This book has been selected by National Curriculum Council, Ministry of Federal Education & Professional Training, Government of Pakistan, as the textbook for academic year 2020-21 and is being distributed free of cost in schools under the Federal Directorate of Education, Islamabad.

Mathematics

Based on 2017 Curriculum

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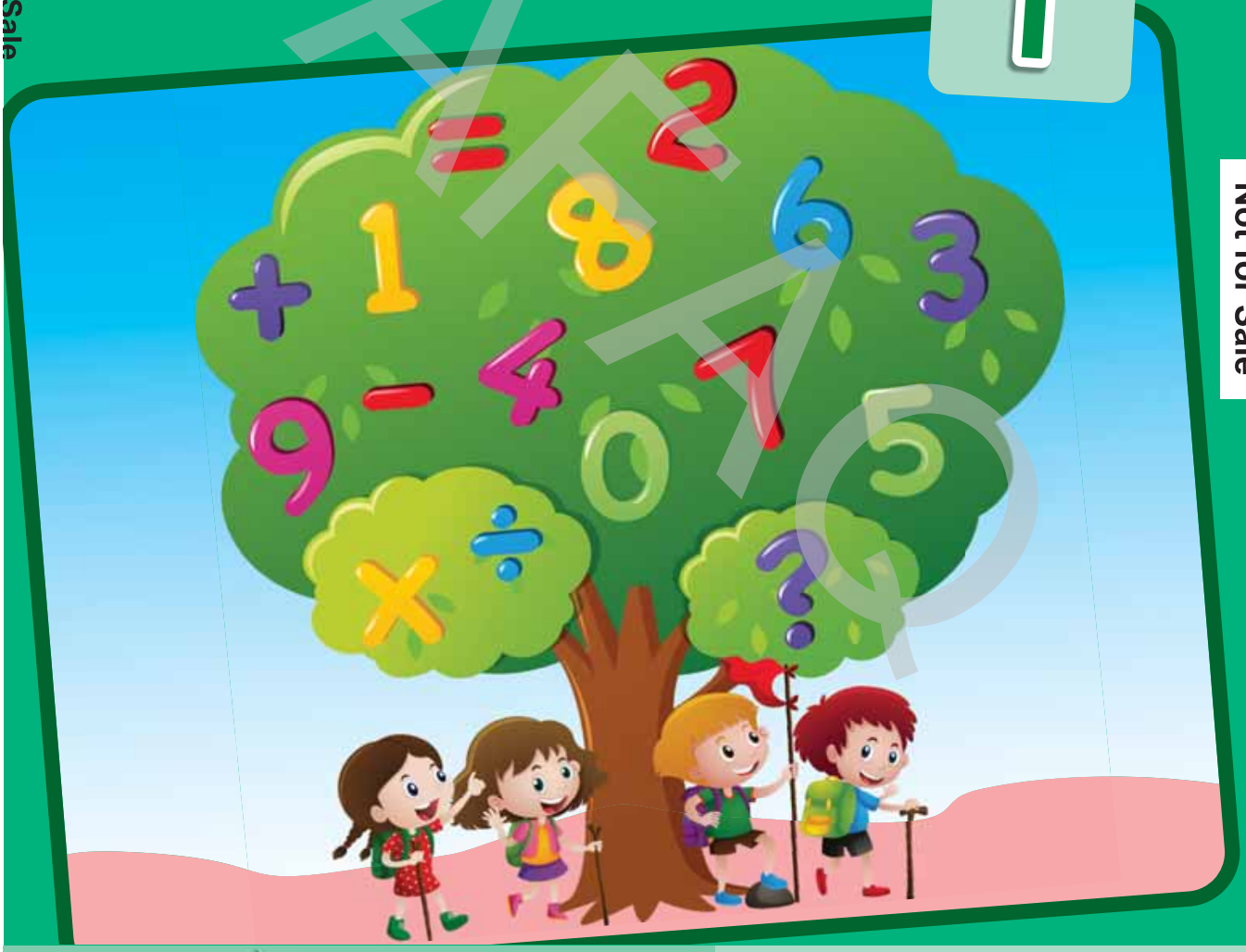

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National Curriculum Council,
Ministry of Federal Education & Professional Training, Government of Pakistan

Textbook of

Mathematics

Grade 1

AEAQ

Approved by
Ministry of Federal Education and Professional Training
&
Federal Directorate of Education(FDE) Capital Administration and
Development Division Government of Pakistan

Preface

Primary Mathematics (1 – 5) has been developed according to the Curriculum 2017. This series is aimed at efficiently facilitating the process of teaching and learning. It encourages reflective thinking and cultivates problem-solving ability among young learners. These textbooks provide real-life learning situations, which are thought-provoking and exciting for students.

