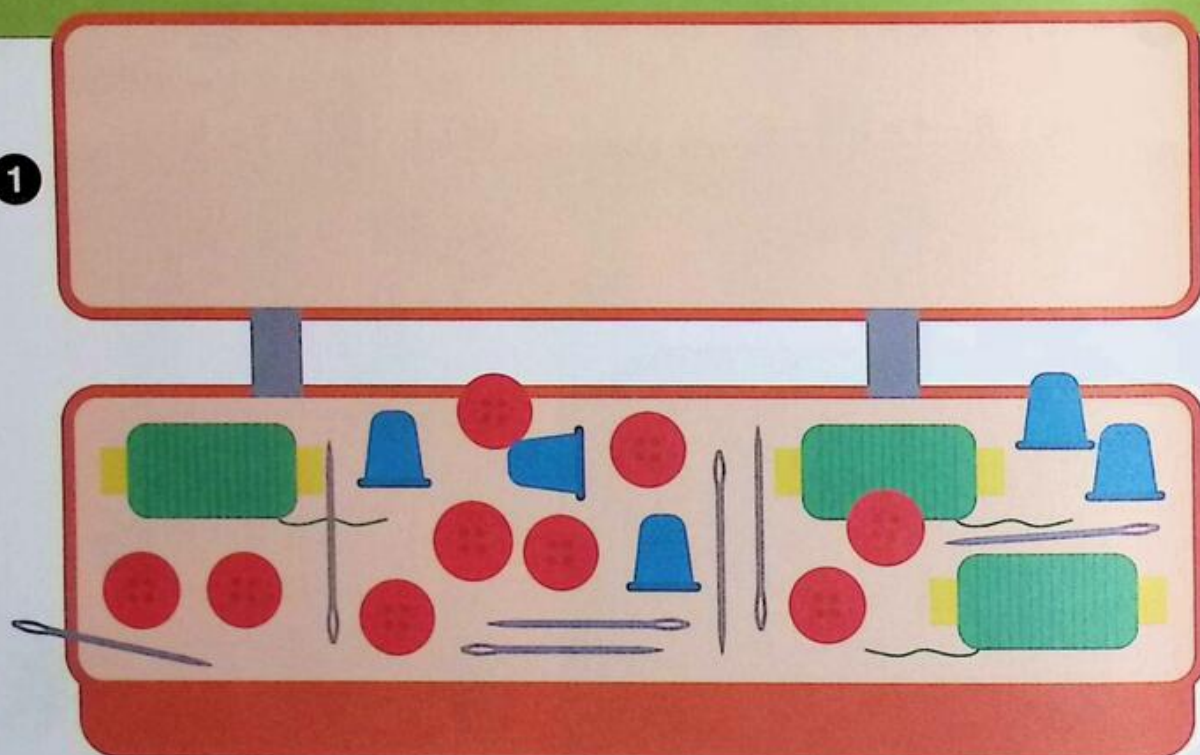
(c) $6 = 9 - 3$

(d) $3 - 3 = 4 - 4$

(e) $6 - 0 = 6 - 6$

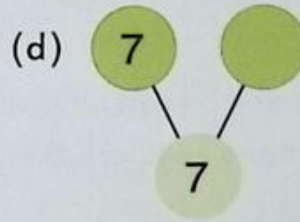
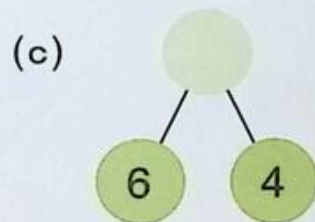
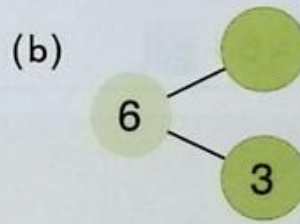
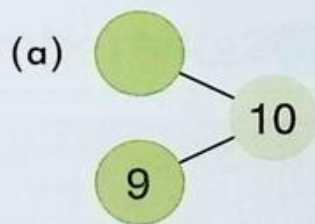
(f) $7 - 2 = 9 - 2$

1



- (a) There are 7 _____.
- (b) There are thimbles.
- (c) There are more _____ than needles.
- (d) The number of _____ is the greatest.
- (e) The number of _____ is 2 less than the number of thimbles.
- (f) The total number of _____ and _____ is 8.
- (g) Subtract 4 from the number of buttons.
The answer is the same as the number of _____.
- (h) Add to the number of needles to get an answer of 10.

2 Complete the number bonds.



3 (a) $4 + 4 = \square$

(b) $10 - 3 = \square$

(c) $3 + 6 = \square$

(d) $8 - 6 = \square$

(e) $5 + 5 = \square$

(f) $10 - 10 = \square$

(g) $2 + \square = 7$

(h) $10 - \square = 2$

4 Put in order from least to greatest.

$10 - 2$	$8 - 5$	$5 + 2$	$9 - 3$	$6 - 4$
----------	---------	---------	---------	---------

5 (a) $8 - 2 = 4 + \square$

(b) $10 - 3 = 3 + \square$

(c) $6 - 0 = 6 + \square$

(d) $2 + \square = 9 - 2$

(e) $1 + \square = 8 - 1$

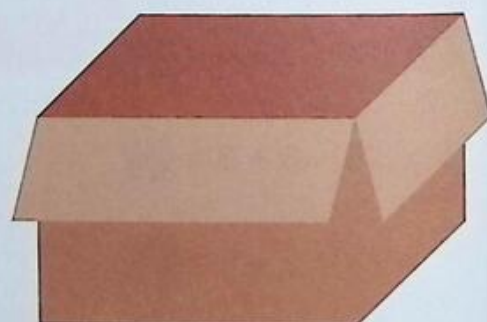
(f) $\square + 0 = 5 - 5$

6 Write an equation for each.

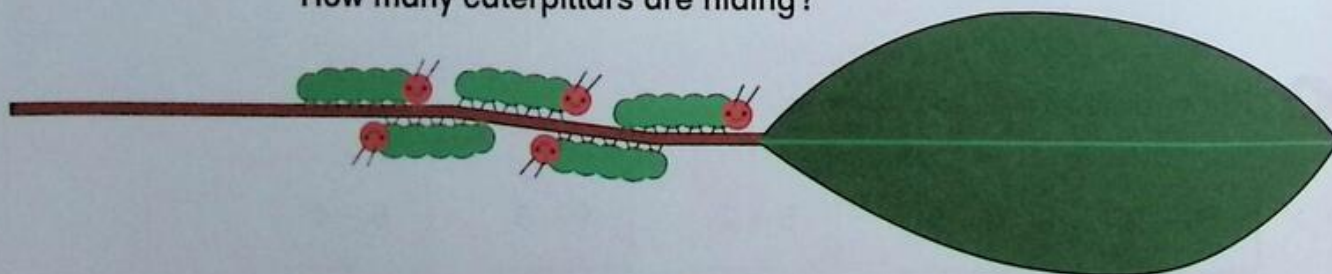
- (a) There are 5 keys on a ring.
How many keys are there altogether?



- (b) 3 cats are in the box.
How many cats are there altogether?



- (c) There are 9 caterpillars altogether.
How many caterpillars are hiding?



- (d) The necklace will have 10 beads.
How many more beads are needed?



Chapter 5

Numbers to 20



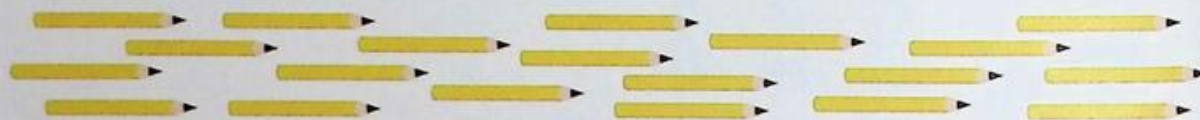
Lesson 1

Numbers to 20

1

Think

How many pencils are there?



Learn



11

eleven



12

twelve



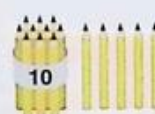
13

thirteen



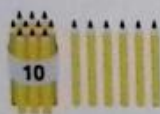
14

fourteen



15

fifteen



16

sixteen



17

seventeen



18

eighteen



19

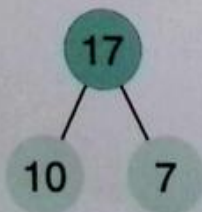
nineteen



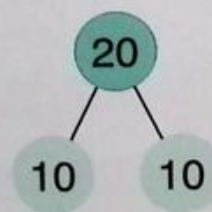
20

twenty

17 is 10 and 7.

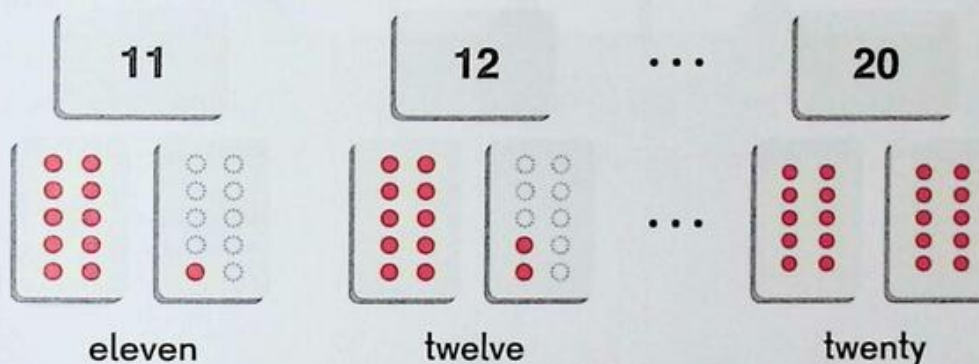


2 tens make 20.



Do

- ① Show the numbers from 11 to 20 with ten-frame cards, number cards, and number word cards.



- ② How many party hats are there?



10 and 5 make .

$10 + 5 = \text{$

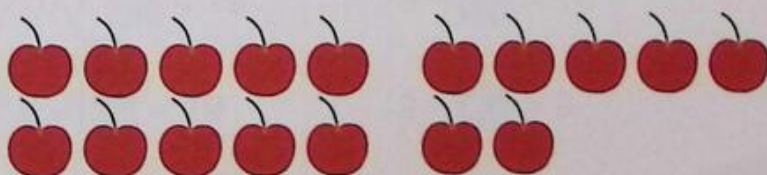
- ③ How many lollipops are there?



10 and 3 make .

$10 + 3 = \text{$

- ④ How many cherries are there?



is 10 and 7.

= $10 + 7$

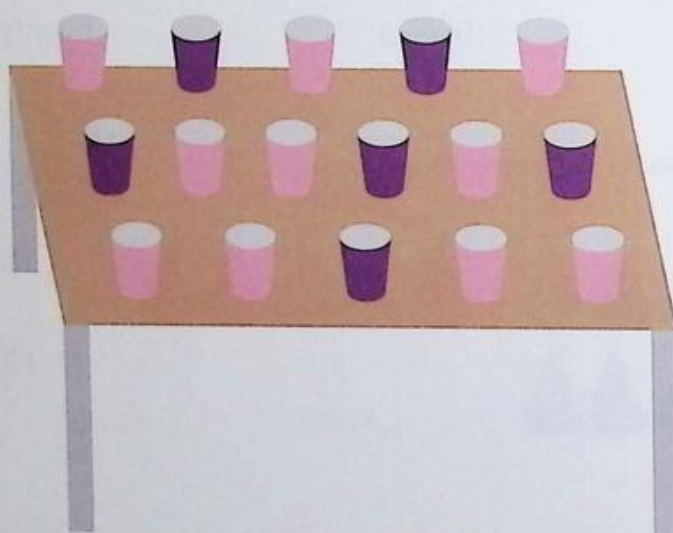
Lesson 2

Add or Subtract Tens or Ones

2

Think

There are 10 pink cups and 6 purple cups.
How many cups are there altogether?



There are 16 cups.
6 cups are purple.
The rest are pink.
How many pink cups are there?



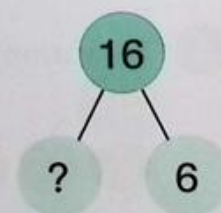
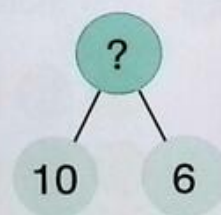
Learn

$$10 + 6 = \square$$

There are $\square$ cups altogether.

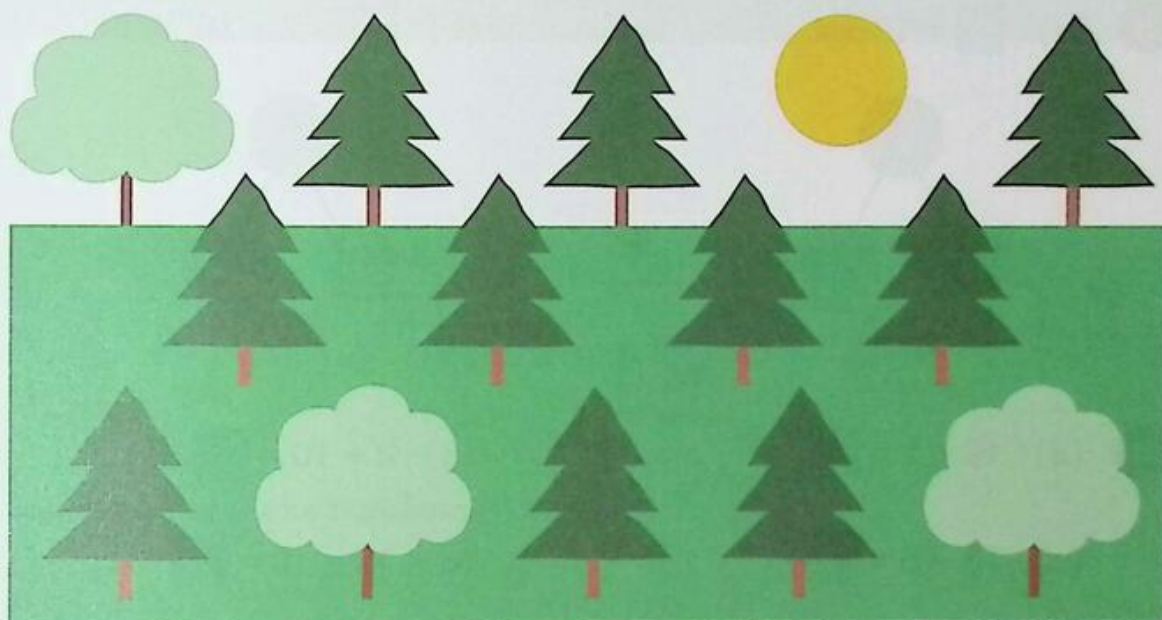
$$16 - 6 = \square$$

There are $\square$ pink cups.



Do

①

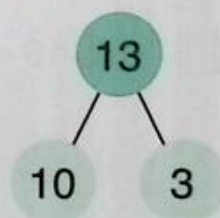


$10 + 3 = \square$

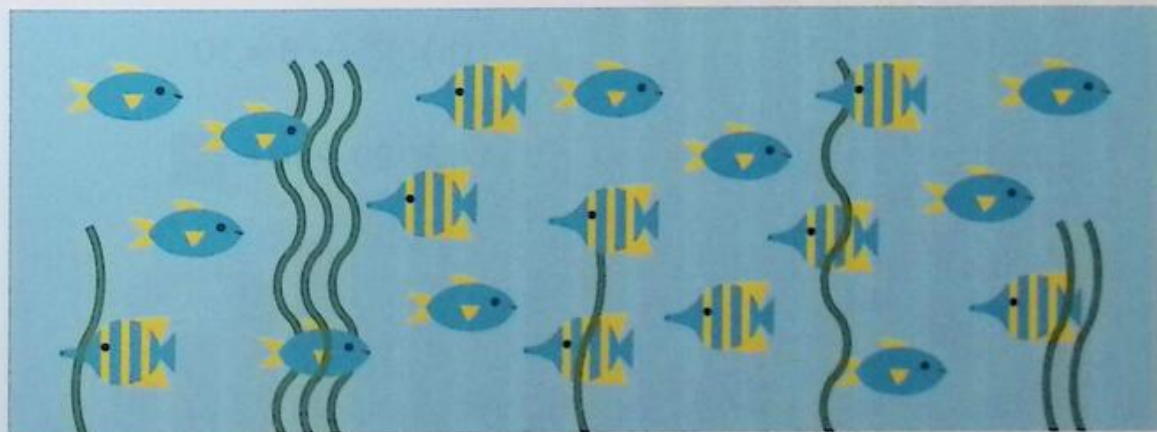
$13 - 3 = \square$

$3 + 10 = \square$

$13 - 10 = \square$



②

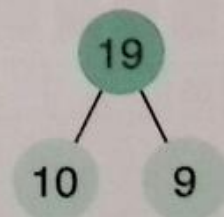


$10 + \square = 19$

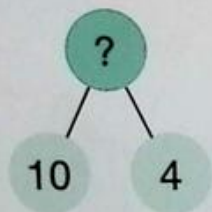
$19 - \square = 10$

$9 + \square = 19$

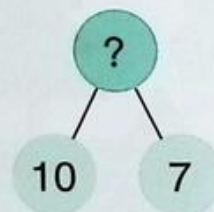
$19 - \square = 9$



3 (a) $\square = 10 + 4$



(b) $\square - 7 = 10$



4 (a) $10 + 1 = \square$

(c) $15 - 5 = \square$

(b) $2 + 10 = \square$

(d) $18 - 10 = \square$

5 (a) $16 = 10 + \square$

(c) $\square = 10 + 8$

(e) $17 - \square = 7$

(g) $10 = \square - 1$

(i) $10 + 10 = \square$

(b) $\square + 9 = 19$

(d) $13 - \square = 10$

(f) $\square - 10 = 5$

(h) $\square - 8 = 10$

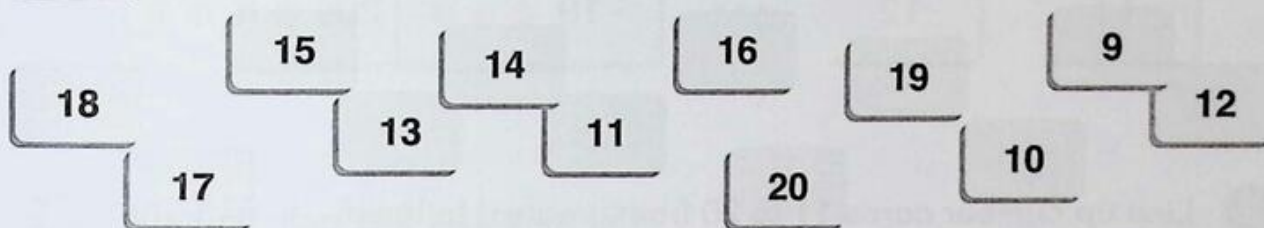
(j) $20 - 10 = \square$

Lesson 3

Order Numbers to 20

3

Think

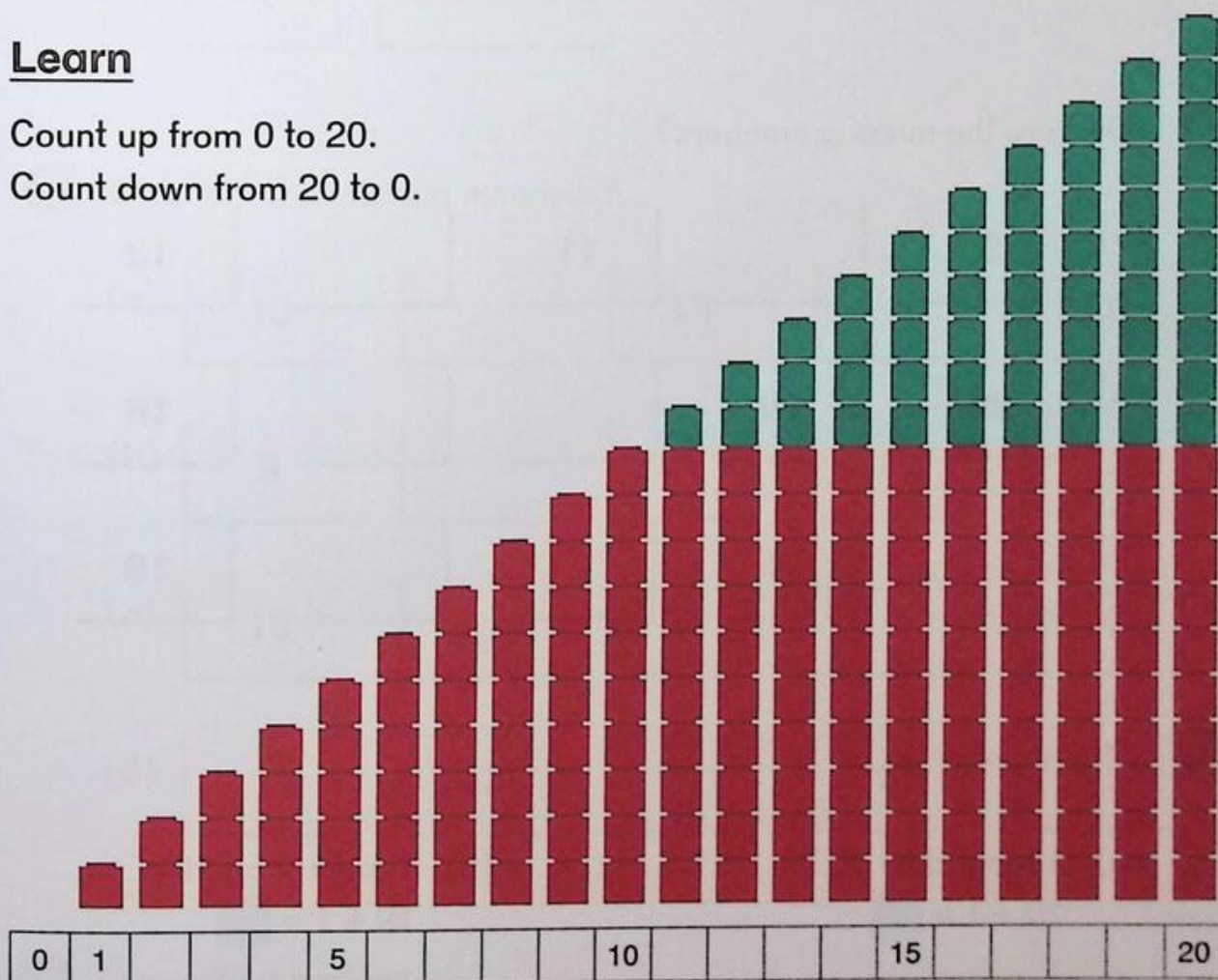


How can we order these numbers?

Learn

Count up from 0 to 20.

Count down from 20 to 0.



What are the missing numbers?

Do

- 1 Line up number cards 11 to 20 from least to greatest.

11	12	...	19	20
----	----	-----	----	----

- 2 Line up number cards 11 to 20 from greatest to least.

20	19	...	12	11
----	----	-----	----	----

- 3 What are the missing numbers?

(a)	9		11		13
(b)	20	19			16
(c)		15			18

- 4 What number is...

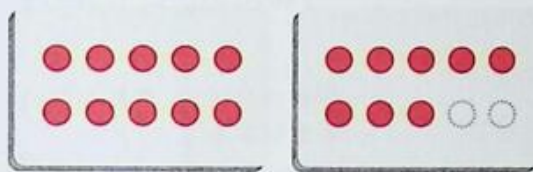
(a) 1 more than 10?
 $10 + 1 = \square$

(b) 1 more than 19?
 $19 + 1 = \square$

(c) 1 less than 15?
 $15 - 1 = \square$

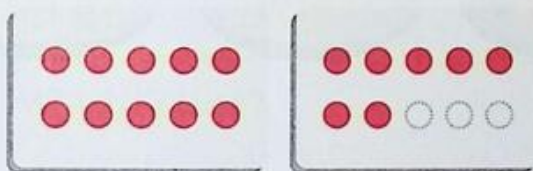
(d) 1 less than 20?
 $20 - 1 = \square$

- ⑤ What number is 2 more than 18?



$$18 + 2 = \boxed{}$$

- ⑥ What number is 2 less than 17?



$$17 - 2 = \boxed{}$$

- ⑦ What are the missing numbers?

(a)	12		16		20
(b)	9			15	17
(c)	18		14		10
(d)		17		13	

- ⑧ Play with a partner.

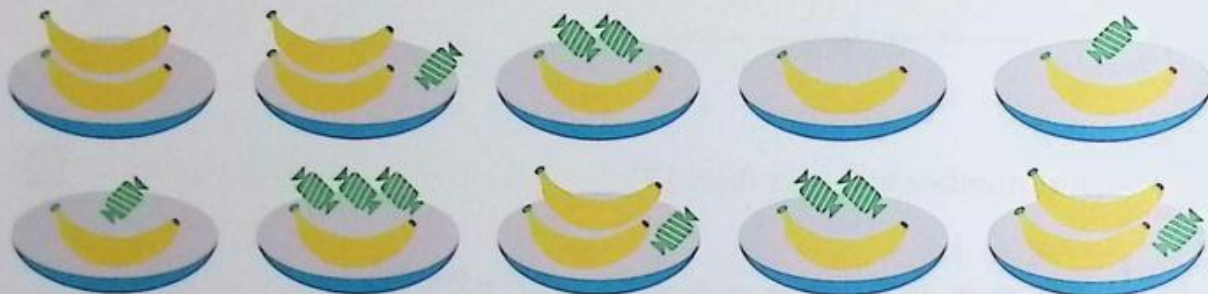
Show a number card and say the number that is 2 more and 2 less.

Lesson 4

Compare Numbers to 20

4

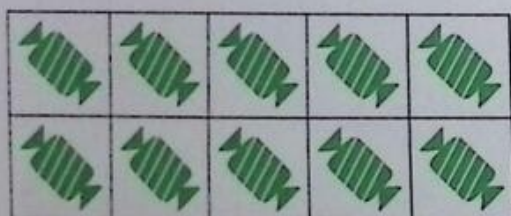
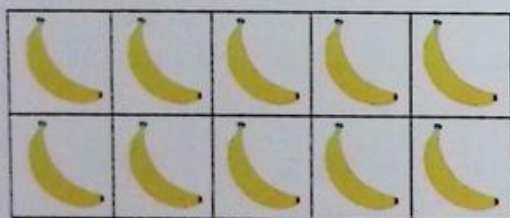
Think



Are there more candies or bananas?

Are there fewer candies or bananas?

Learn



4 is greater than 2 so...

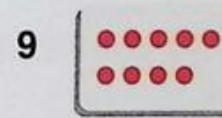
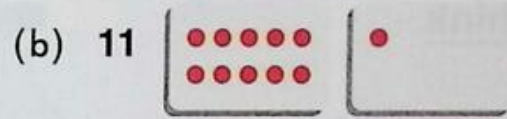
There are more _____ than _____.

There are fewer _____ than _____.

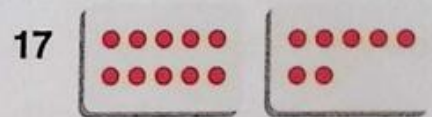
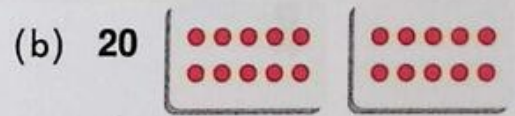


Do

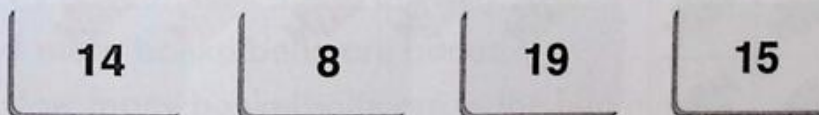
① Which is greater?



② Which is less?



③ Compare these numbers.



(a) Which is the greatest?

(b) Which is the least?

Lesson 5

Addition

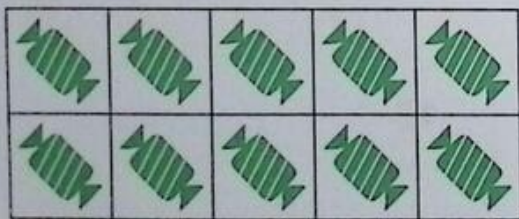
5

Think



There are 12 green candies and 3 orange candies.
How many candies are there altogether?

Learn



$$12 + 3 = \square$$

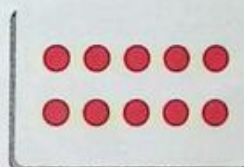
There are $\square$ candies altogether.

$$2 + 3 = 5$$



Do

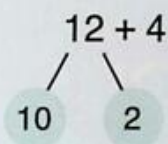
- ① Add 15 and 3.



$$15 + 3 = \square$$

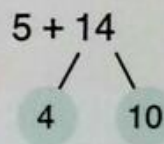
- ② (a) Add 12 and 4.

$$12 + 4 = \square$$

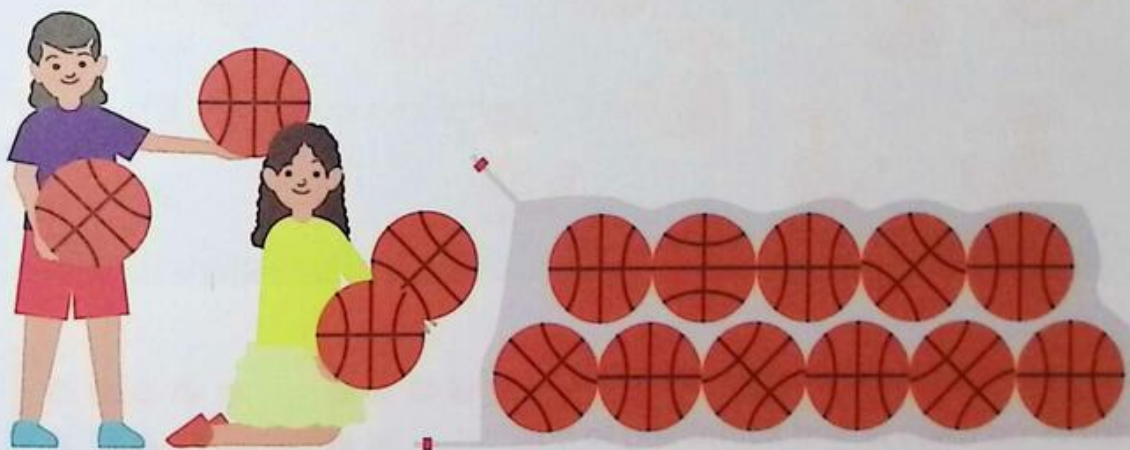


- (b) Add 5 and 14.

$$5 + 14 = \square$$



- ③



11 basketballs are in the bag.

4 more basketballs are added.

How many basketballs are in the bag now?

$$\square + \square = \square$$

There are $\square$ basketballs in the bag now.

- ④ (a) $16 + 3 = \square$

- (b) $12 + 7 = \square$

- (c) $5 + 11 = \square$

- (d) $3 + 13 = \square$

- (e) $\square + 10 = 20$

- (f) $17 = 15 + \square$

Lesson 6

Subtraction

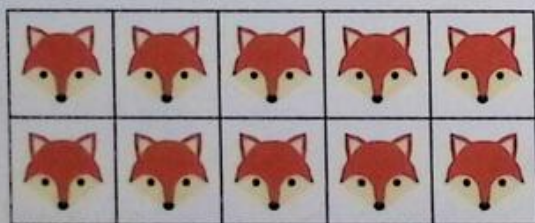
6

Think



There are 15 foxes sitting in the snow.
3 foxes go away to find something to eat.
How many foxes are left?

Learn



$$15 - 3 = \square$$

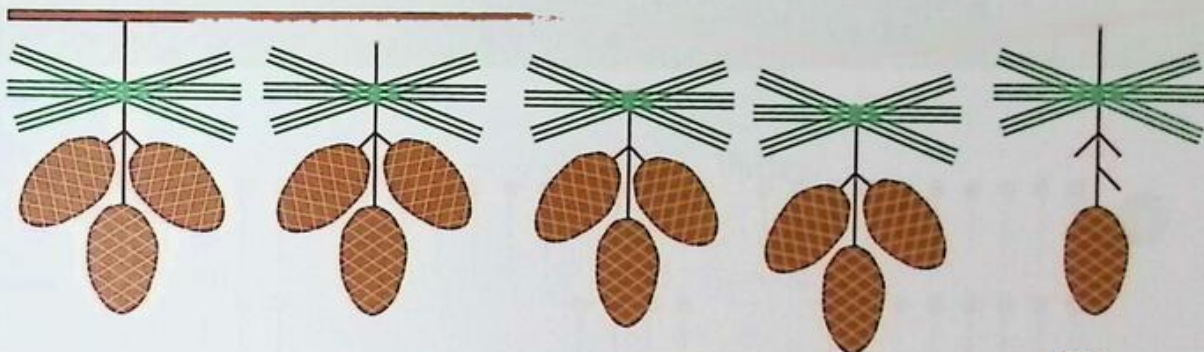
There are $\square$ foxes left.

$$5 - 3 = 2$$



Do

1



There are 16 pinecones on a branch.

3 pinecones fall off.

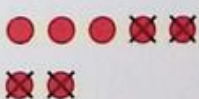
How many pinecones are left on the branch?

$$\square - \square = \square$$

There are $\square$ pinecones left on the branch.

2

Subtract 4 from 17.

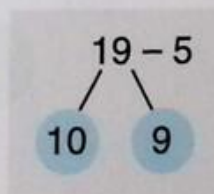


$$17 - 4 = \square$$

3

Subtract 5 from 19.

$$19 - 5 = \square$$



4

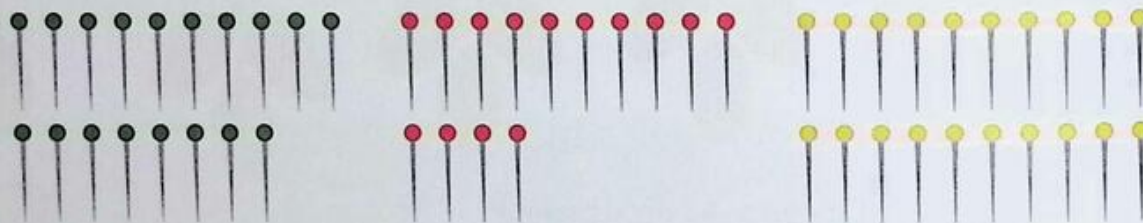
(a) $19 - 4 = \square$

(b) $17 - 3 = \square$

(c) $16 - 5 = \square$

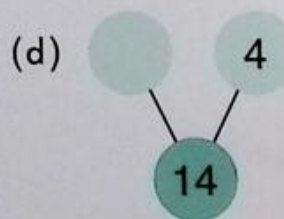
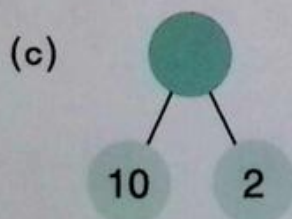
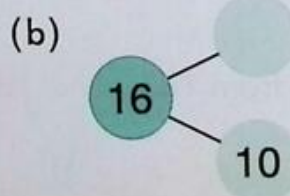
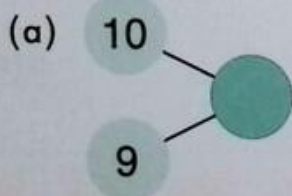
(d) $12 - 1 = \square$

1



- (a) There are red pins, yellow pins, and green pins.
- (b) There are fewer _____ pins than green pins.
- (c) The number of _____ pins is the same as $10 + 4$.
- (d) The number of _____ pins is the same as 2 tens.
- (e) The number of _____ pins is the least.

2 Complete the number bonds.



3 Write the numbers.

(a) eleven

(b) thirteen

(c) eighteen

(d) twelve

(e) twenty

(f) fifteen

4 Put in order from least to greatest.

(a)

14

9

16

12

17

(b)

1 ten 5 ones

8 ones 1 ten

$10 + 4$

$2 + 10$

eleven

5 (a) $10 + 4 =$

(b) $17 - 7 =$

(c) $10 + 6 =$

(d) $18 - 10 =$

(e) $20 - 1 =$

(f) $13 + 2 =$

(g) $17 - 2 =$

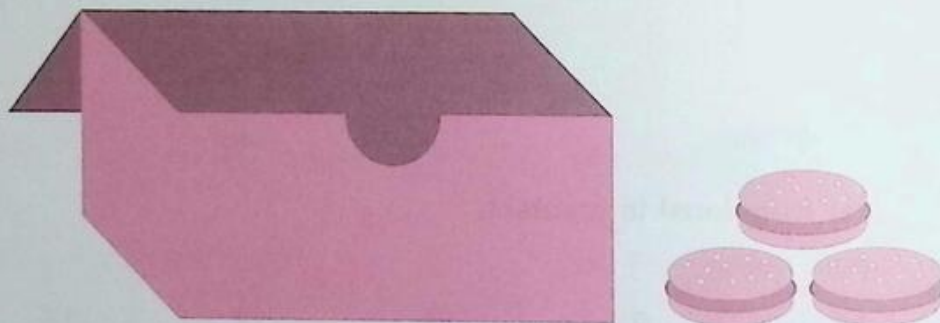
(h) $14 + 3 =$

(i) $12 + 5 =$

(j) $10 + 10 =$

6 Write an equation for each and find the answer.

- (a) There are 15 cookies in the box.
If 3 more cookies are put in the box,
how many cookies will be in the box?



- (b) There are 19 marbles.
5 marbles are not in the bag.
How many marbles are in the bag?