The present series of textbooks has been developed in collaboration between the Ministry of Federal Education and Professional Training and Federal Directorate of Education, Capital Administration and Development Division (CADD). The main aim is to provide quality textbooks as per vision of the government to make Islamabad Capital Territory (ICT) a model education city. It is the result of detailed deliberations between the curriculum developers and the authors who worked in close collaboration to translate the soul of the curriculum into the textbooks.

These books are geared to making students competent and proficient young mathematicians right from their juniour grades.

This series focuses on five core areas of Mathematics: numbers and their operations, measurement, geometry, algebraic concepts and data handling. These books include an exciting and pleasant layout, eye-catching graphics and progression-controlled text, which is organised in a logical way.

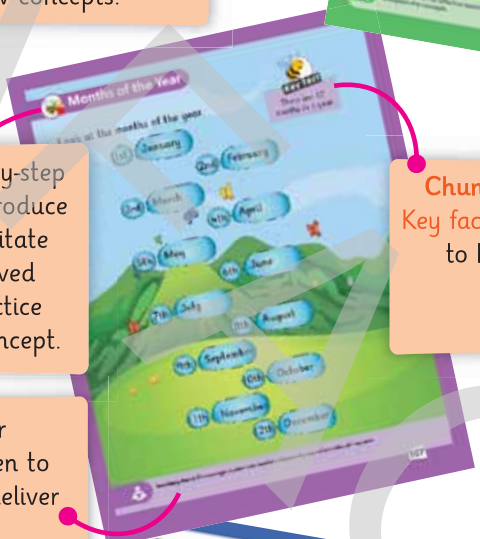
We will appreciate your valuable feedback and suggestions to make these books more useful for young learners.
May Allah guide and help us (Ameen)!

About the Book

Learning Outcomes: Each unit starts with the target outcomes to be achieved in that specific unit.

Unit Opener: A full page picture with intriguing question is given at the beginning of a unit to bridge the prior knowledge of the student with the upcoming new concepts.

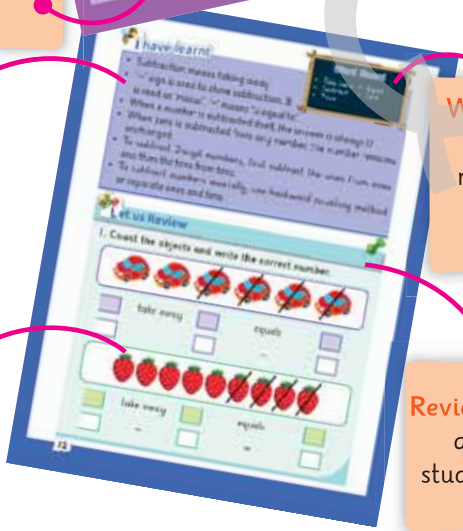
Concept Building: A step-by-step procedure is provided to introduce each new concept. To facilitate independent working, solved examples and guided practice is added after each new concept.



Chunks: Each unit includes a Key facts, Hints and Check Points to highlight terminologies or facts relevant to the topic.

Teaching Points: Clear instructions have been given to the teacher about how to deliver each lesson.

I Have Learnt: It sums up the key points learnt in the unit.



Word Board: Vocabulary words consisting of mathematical terms are given at the end of each unit.

A variety of **activities** have been used for clear understanding.

Review exercise: It comprises questions that prompt students to recap the whole lesson.