7 (a) $14 + \square = 16$

(b) $\square + 10 = 20$

(c) $\square + 1 = 11$

(d) $19 - \square = 10$

(e) $10 + \square = 15$

(f) $13 - \square = 3$

(g) $18 - \square = 12$

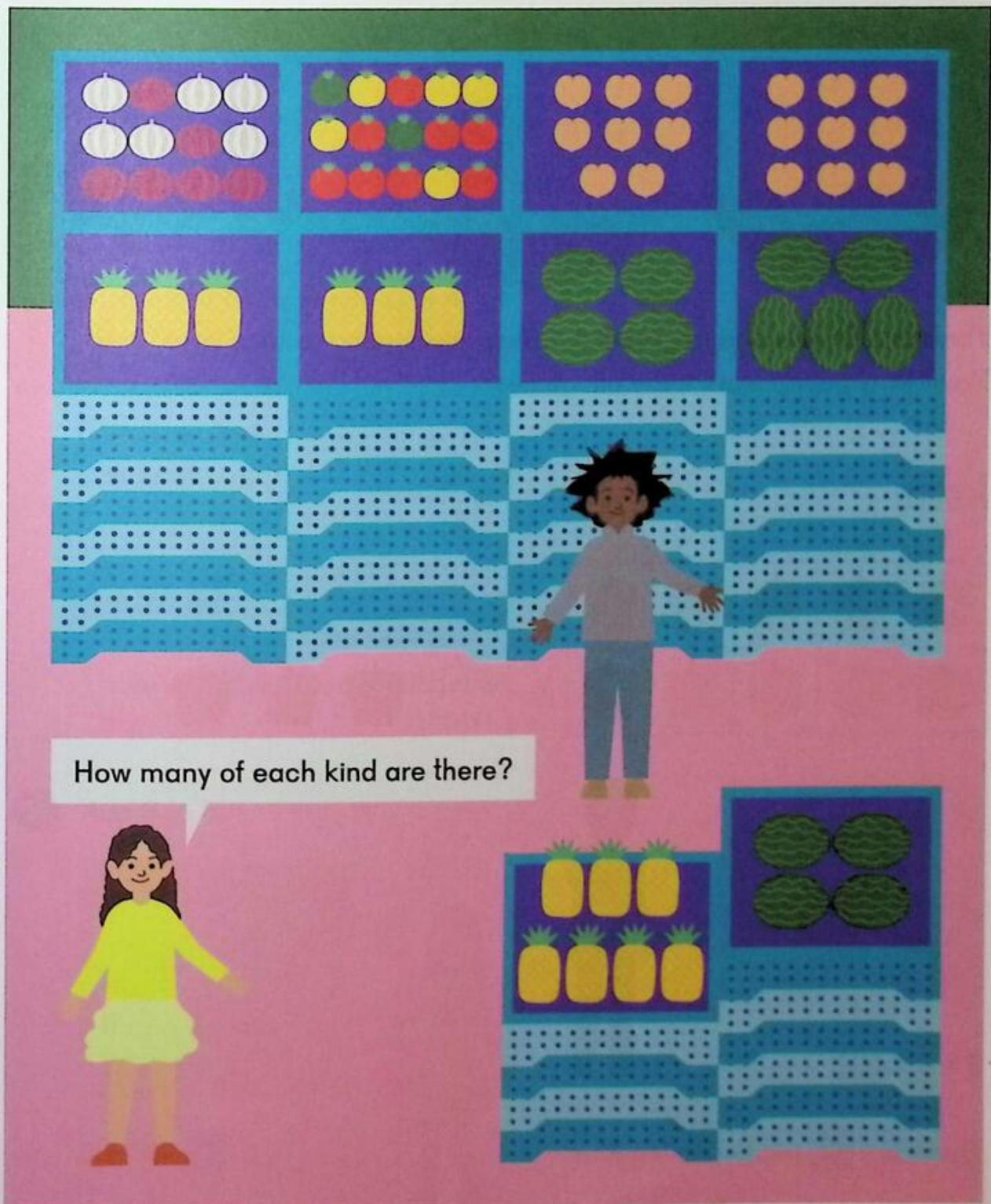
(h) $\square + 13 = 18$

(i) $16 - \square = 11$

(j) $12 + \square = 19$

Chapter 6

Addition to 20

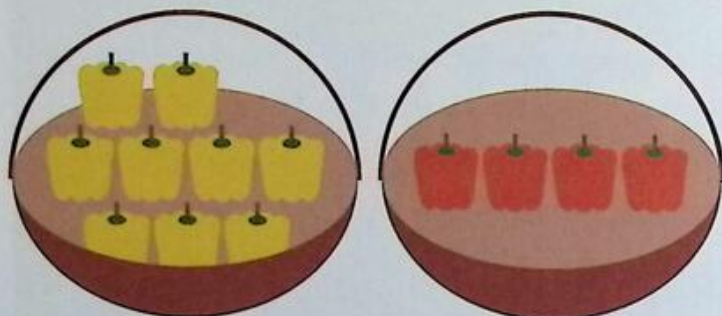


Lesson 1

Add by Making 10 — Part 1

1

Think

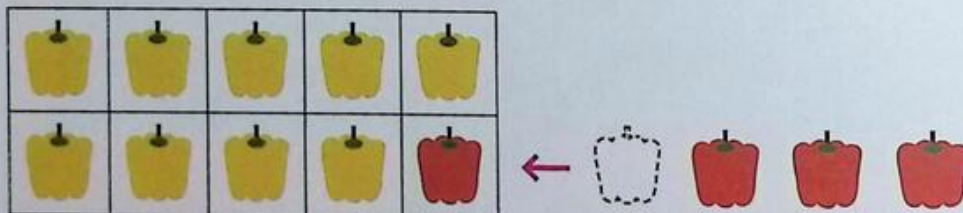


Make a 10!



There are 9 yellow peppers and 4 orange peppers.
How many peppers are there altogether?

Learn



$$\begin{array}{c} 9 + 4 \\ \swarrow \quad \searrow \\ 1 \quad 3 \end{array}$$

9 and 1 make 10.
10 and 3 make ?

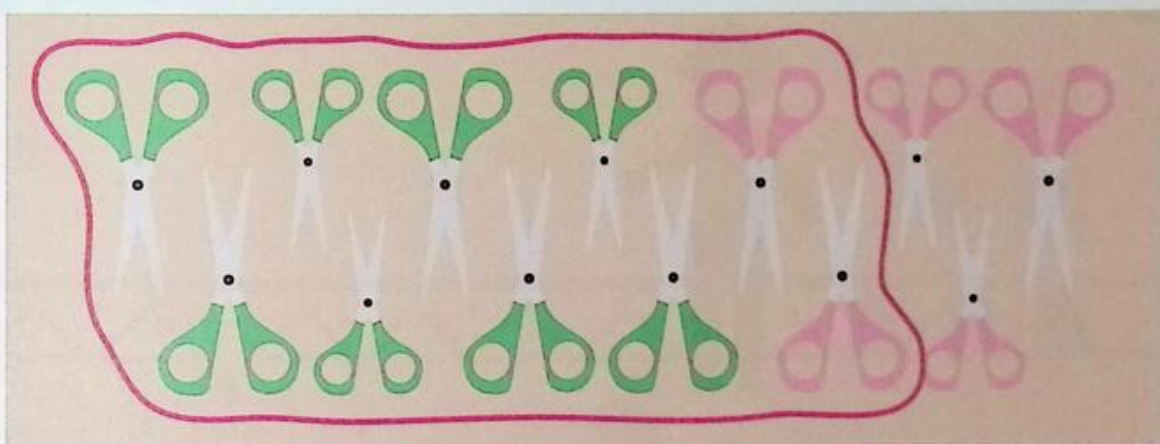


$$9 + 4 = \boxed{}$$

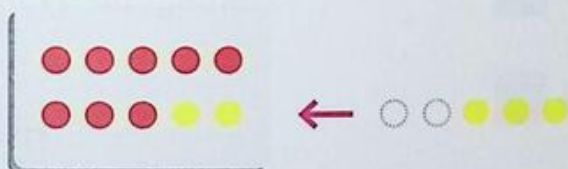
There are $\boxed{}$ peppers altogether.

Do

1



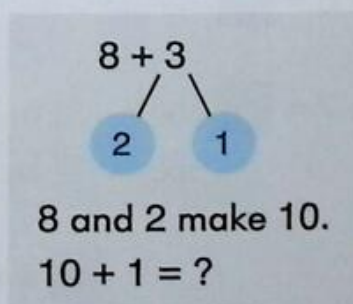
There are 8 green scissors and 5 pink scissors.
How many scissors are there in all?



$$8 + 5 = \square$$

There are $\square$ scissors altogether.

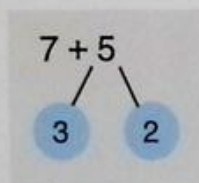
2 Add 3 to 8.



$$8 + 3 = \square$$



3 Add 5 to 7.



+ =



4 (a) $9 + 1 = \square$ $9 + 8 = 10 + \square$

(b) $8 + 2 = \square$ $8 + 6 = 10 + \square$

(c) $7 + 3 = \square$ $7 + 4 = 10 + \square$

(d) $6 + 4 = \square$ $6 + 6 = 10 + \square$

(e) $5 + 5 = \square$ $5 + 6 = 10 + \square$

5 (a) $8 + 4 = \square$

(b) $9 + 7 = \square$

(c) $6 + 5 = \square$

(d) $7 + 6 = \square$

(e) $8 + 8 = \square$

(f) $7 + 7 = \square$

Lesson 2

Add by Making 10 — Part 2

2

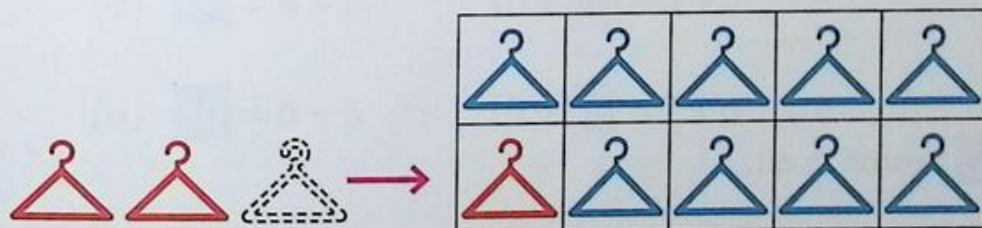
Think



Sofia has 3 orange coat hangers and 9 blue coat hangers. How many coat hangers does she have altogether?



Learn



$$\begin{array}{c} 3 + 9 \\ \swarrow \quad \searrow \\ 2 \quad 1 \end{array}$$

1 and 9 make 10.
2 and 10 make ?

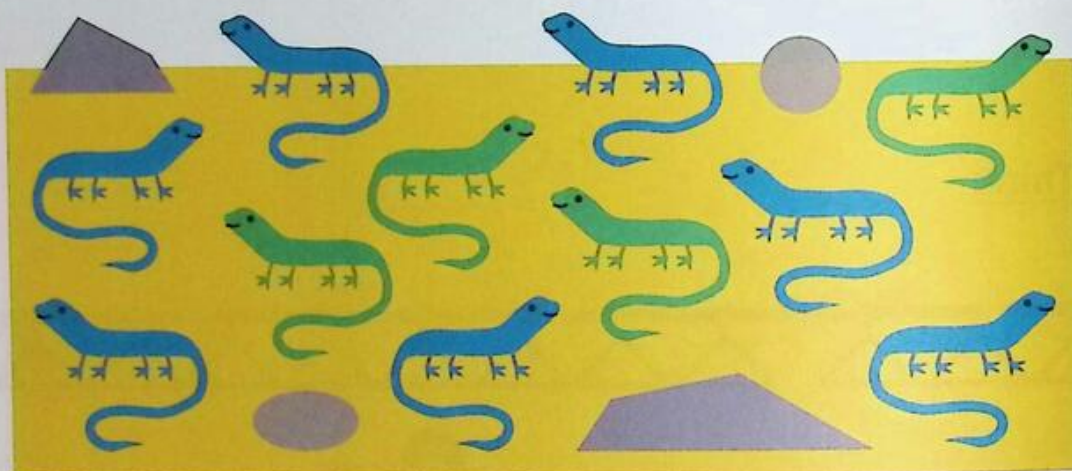
$$3 + 9 = \square$$

She has $\square$ coat hangers altogether.

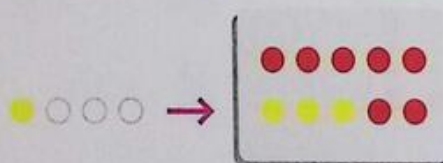


Do

1



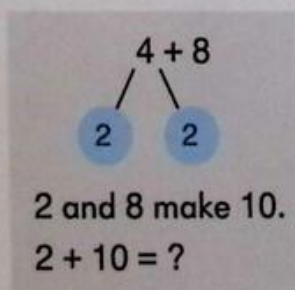
There are 4 green lizards and 7 blue lizards.
How many lizards are there in all?



$$4 + 7 = \square$$

There are $\square$ lizards in all.

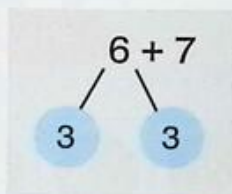
2 Add 8 to 4.



$$4 + 8 = \square$$



③ Add 7 to 6.



$$6 + 7 = \square$$



④ (a) $\square = 1 + 9$

$$10 + \square = 5 + 9$$

(b) $\square = 2 + 8$

$$10 + \square = 3 + 8$$

(c) $\square = 3 + 7$

$$10 + \square = 5 + 7$$

(d) $\square = 4 + 6$

$$10 + \square = 6 + 6$$

(e) $\square = 5 + 5$

$$10 + \square = 7 + 5$$

⑤ (a) $2 + 9 = \square$

(b) $6 + 8 = \square$

(c) $5 + 9 = \square$

(d) $6 + 7 = \square$

(e) $5 + 8 = \square$

(f) $4 + 7 = \square$

Lesson 3

Add by Making 10 — Part 3

3

Think

One box has 7 chocolates.

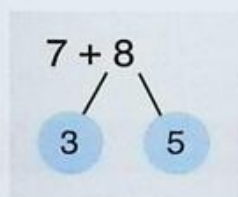
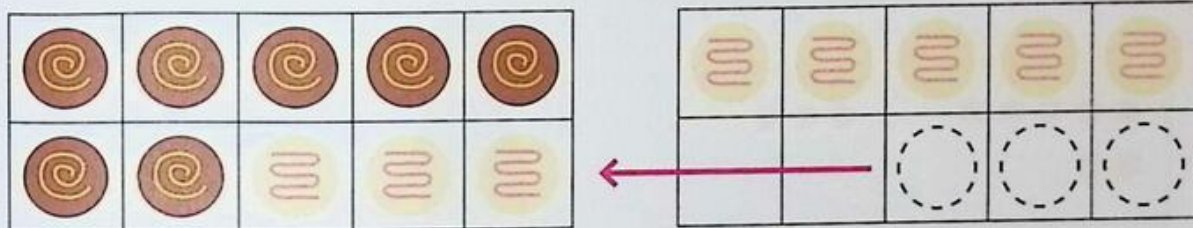
The other box has 8 chocolates.

How many chocolates are there altogether?



Learn

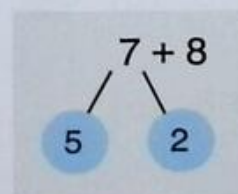
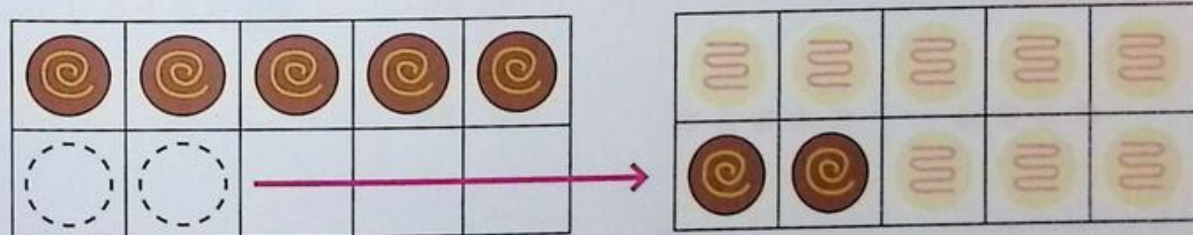
Method 1



7 and make 10.



Method 2



8 and make 10.

$7 + 8 =$

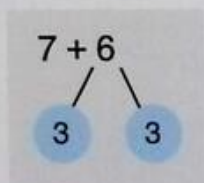
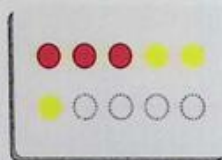
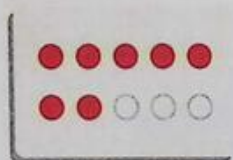
There are chocolates altogether.



Do

1 Add 7 and 6.

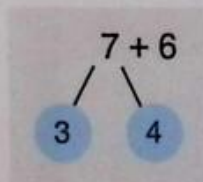
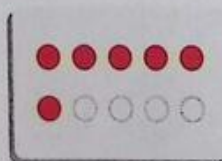
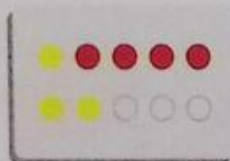
Method 1



$$7 + 6 = \square$$



Method 2

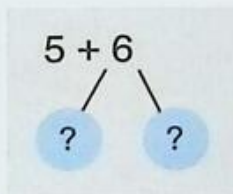


$$7 + 6 = \square$$



② Add 5 and 6.

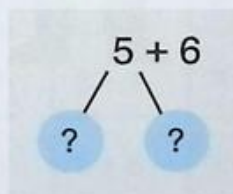
Method 1



$$5 + 6 = \square$$



Method 2



$$5 + 6 = \square$$



③ (a) $6 + 8 = \square$

(b) $7 + 9 = \square$

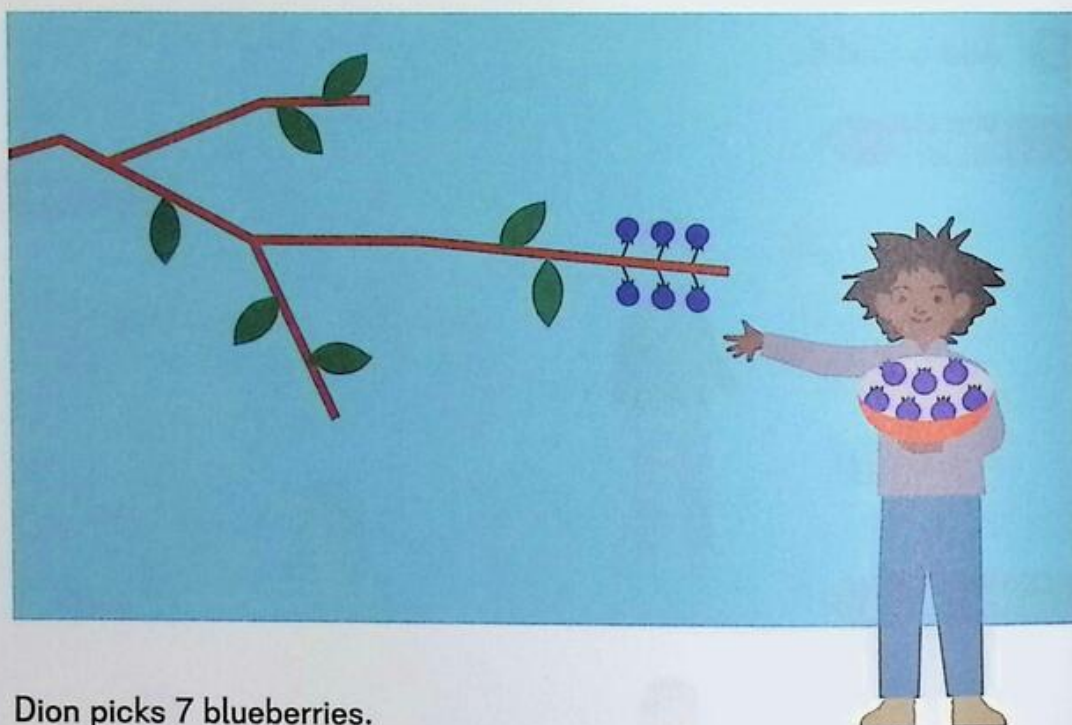
(c) $6 + 6 = \square$

(d) $8 + 8 = \square$

(e) $9 + 9 = \square$

(f) $7 + 7 = \square$

4



Dion picks 7 blueberries.
Then he picks 6 more blueberries.
How many blueberries does he have now?

$$\square + \square = \square$$

He has $\square$ blueberries now.

5 (a) 7 more than 5 is $\square$.

(b) 6 more than 8 is $\square$.

(c) 9 more than 5 is $\square$.

$$5 + 7 = ?$$



Lesson 4

Addition Facts to 20

4

Think

Say the answers and look for patterns.

$9 + 2$

$9 + 3$

$8 + 3$

$9 + 4$

$8 + 4$

$7 + 4$

$9 + 5$

$8 + 5$

$7 + 5$

$6 + 5$

$9 + 6$

$8 + 6$

$7 + 6$

$6 + 6$

$5 + 6$

$9 + 7$

$8 + 7$

$7 + 7$

$6 + 7$

$5 + 7$

$4 + 7$

$9 + 8$

$8 + 8$

$7 + 8$

$6 + 8$

$5 + 8$

$4 + 8$

$3 + 8$

$9 + 9$

$8 + 9$

$7 + 9$

$6 + 9$

$5 + 9$

$4 + 9$

$3 + 9$

$2 + 9$

Make flash cards for the facts you need to practice.

$7 + 6$

13

Learn

Put each addition fact under the correct answer.

A girl in a yellow shirt and skirt stands next to a board. The board has numbers 11, 12, 13, 14, 15, 16, 17, 18 and addition facts 8+8, 9+2, 8+6, 7+8. A red arrow points from 8+8 to 16.

11	12	13	14
8+8	9+2		8+6
15	16	17	18
7+8			

Do

1 (a) $8 + 5 =$

(b) $6 + 5 =$

(c) $4 + 8 =$

(d) $7 + 7 =$

(e) $9 + 6 =$

(f) $5 + 7 =$

(g) $6 + 7 =$

(h) $9 + 9 =$

(i) $8 + 6 =$

(j) $7 + 4 =$

(k) $6 + 5 =$

(l) $8 + 8 =$

(m) $9 + 4 =$

(n) $5 + 9 =$

2 Find addition facts.

6 + 6 = 12

7 + 5 = 12

6 + 6

7 + 5

9 + 9

5 + 6

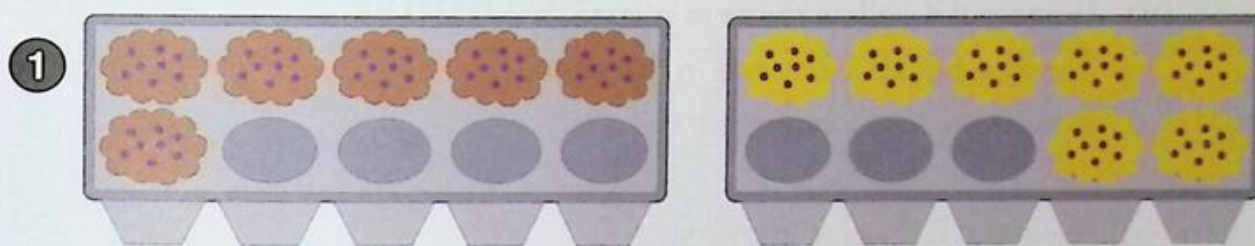
9 + 2

6 + 8

7 + 6

9 + 6

7 + 8



$$6 + 7 = \square$$

2 (a) $9 + 6 = \square$

$\swarrow \quad \searrow$
 ? 5

(b) $8 + 5 = \square$

$\swarrow \quad \searrow$
 ? 3

(c) $7 + 6 = \square$

$\swarrow \quad \searrow$
 3 ?

(d) $3 + 8 = \square$

$\swarrow \quad \searrow$
 1 ?

(e) $5 + 7 = \square$

$\swarrow \quad \searrow$
 2 ?

(f) $4 + 9 = \square$

$\swarrow \quad \searrow$
 ? 1

3 (a) $8 + 6 = 10 + \square$

(b) $7 + 7 = 10 + \square$

(c) $2 + 9 = \square + 10$

(d) $4 + 7 = \square + 10$

4 (a) $9 + 7 = \square$

(b) $9 + 9 = \square$

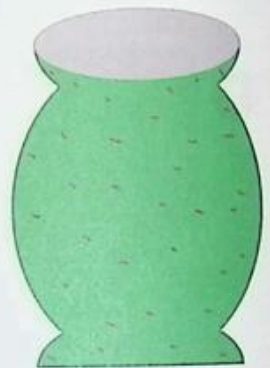
(c) $5 + 7 = \square$

(d) $3 + 9 = \square$

5 Write an equation for each and find the answer.

- (a) Diego put 4 yellow roses in a vase.
Then he puts 9 red roses in the vase.
How many roses are in the vase?

- (b) Kona put 8 flowers in a vase.
She has 5 flowers left over.
How many flowers did she have at the start?



6 Put in order from least to greatest.

(a) $8 + 5$ $6 + 6$ $10 + 6$ $5 + 4$ $14 + 3$

(b) $15 - 5$ $11 + 4$ $6 + 3$ $17 - 10$ $8 + 4$

7 Which equations are true?
Which are false?

(a) $9 + 4 = 13$

(b) $6 + 8 = 14$

(c) $17 = 7 + 7$

(d) $13 + 3 = 8 + 8$

(e) $8 + 7 = 7 + 9$

(f) $7 + 6 = 9 + 4$

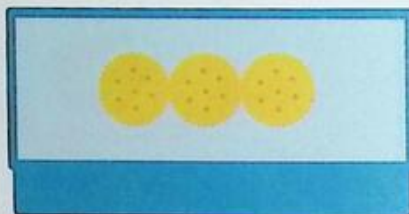
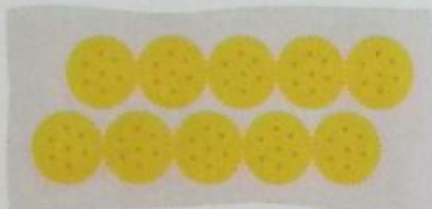
(g) $7 + 8 = 19 - 4$

(h) $18 - 1 = 9 + 9$

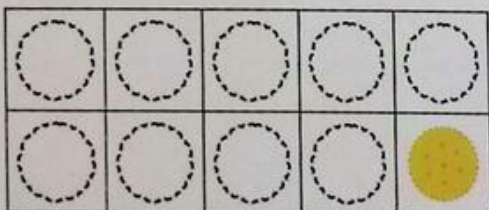
Chapter 7

Subtraction Within 20



Think

There are 13 crackers.
 Alex eats 9 crackers.
 How many crackers are left?

Learn

$$\begin{array}{c}
 13 - 9 \\
 \swarrow \quad \searrow \\
 10 \quad 3 \\
 10 - 9 = 1 \\
 1 \text{ and } 3 \text{ make } ?
 \end{array}$$

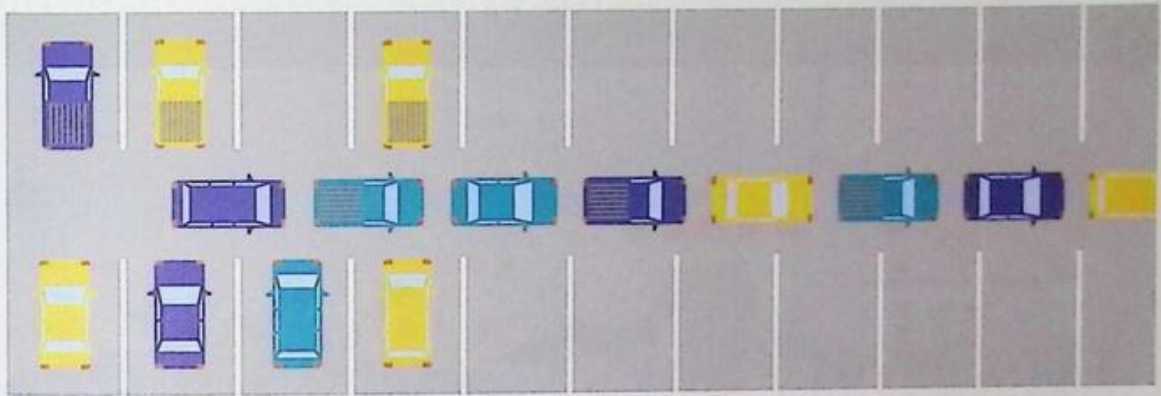


$$13 - 9 = \square$$

There are $\square$ crackers left.

Do

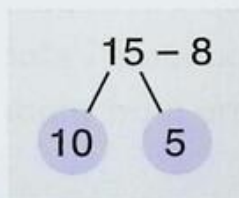
1



There are 15 cars in the parking lot.

8 cars drive away.

How many cars are left?

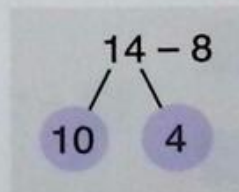
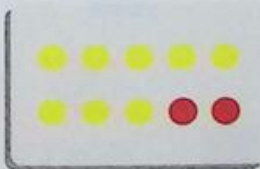


$$15 - 8 = \square$$

There are $\square$ cars left.



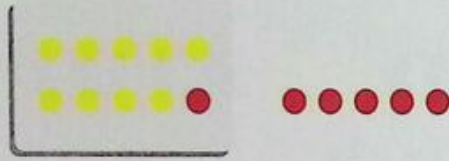
2 Subtract 8 from 14.



$$14 - 8 = \square$$



3 Subtract 9 from 15.



$$\square \bigcirc \square = \square$$



Should + or - go in the $\bigcirc$?

4 (a) $10 - 9 = \square$ $14 - 9 = \square + 4$ $14 - 9 = \square$

(b) $10 - 8 = \square$ $11 - 8 = \square + 1$ $11 - 8 = \square$

(c) $10 - 9 = \square$ $16 - 9 = \square + 6$ $16 - 9 = \square$

(d) $10 - 8 = \square$ $17 - 8 = \square + 7$ $17 - 8 = \square$

5 (a) $11 - 9 = \square$ (b) $12 - 8 = \square$

(c) $13 - 8 = \square$ (d) $15 - 9 = \square$

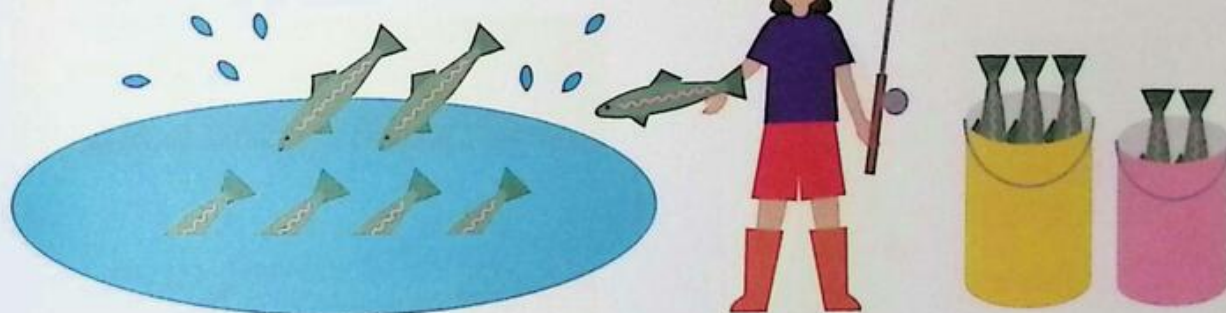
(e) $17 - 9 = \square$ (f) $16 - 8 = \square$

Lesson 2

Subtract from 10 — Po

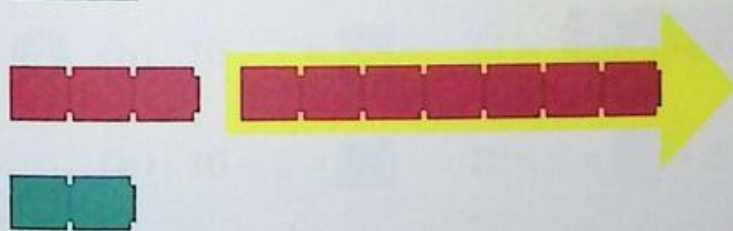
2

Think



Mei caught 12 trout.
She puts 7 trout back.
How many trout are left?

Learn



$$\begin{array}{r} 12 - 7 \\ \swarrow \quad \searrow \\ 10 \quad 2 \end{array}$$

$10 - 7 = 3$
3 and 2 make ?

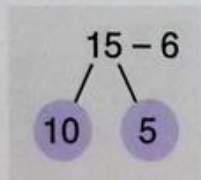
$$12 - 7 = \square$$

$\square$ trout are left.



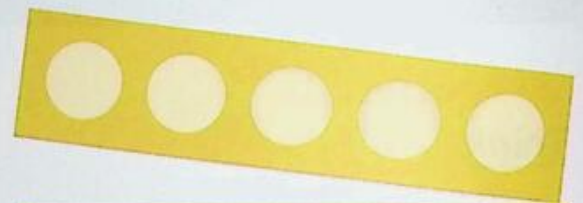
Do

- 1 Sofia has 15 stickers.
She uses 6 stickers.
How many stickers are left?

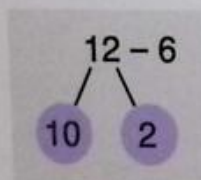
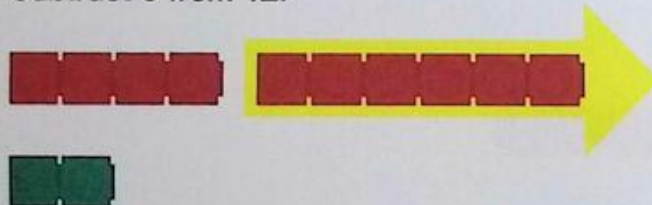


$$15 - 6 = \square$$

There are $\square$ stickers left.



- 2 Subtract 6 from 12.

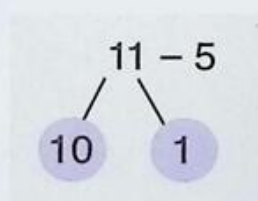


$$12 - 6 = \square$$

3 Subtract 5 from 11.



$$\square \bigcirc \square = \square$$



4 (a) $10 - 7 = \square$ $14 - 7 = \square + 4$ $14 - 7 = \square$

(b) $10 - 5 = \square$ $12 - 5 = \square + 2$ $12 - 5 = \square$

(c) $10 - 6 = \square$ $13 - 6 = \square + 3$ $13 - 6 = \square$

(d) $10 - 4 = \square$ $11 - 4 = \square + 1$ $11 - 4 = \square$

5 (a) $11 - 6 = \square$

(b) $14 - 5 = \square$

(c) $16 - 7 = \square$

(d) $12 - 3 = \square$

(e) $13 - 5 = \square$

(f) $11 - 7 = \square$

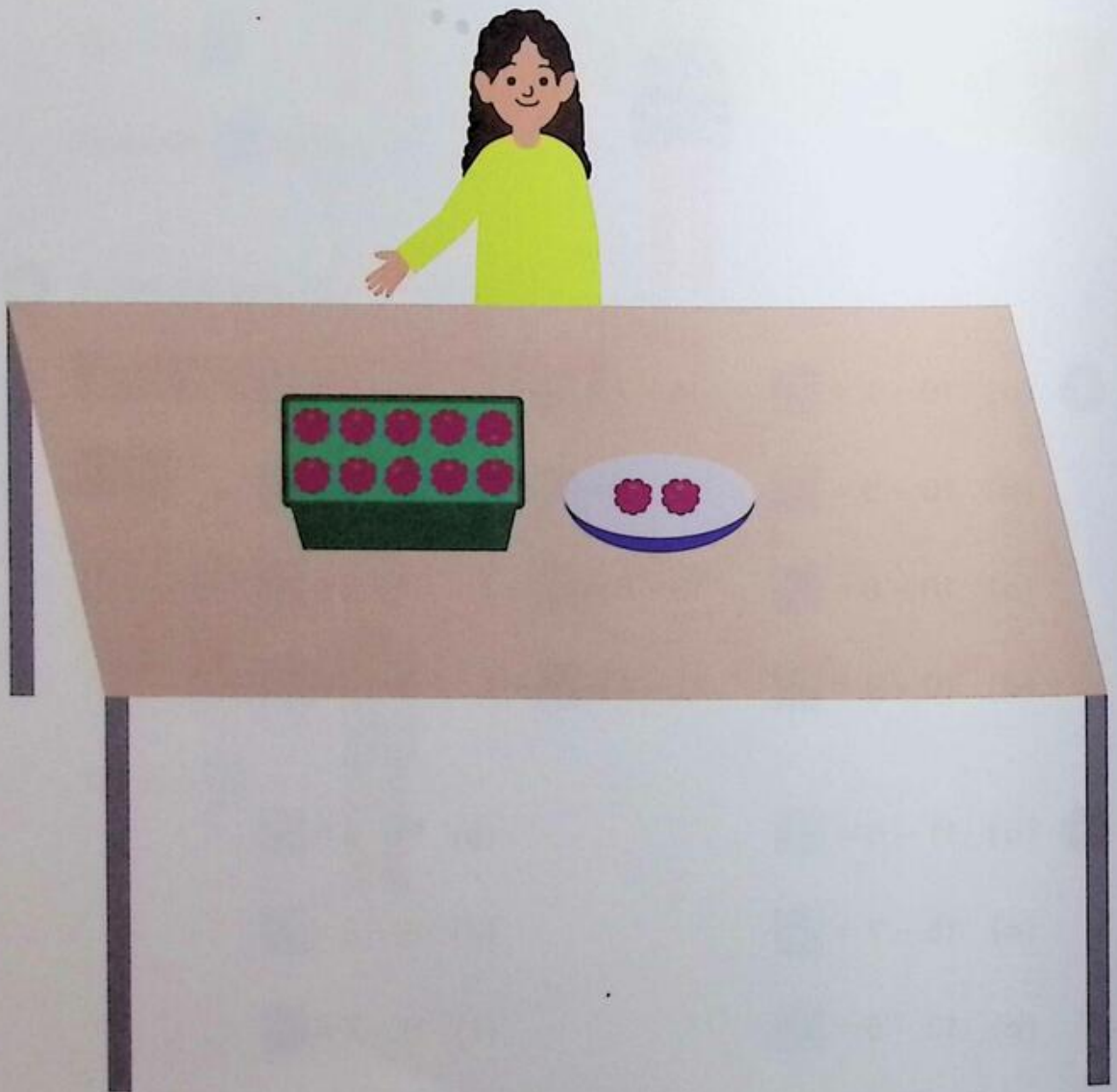
Think

Sofia has 12 raspberries.

She eats 5 of them.

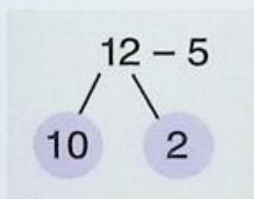
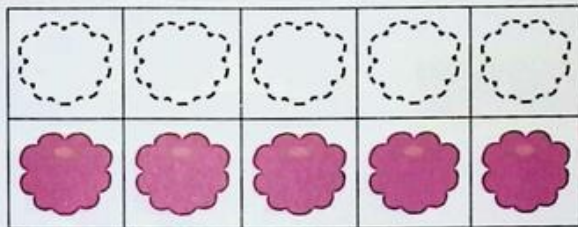
How many raspberries are left?

Which ones will I eat first?



Learn

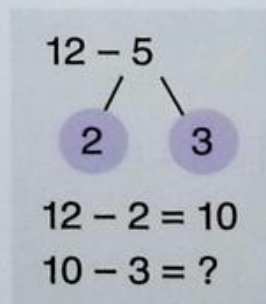
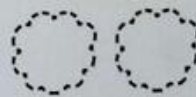
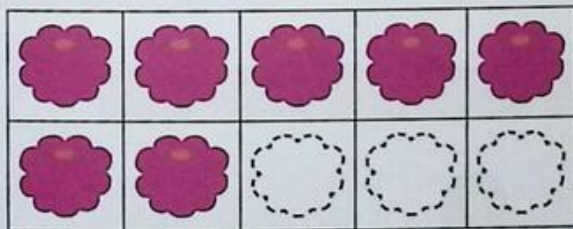
Method 1



$$12 - 5 = \square$$



Method 2



$$12 - 5 = \square$$

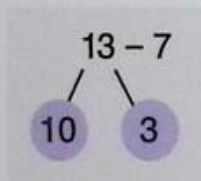
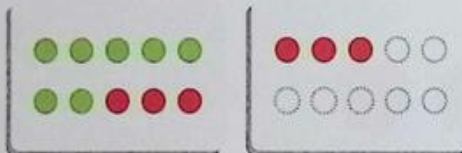


There are $\square$ raspberries left.

Do

- 1 Subtract 7 from 13.

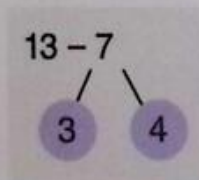
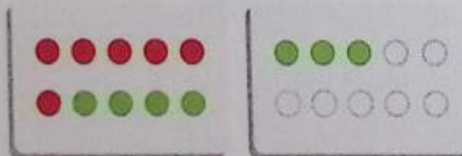
Method 1



$$13 - 7 = \square$$



Method 2

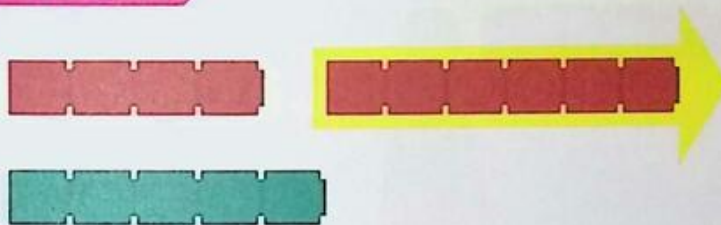


$$13 - 7 = \square$$



2 Subtract 6 from 15.

Method 1

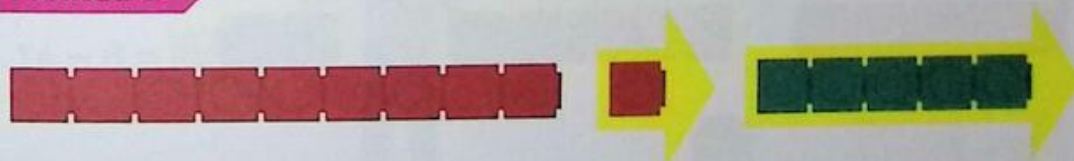


$$\begin{array}{r} 15 - 6 \\ \swarrow \quad \searrow \\ 10 \quad 5 \end{array}$$

$$15 - 6 = \square$$



Method 2



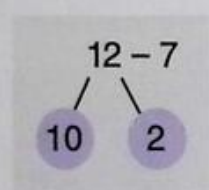
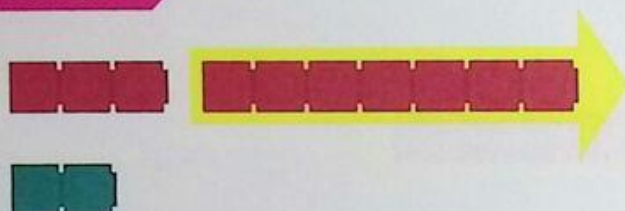
$$\begin{array}{r} 15 - 6 \\ \swarrow \quad \searrow \\ 5 \quad 1 \end{array}$$

$$15 - 6 = \square$$



3 Subtract 7 from 12.

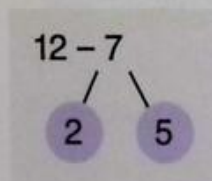
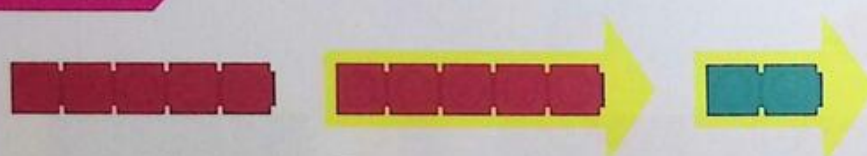
Method 1



$$12 - 7 = \square$$



Method 2

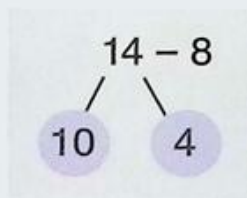


$$12 - 7 = \square$$



4 Subtract 8 from 14.

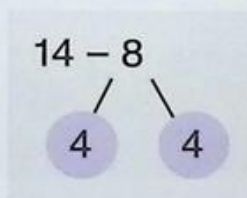
Method 1



$$14 - 8 = \square$$



Method 2



$$14 - 8 = \square$$



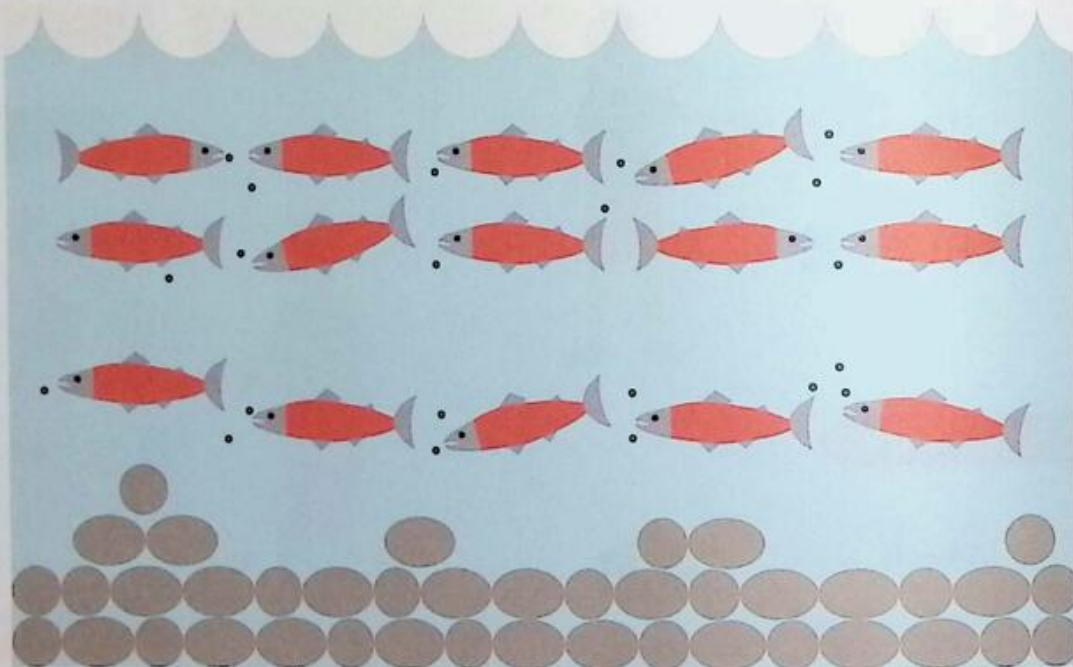
5 (a) $11 - 1 = \square$ $11 - 2 = \square$ $11 - 3 = \square$ $11 - 4 = \square$

(b) $16 - 6 = \square$ $16 - 7 = \square$ $16 - 8 = \square$ $16 - 9 = \square$

6 (a) $15 - 9 = \square$ (b) $13 - 8 = \square$ (c) $14 - 6 = \square$

(d) $12 - 6 = \square$ (e) $15 - 6 = \square$ (f) $11 - 7 = \square$

- 7 There are 15 salmon eating.
If 7 salmon swim away,
how many salmon will be left?



$$\square - \square = \square$$

$\square$ salmon will be left.

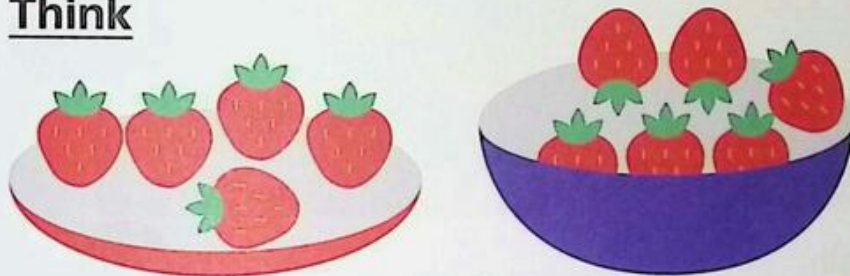
- 8 (a) 7 less than 16 is $\square$.

- (b) 6 less than 13 is $\square$.

$$16 - 7 = ?$$



Think

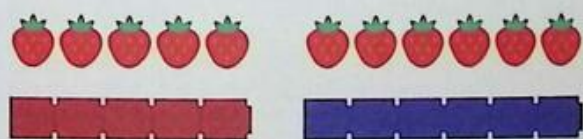


Write an equation for each story.

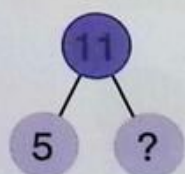
There are 11 strawberries.
5 strawberries are on a plate.
The rest are in a bowl.
How many strawberries
are in the bowl?

5 strawberries are on the plate.
6 strawberries are in the bowl.
How many strawberries
are there in all?

Learn



whole



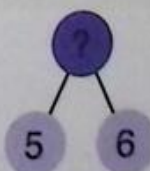
part part

$$11 - 5 = \square$$

$\square$ strawberries are in the bowl.



whole



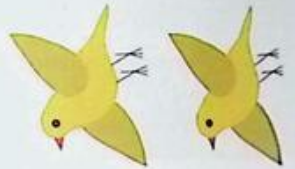
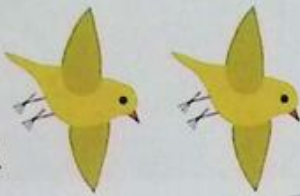
part part

$$5 + 6 = \square$$

There are $\square$ strawberries in all.

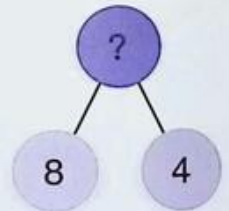
Do

1



8 birds are in a bird bath.

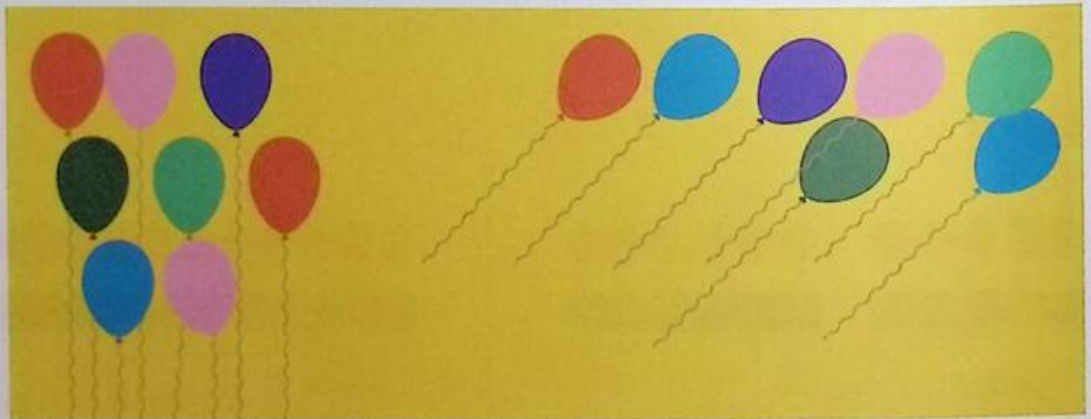
If 4 more birds come to the bird bath,
how many birds will be in the bird bath?



$$8 \bigcirc 4 = \square$$

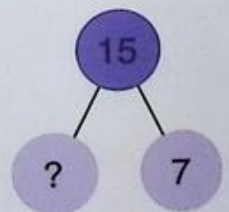
$\square$ birds will be in the bird bath.

2



There are 15 balloons.

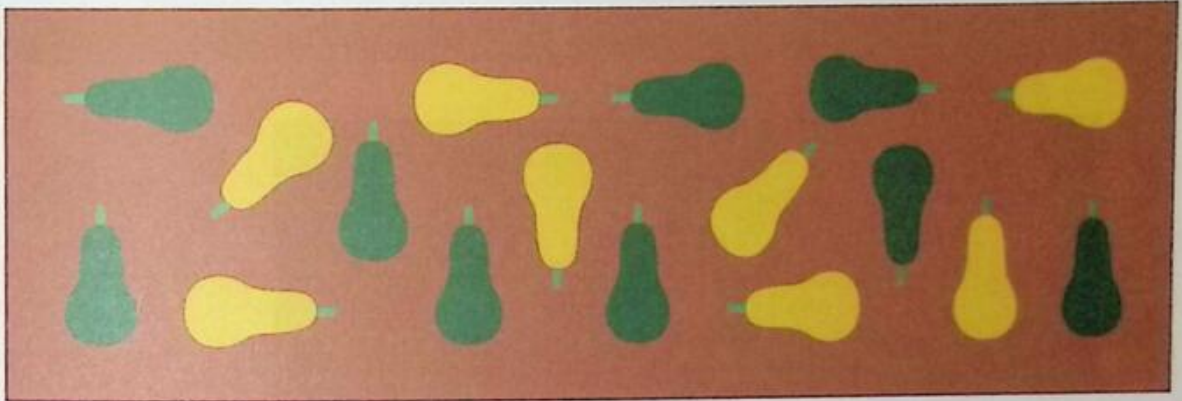
If 7 balloons fly away,
how many balloons will be left?



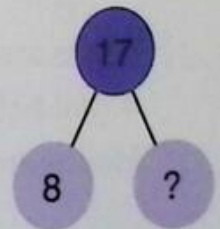
$$15 \bigcirc 7 = \square$$

$\square$ balloons will be left.

3



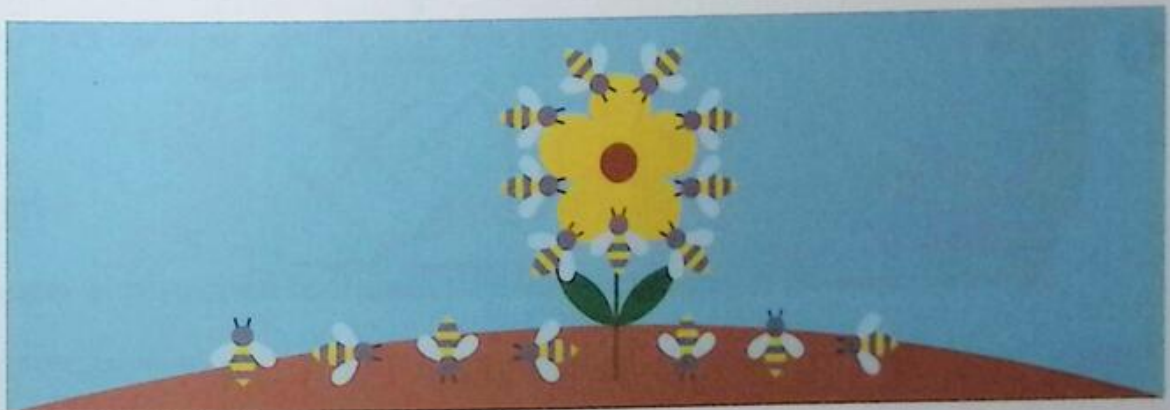
There are 17 squash.
8 squash are yellow.
How many squash are green?



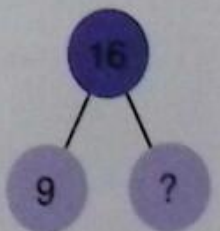
$\bigcirc$ =

are green.

4



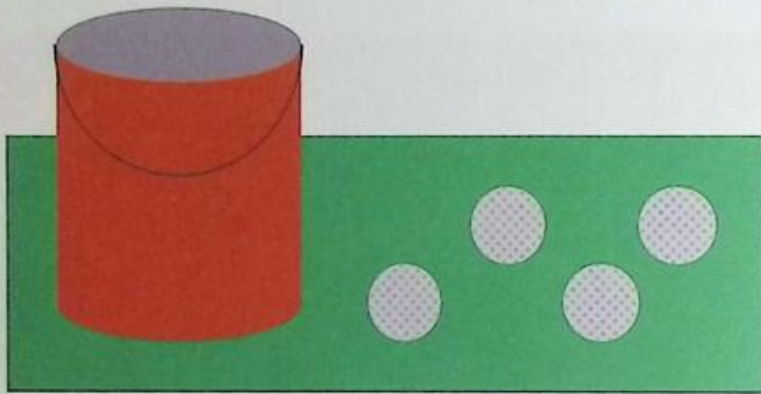
There are 16 bees.
9 bees are on a flower and the rest are on the ground.
How many bees are on the ground?



$\bigcirc$ =

are on the ground.

5

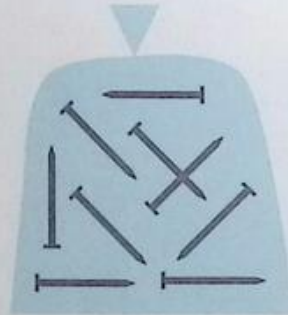
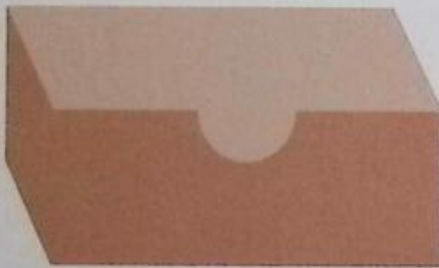


There are 13 golf balls.
 4 golf balls are on the grass.
 How many golf balls are in the bucket?

$$13 \bigcirc 4 = \square$$

$\square$ golf balls are in the bucket.

6



There are 9 nails in the bag
 and 8 nails in the box.
 How many nails are there altogether?

$$\square \bigcirc \square = \square$$

There are $\square$ nails.

Think

Say the answers and look for patterns.

$11 - 2$

$11 - 3$

$12 - 3$

$11 - 4$

$12 - 4$

$13 - 4$

$11 - 5$

$12 - 5$

$13 - 5$

$14 - 5$

$11 - 6$

$12 - 6$

$13 - 6$

$14 - 6$

$15 - 6$

$11 - 7$

$12 - 7$

$13 - 7$

$14 - 7$

$15 - 7$

$16 - 7$

$11 - 8$

$12 - 8$

$13 - 8$

$14 - 8$

$15 - 8$

$16 - 8$

$17 - 8$

$11 - 9$

$12 - 9$

$13 - 9$

$14 - 9$

$15 - 9$

$16 - 9$

$17 - 9$

$18 - 9$

Make flash cards for the facts you need to practice.

$14 - 8$

6

front

back

Learn

Put each subtraction fact under the correct answer.

9

8

7

6

$15 - 8$

$13 - 7$

5

4

3

2

$14 - 9$

$11 - 8$

$11 - 5$

Do

1 (a) $10 - 9 =$ $14 - 9 =$

(b) $10 - 7 =$ $13 - 7 =$

2 (a) $11 - 1 =$ $11 - 6 =$

(b) $13 - 3 =$ $13 - 4 =$

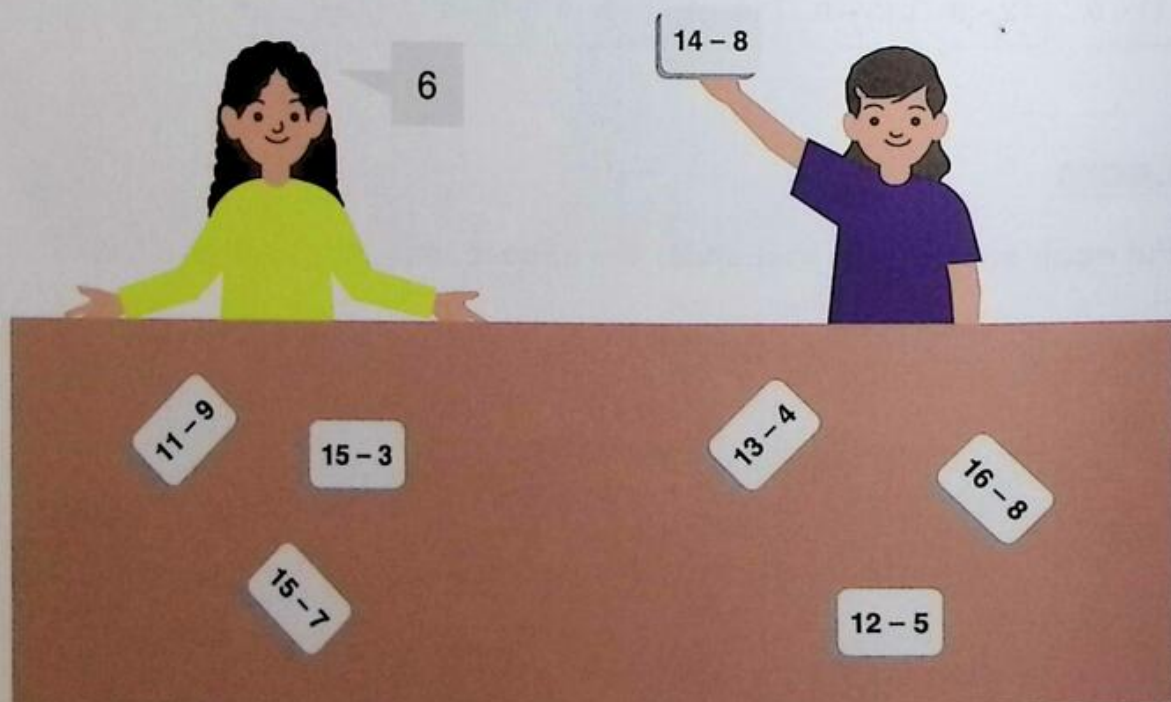
3 (a) $11 - 8 =$

(b) $16 - 7 =$

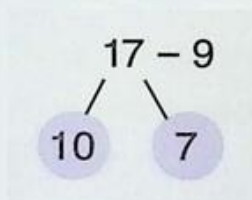
(c) $14 - 6 =$

(d) $18 - 9 =$

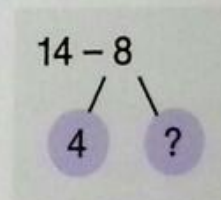
4 Quiz each other with fact cards.



① (a) $17 - 9 = \square + 7$



(b) $14 - 8 = 10 - \square$



② (a) $15 - 8 = \square + 5$

(b) $12 - 5 = \square + 2$

(c) $15 - 8 = 10 - \square$

(d) $12 - 5 = 10 - \square$

③ (a) $16 - 7 = \square$

(b) $14 - 7 = \square$

(c) $17 - 8 = \square$

(d) $13 - 6 = \square$

(e) $18 - 8 = \square$

(f) $12 - 7 = \square$

(g) $15 - 9 = \square$

(h) $11 - 2 = \square$

(i) $14 - 5 = \square$

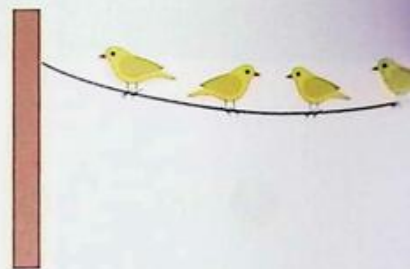
(j) $12 - 8 = \square$

(k) $13 - 5 = \square$

(l) $11 - 9 = \square$

4 Write an equation for each.

- (a) 15 birds were sitting on a telephone wire.
6 birds flew away.
How many birds are left?



- (b) Lily made a picture with 12 fall leaves she found.
7 of them are maple leaves.
How many fall leaves are not maple leaves?



5 Put in order from least to greatest.

(a) $14 - 6$ $12 - 7$ $13 - 9$ $15 - 6$ $16 - 9$

(b) $13 - 8$ $19 - 3$ $12 - 6$ $18 - 6$ $11 - 8$

6 Which equations are true?
Which are false?

(a) $11 - 8 = 8$

(b) $8 = 13 - 5$

(c) $14 - 9 = 1 + 9$

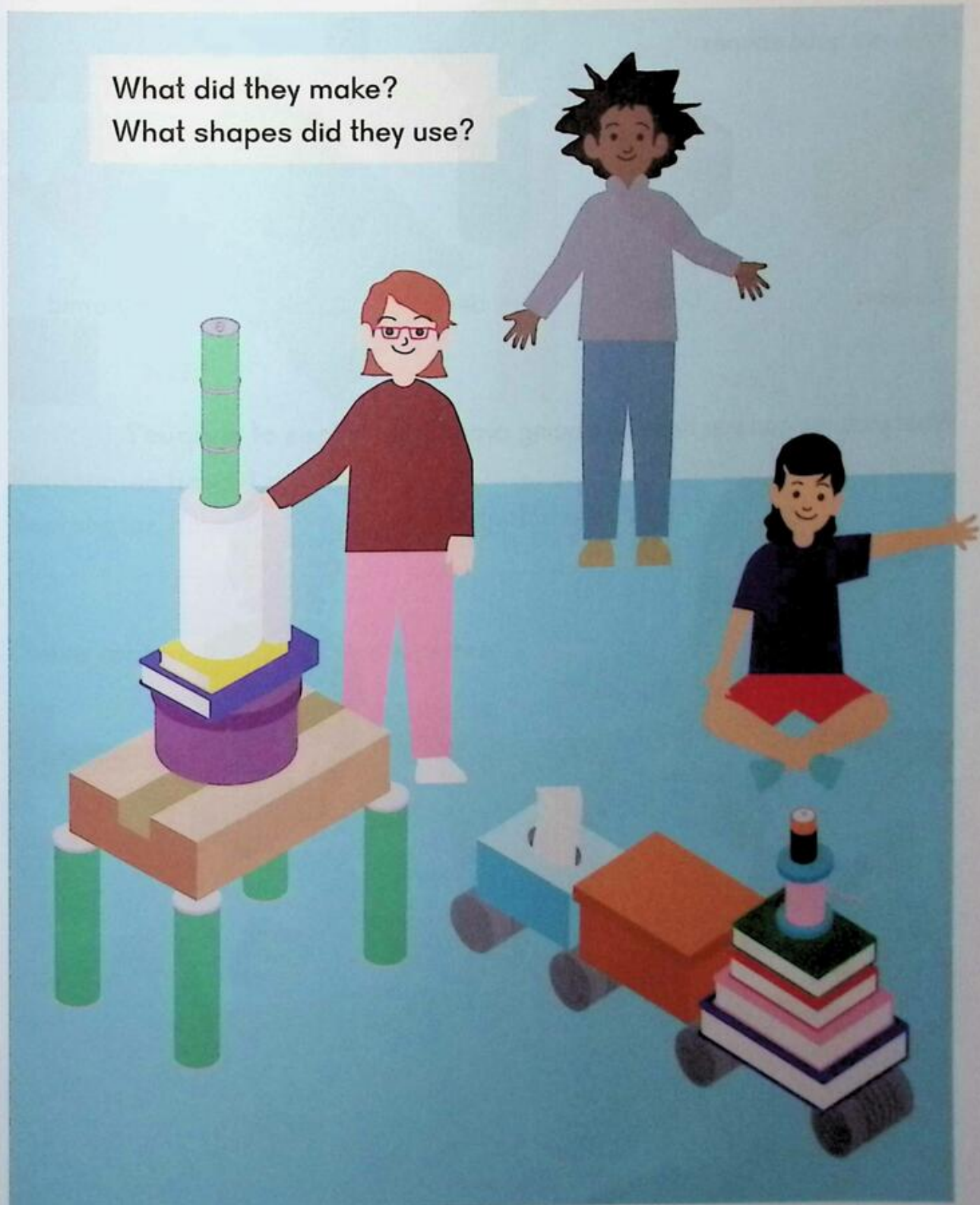
(d) $12 + 5 = 15 - 2$

(e) $13 - 8 = 10 - 8$

(f) $13 - 7 = 3 + 3$

Chapter 8

Shapes



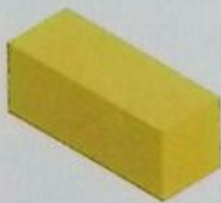
Lesson 1

Solid and Flat Shapes

1

Think

These are solid shapes.



Cuboid



Cube



Cylinder



Cone



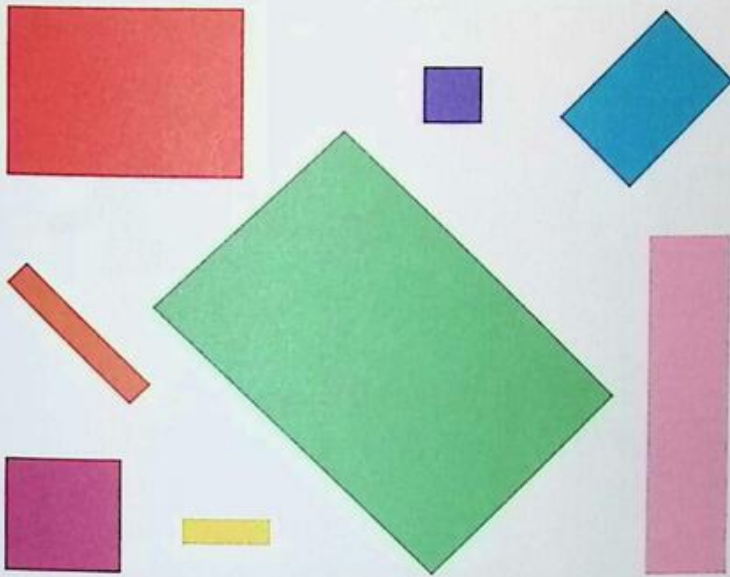
Pyramid

What pictures can you draw by tracing around the edges of shapes?



Learn

These are **rectangles**.

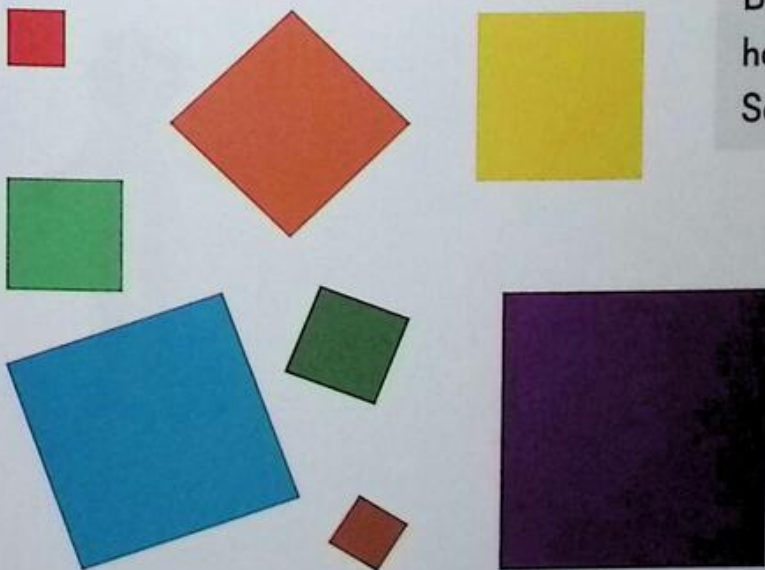


What do the corners of rectangles look like?



Rectangles have 4 corners.
Rectangles have  sides.

These rectangles are called **squares**.

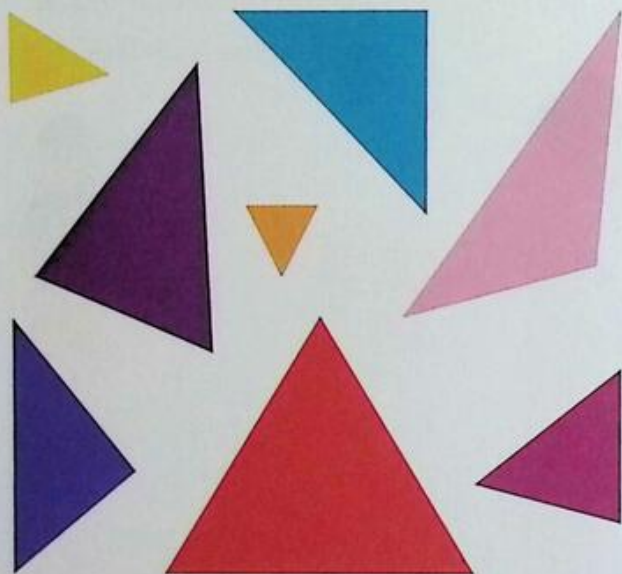


Both squares and rectangles have 4 sides and corners.
Squares are special rectangles.



In a square, all  sides are the same length.

These are triangles.

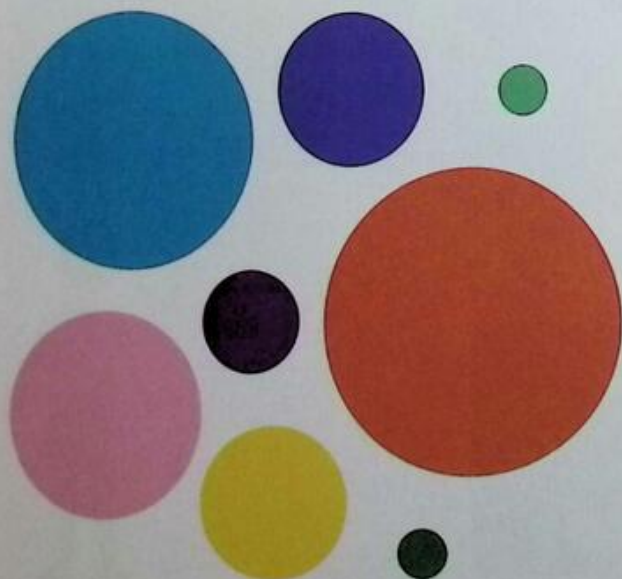


The corners on triangles can look different from each other.



A triangle has straight sides and corners.

These are circles.



How are circles different from the other shapes?



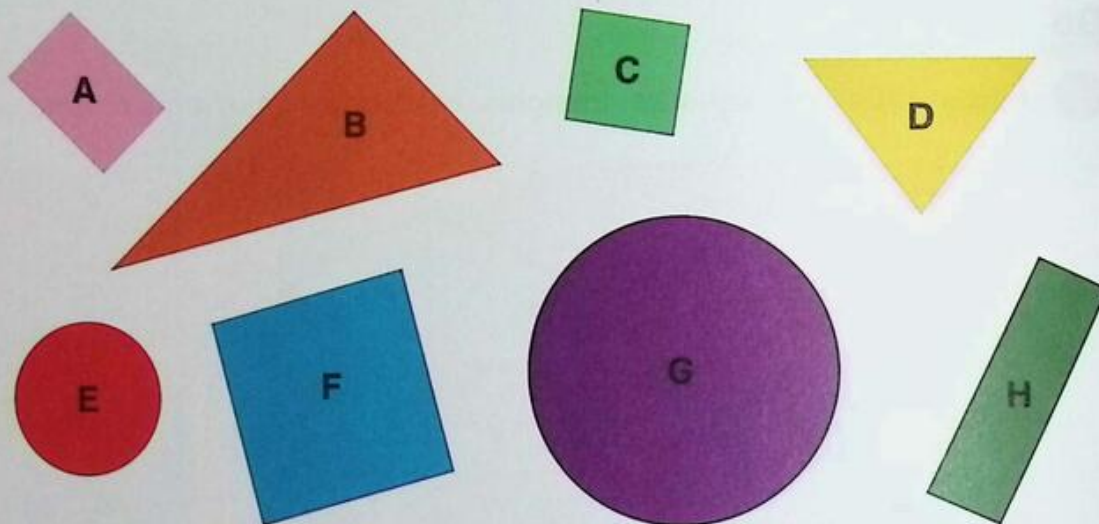
A circle has straight sides and corners.

Do

- 1 Find rectangles, squares, triangles, and circles on objects around you.



2



(a) Which shapes are rectangles?

(b) Which shapes are squares?

(c) Which shapes are circles?

3

How are the shapes below similar to or different from rectangles?

The corners on these shapes do not look like the corners on rectangles.



straight sides

corners



straight sides

corners



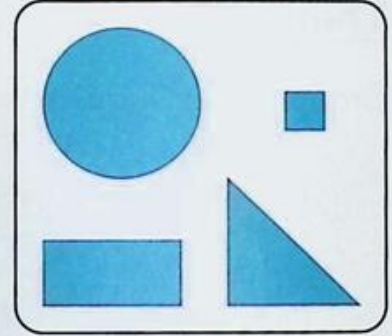
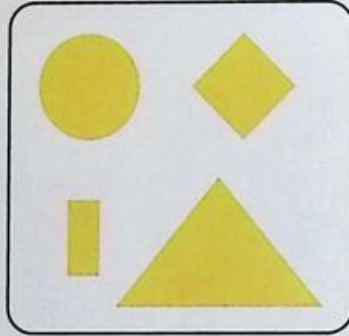
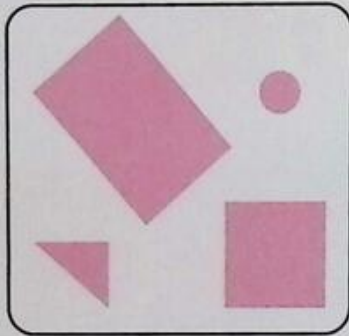
Group these shapes in different ways.



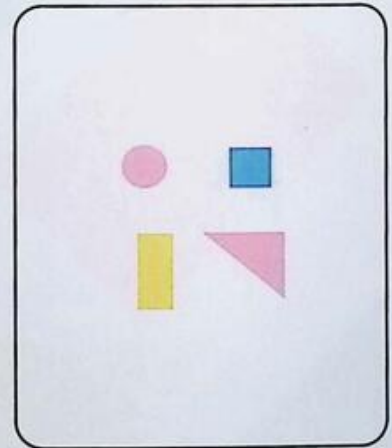
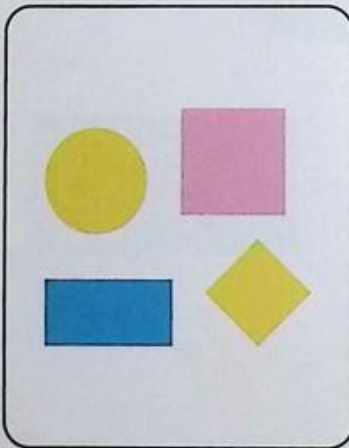
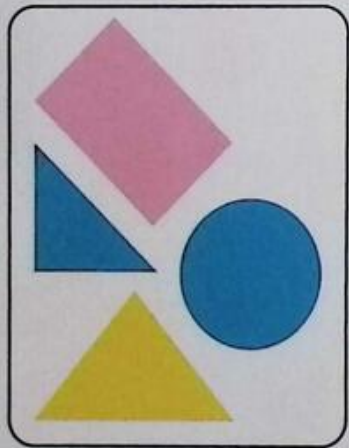
Learn

How are the shapes grouped?

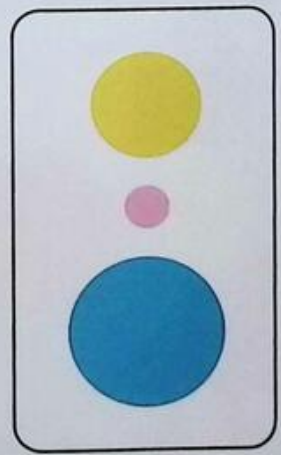
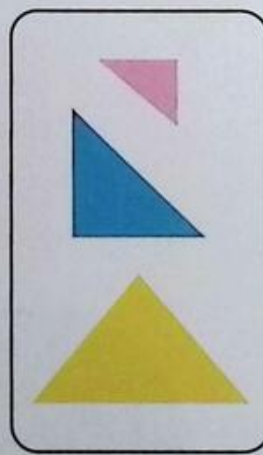
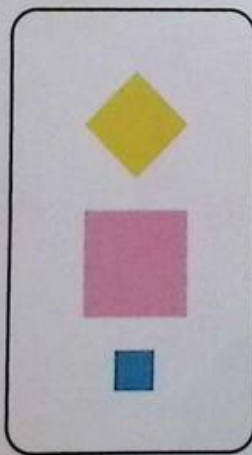
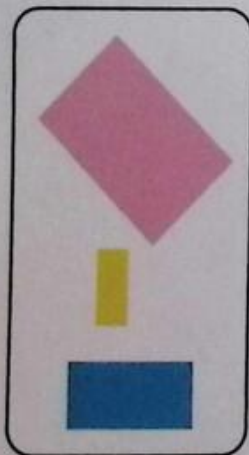
(a)



(b)

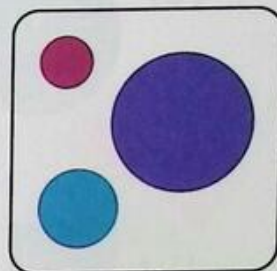
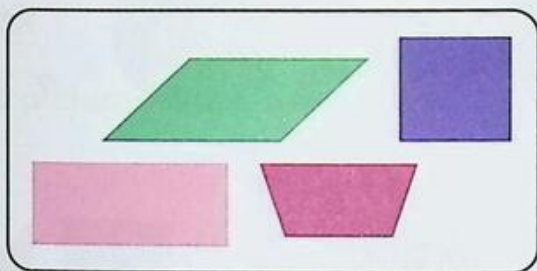


(c)



Do

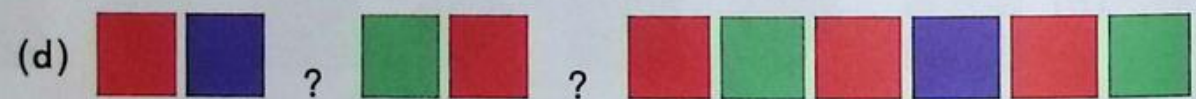
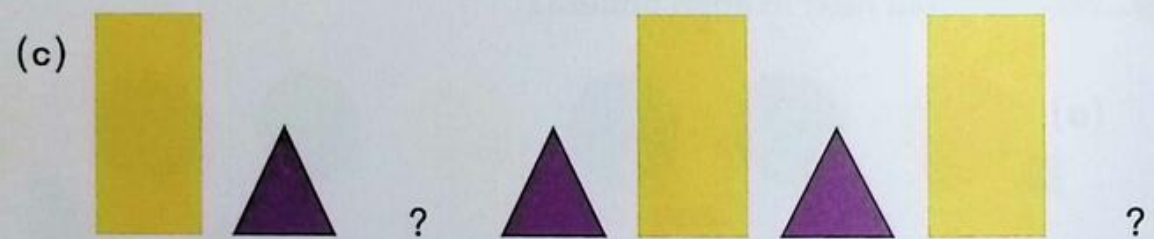
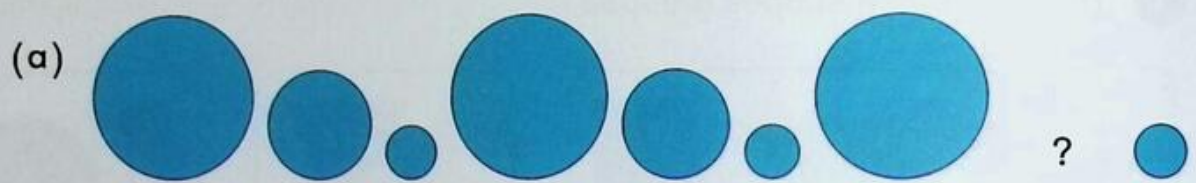
1 How are these shapes grouped?



2 What comes next in each pattern?



3 Complete the pattern.



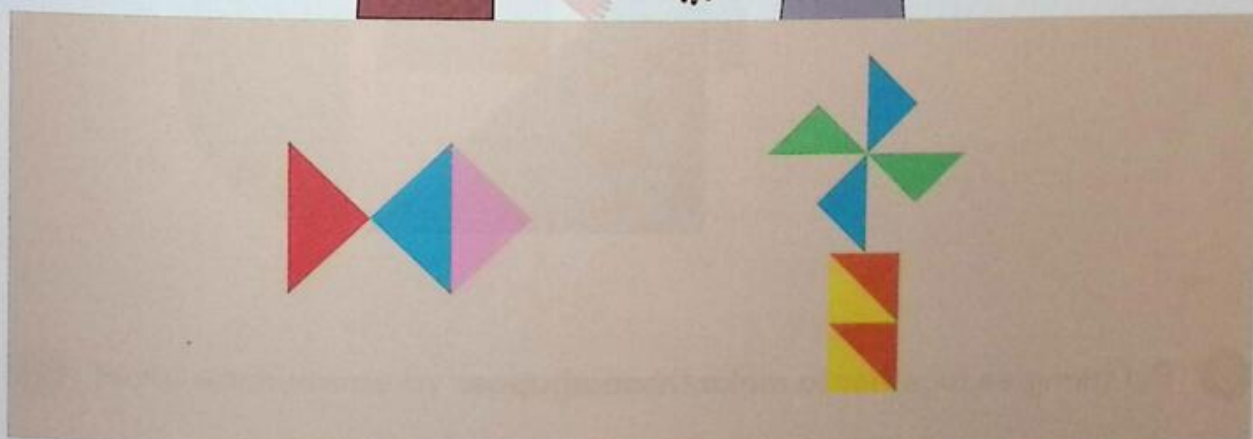
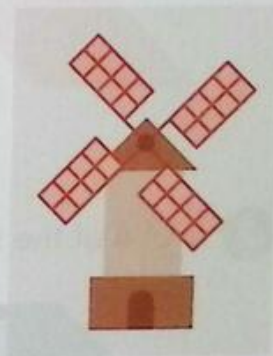
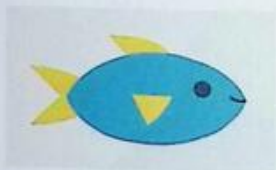
Lesson 3

Making Shapes

3

Think

Make pictures using triangles.



Learn

What new shapes are made from these triangles?



Do

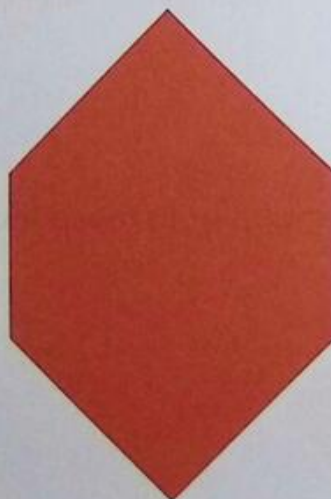
- 1** Put 2 of the triangles together to make these shapes.



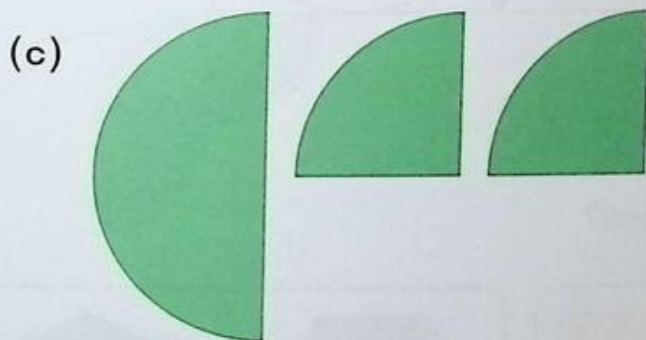
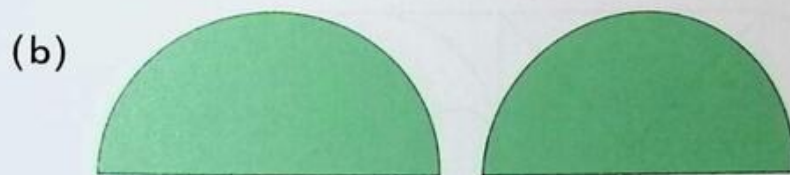
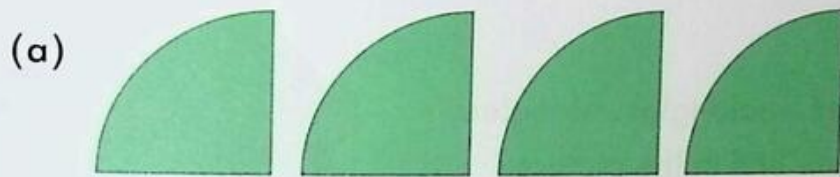
- 2** Put 4 of the triangles together to make these shapes.



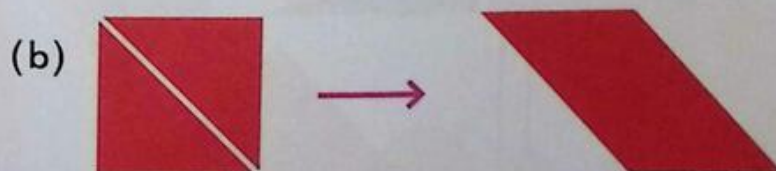
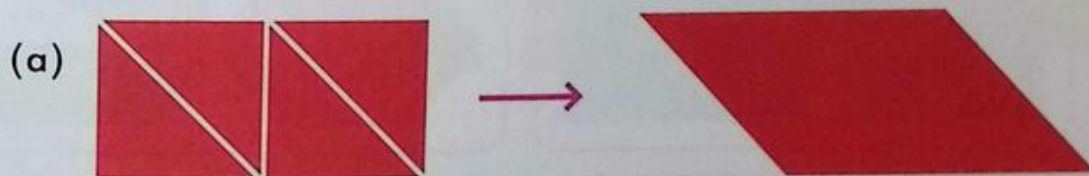
- 3** Put triangles together to make these shapes.



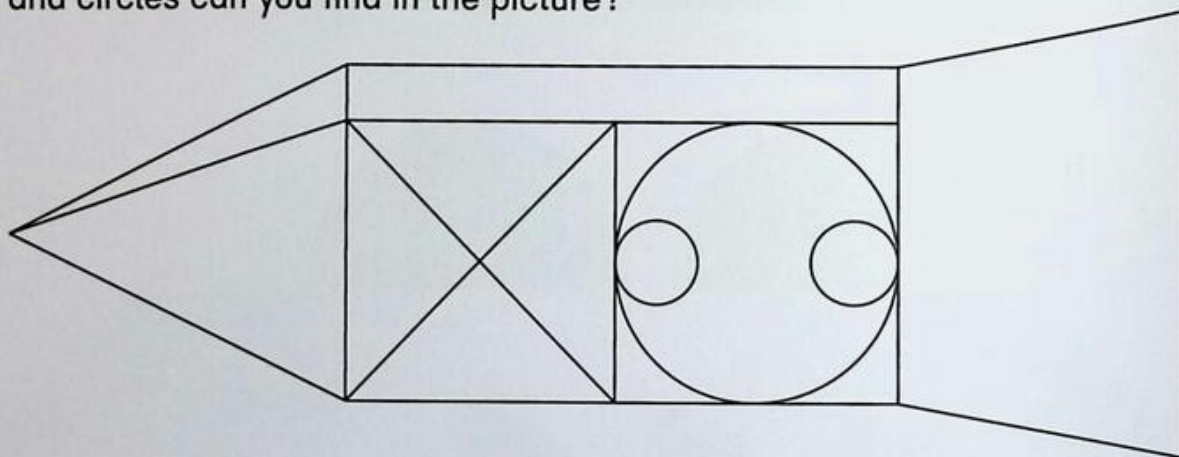
4 Put these shapes together to make circles.



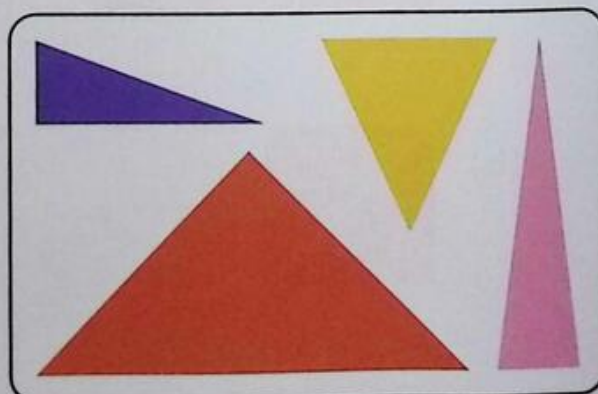
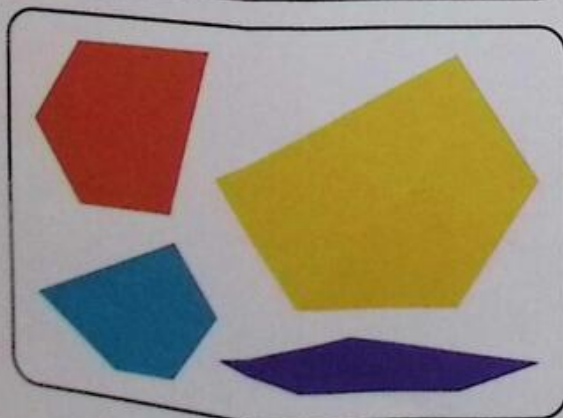
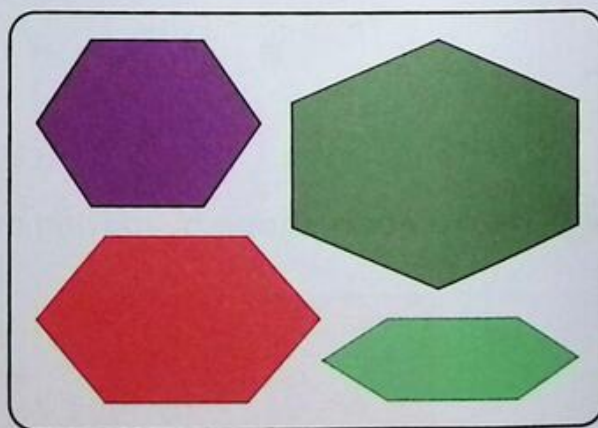
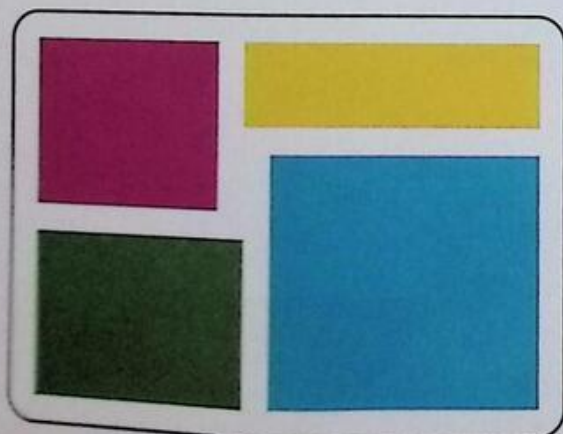
5 Make each shape by moving one triangle.



- 1 How many squares, rectangles, triangles, and circles can you find in the picture?



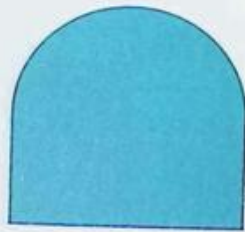
- 2 How are these shapes grouped?



3 Make each shape using these shapes:



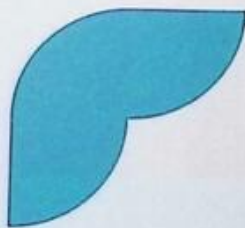
(a)



(b)



(c)



4 What shape is missing in the pattern?
What color is the missing shape?

(a)



(b)

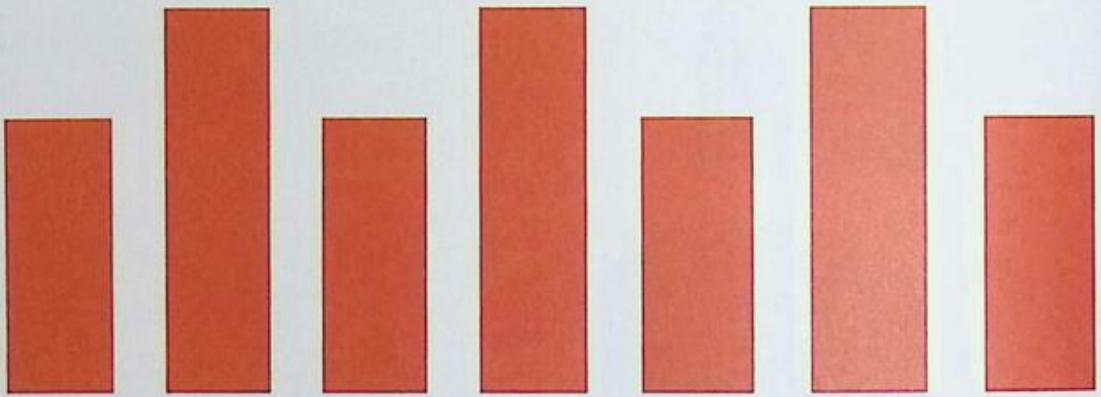


(c)

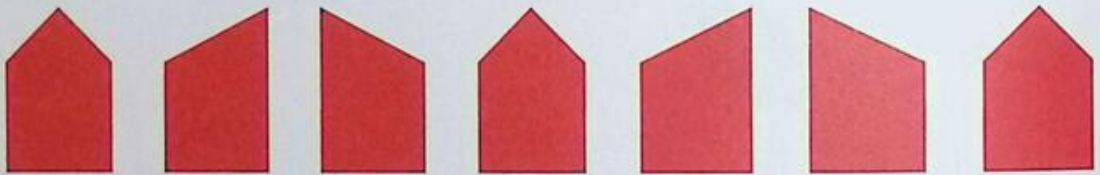


- 5 How many figures are there in the repeating pattern?
What is the next figure?

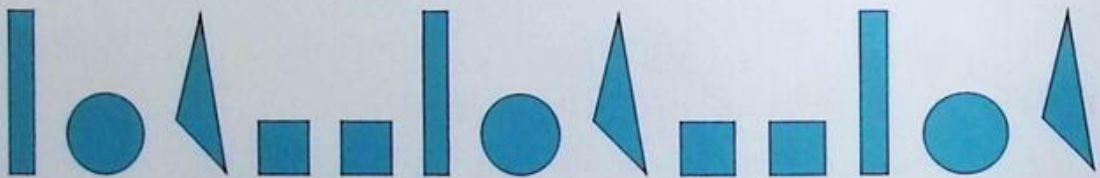
(a)



(b)



(c)

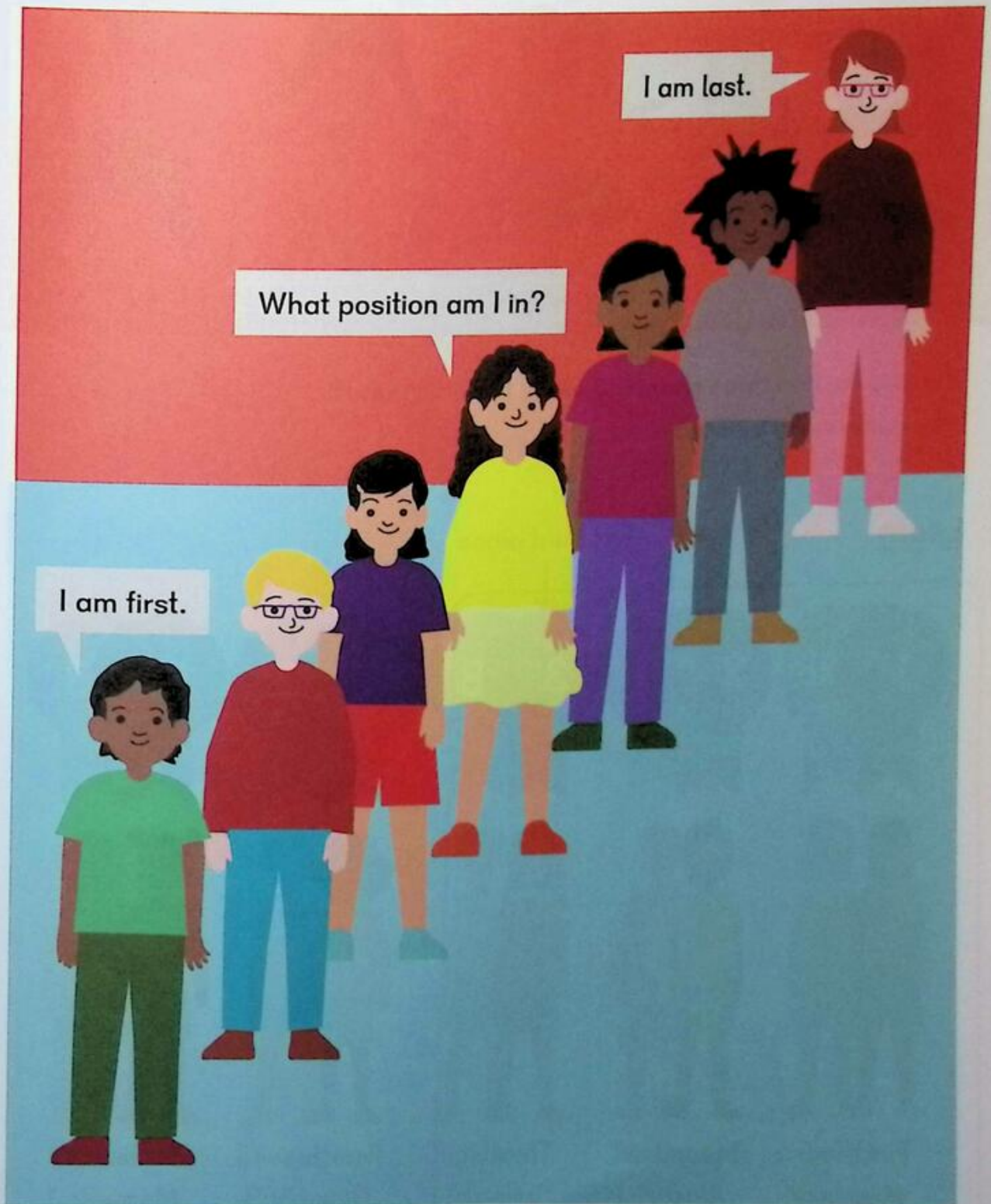


(d)



Chapter 9

Ordinal Numbers



Lesson 1

Naming Positions

1

Think



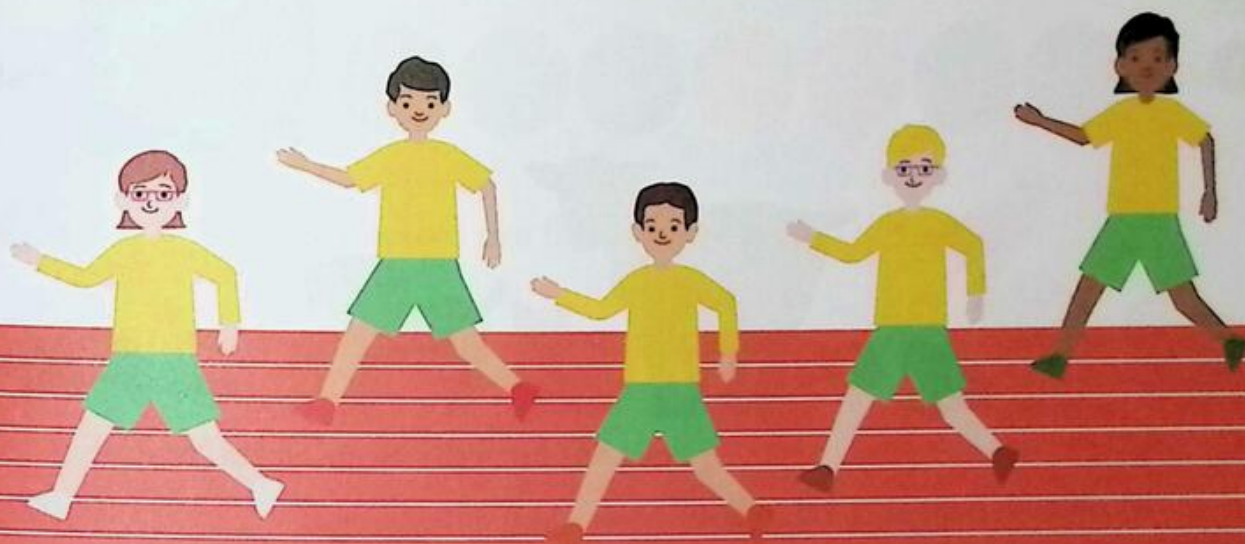
Who are the first three people to cross the finish line?
Who came in third place?

Learn

The third place

1 st	2 nd	3 rd	4 th	5 th
First Mei	Second Alex	Third Sofia	Fourth Dion	Fifth Meg

The first three people



Sixth
Emma



Seventh
Parker



Eighth
Tony



Ninth
Nelson



Tenth
Sasha

Do

1



- (a) Which animal is **1st** in line?
- (b) Which animals are the **first 5** in line?
- (c) Which animal is **5th** in line?
- (d) Which animal is **5th from last**?
- (e) Which animal is **2nd** in line?
- (f) Which animal is **7th** in line?
- (g) In which position from the front is the mountain goat?
- (h) What position from the front is the last animal in line?
- (i) How many animals are **in front of the 8th** in line?
- (j) How many animals are **behind the 8th** in line?
- (k) How many animals are **between the 6th and 9th** in line?

left



right

- 2 (a) How many colors are there?
- (b) What color is **3rd from the right**?
- (c) What color is **5th from the right**?
- (d) What color is **5th from the left**?
- (e) In what position from the left is orange?
- (f) In what position from the right is orange?

- 3 (a) How many shapes are there?
- (b) What shape is **3rd from the top**?
- (c) What shape is **3rd from the bottom**?
- (d) In what position from the top is the circle?
- (e) In what position from the bottom is the circle?
- (f) How many shapes are **below the 1st shape from the top**?

top



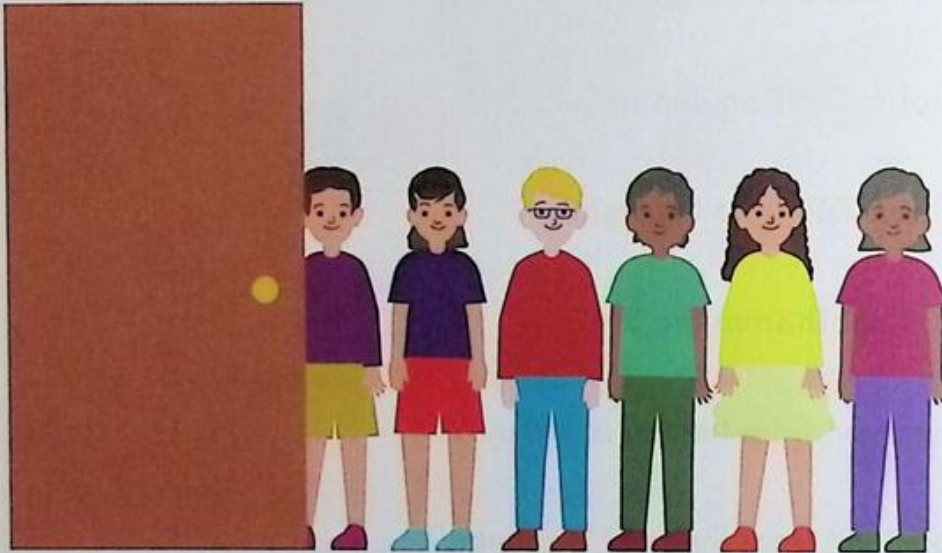
bottom

Lesson 2

Word Problems

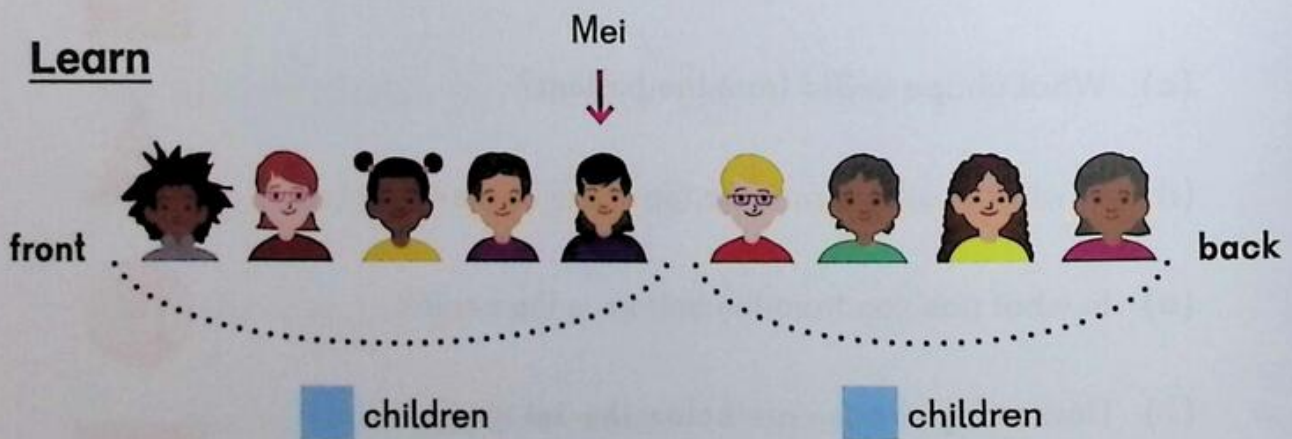
2

Think



Mei is the 5th child in line.
There are 4 other children after her.
How many children are in line?

Learn



$$\square + \square = \square$$

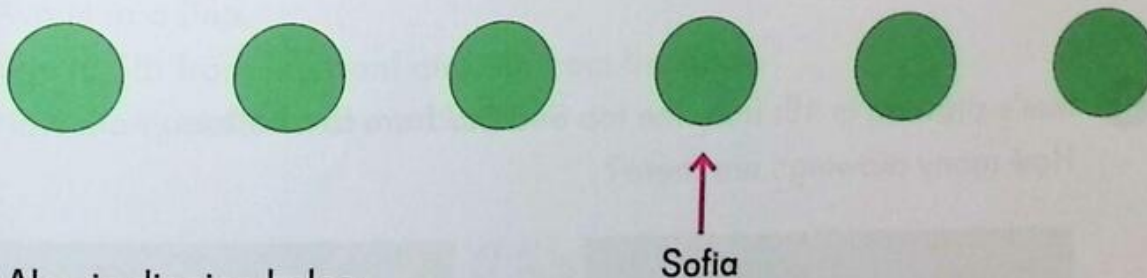
There are $\square$ children in line.

Do

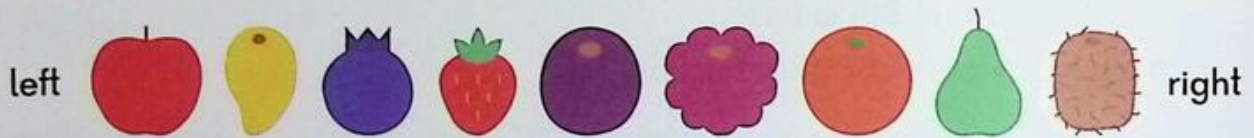
- ① There are 15 cars waiting in line.
The blue car is 6th in line.
How many cars are after the blue car?



- ② Sofia is the 4th person from the front of the line
and the 3rd person from the back of the line.
How many people are in the line?



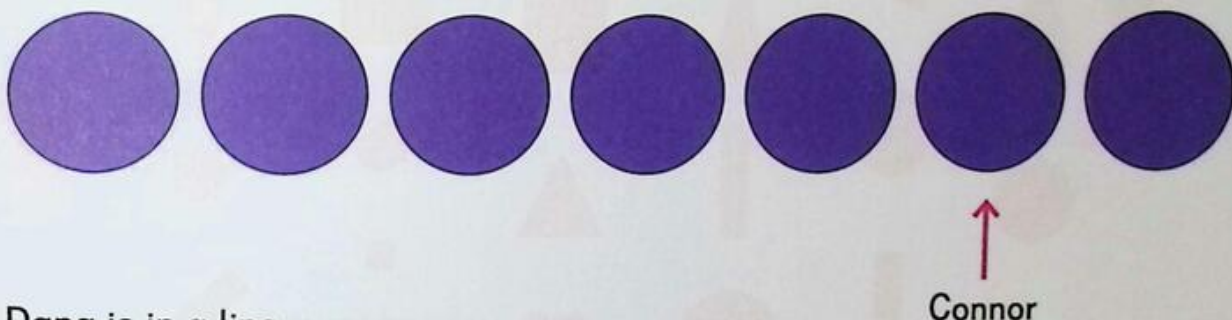
- ③ Alex is digging holes.
He is now digging his 3rd hole.
He has 5 more holes to dig.
How many holes does he have to dig in all?
- ④ There are 9 people standing in line.
Emma is the 4th person in line from the front.
Dion is the 3rd person from the back of the line.
How many people are standing between them?



- 1 (a) Which fruit is 7th from the left?
- (b) In what position from the right is the orange?
- (c) In which position from the left is the pear?
- (d) How many fruit are between the 1st from the left and the 2nd from the right?
- 2 Mei's drawing is 4th from the top and 3rd from the bottom. How many drawings are there?



- 3 Connor is 6th in line.
There are 8 more people behind him.
How many people are in the line?

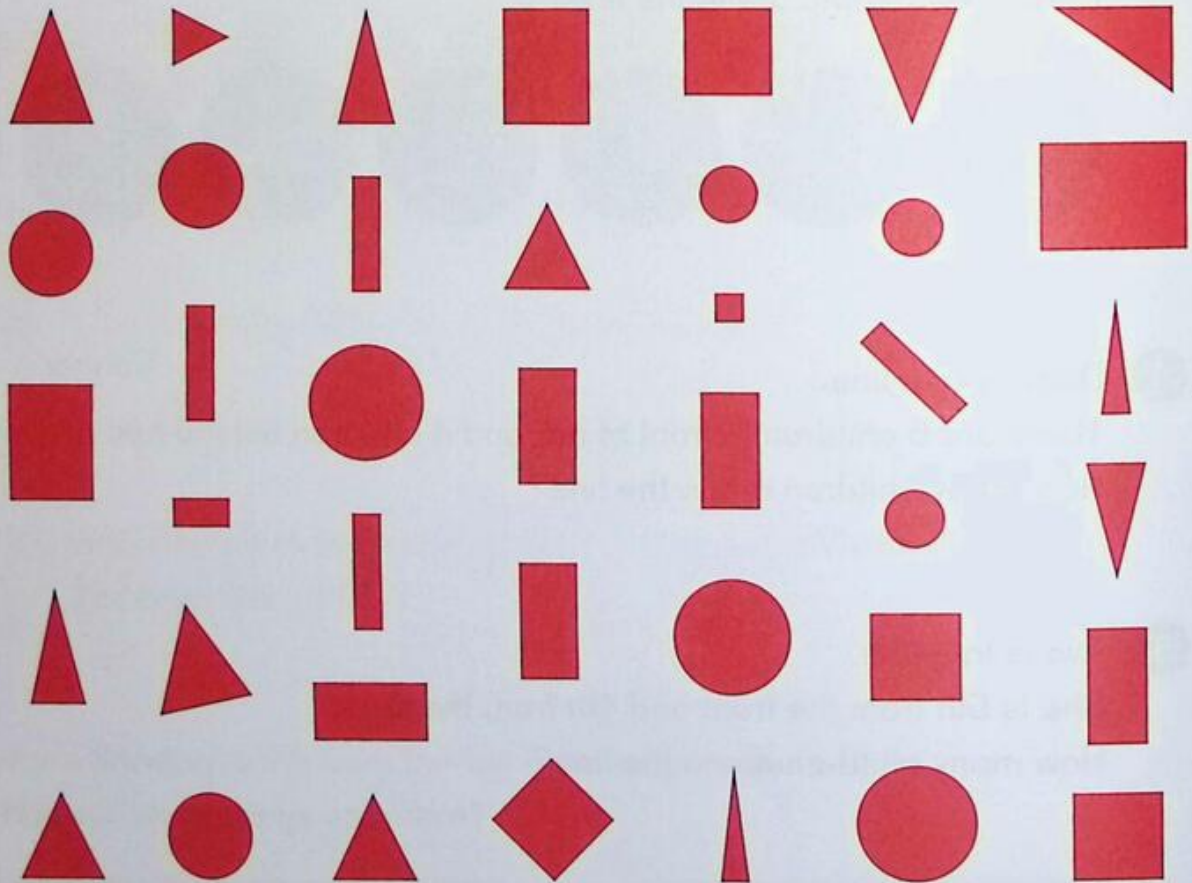


- 4 Dana is in a line.
There are 5 children in front of her and 4 children behind her.
How many children are in the line?

- 5 Ava is in a line.
She is 5th from the front and 4th from the back.
How many children are in the line?

- 6 Jack is in the middle of a line.
There are 7 children in the line.
What is Jack's position from the front?

1



- (a) There are rectangles, triangles, and circles.
- (b) There are fewer _____ than triangles.
- (c) The number of _____ is the greatest.
- (d) Add 6 more circles. There are now circles.
Write an equation.
- (e) Take away 8 triangles. There are now triangles.
Write an equation.

② Complete the number patterns.

(a)

7

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11

--

15

17

--

(b)

18

--

12

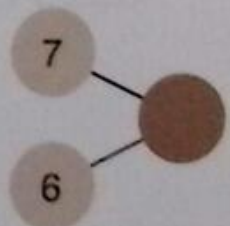
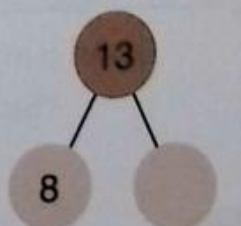
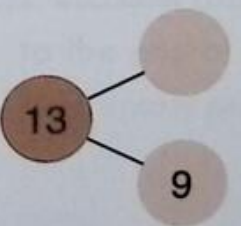
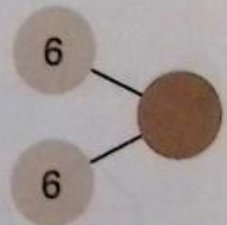
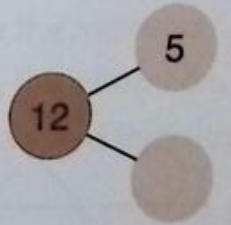
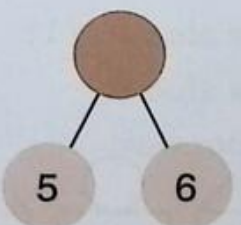
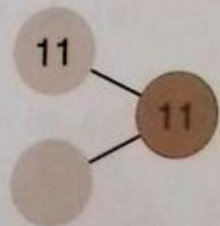
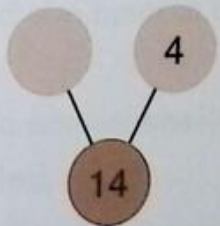
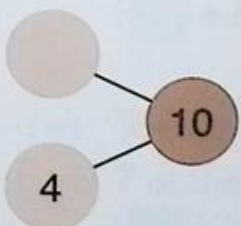
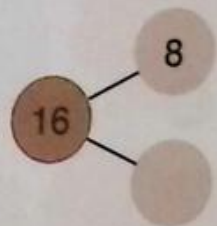
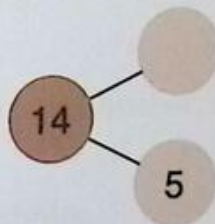
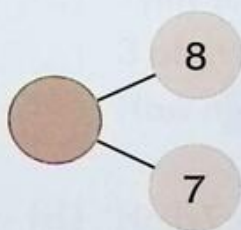
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6

3

--

③ Complete the number bonds.



4 Put in order from least to greatest.

(a)

15

6

18

11

14

(b)

nineteen

twenty

eight

twelve

two

(c)

$15 - 6$

$16 - 6$

$9 + 6$

$15 + 2$

$19 - 6$

5 (a) $14 - 6 = \square$

(b) $8 + 9 = \square$

(c) $7 + \square = 11$

(d) $15 - \square = 7$

(e) $4 + 8 = 10 + \square$

(f) $16 - 7 = 3 + \square$

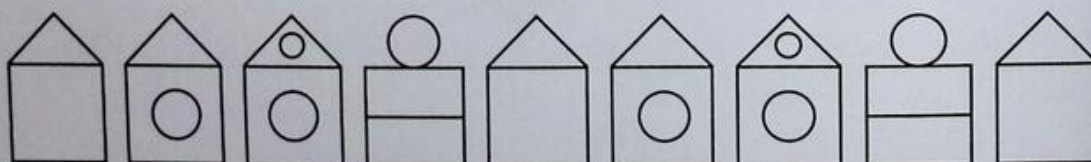
(g) $14 - 5 = 10 - \square$

(h) $13 - 8 = \square - 5$

(i) $12 - 8 = 13 - \square$

(j) $11 - 2 = 4 + \square$

6 What comes next?



7 Write an equation for each and find the answer.

- (a) Mari has 7 books.
She buys 5 more books.
How many books does she have now?
- (b) Salim wants to read 15 books.
He has read 9 books so far.
How many more books does he still need to read?



- (c) Tyler found 15 seashells.
3 of them are broken.
How many seashells are not broken?



- (d) Holly gave away 3 seashells.
She now has 6 seashells.
How many seashells did she have at first?

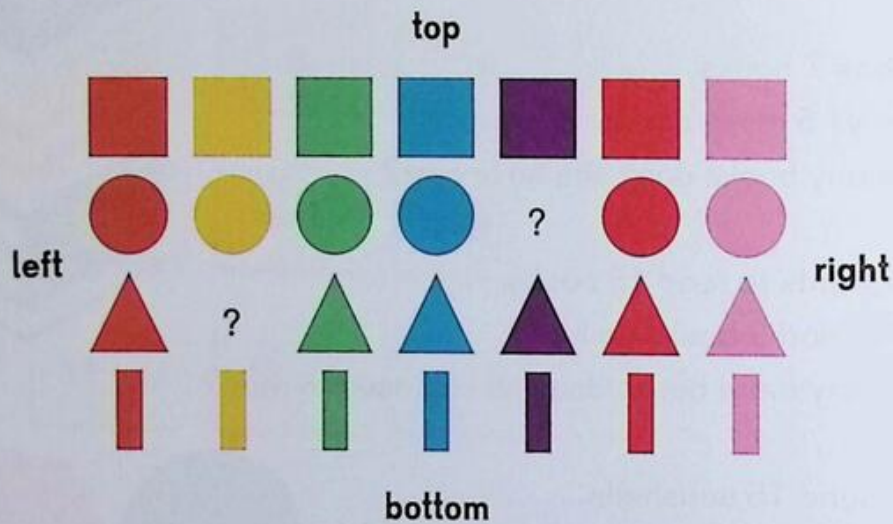
- (e) There are 14 dogs in an animal shelter.
7 of the dogs are adopted.
How many dogs are waiting to be adopted?



- (f) 4 cats were adopted in the morning.
8 cats were adopted in the afternoon.
How many cats were adopted that day?

8 Lisa read from the beginning of the 3rd page to the end of the 12th page in a book.
How many pages did she read?

- 9 These figures are grouped into 4 rows and 7 columns.



- (a) How are they grouped into rows?
- (b) How are they grouped into columns?
- (c) What are the shapes and colors of the missing figures?
- (d) What color is in the middle column?
- (e) What shapes are in the 3rd row from the bottom?
- (f) What color is in the 3rd column from the right?
- (g) What shape and color is 4th from the left and 4th from the top?
- (h) In what position is the green triangle?