بِسۡمِ اللّٰہِ الرَّحۡمٰنِ الرَّحِیۡمِ

شروع اللہ کے نام سے جو بڑا مہربان نہایت رحم والا ہے۔

Contents

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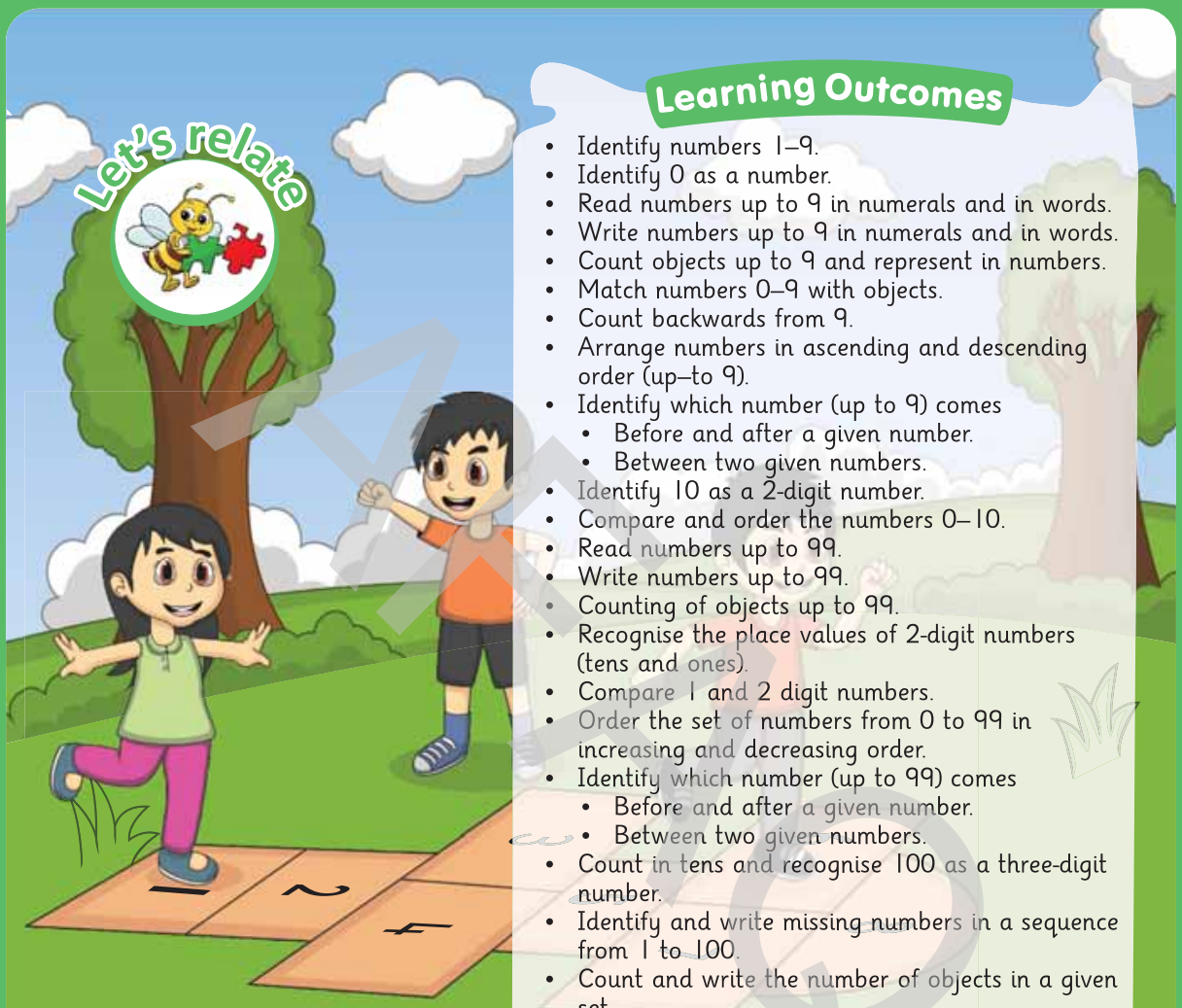
Unit 1

Numbers



Learning Outcomes

- Identify numbers 1–9.
- Identify 0 as a number.
- Read numbers up to 9 in numerals and in words.
- Write numbers up to 9 in numerals and in words.
- Count objects up to 9 and represent in numbers.
- Match numbers 0–9 with objects.
- Count backwards from 9.
- Arrange numbers in ascending and descending order (up–to 9).
- Identify which number (up to 9) comes
  - Before and after a given number.
  - Between two given numbers.
- Identify 10 as a 2-digit number.
- Compare and order the numbers 0–10.
- Read numbers up to 99.
- Write numbers up to 99.
- Counting of objects up to 99.
- Recognise the place values of 2-digit numbers (tens and ones).
- Compare 1 and 2 digit numbers.
- Order the set of numbers from 0 to 99 in increasing and decreasing order.
- Identify which number (up to 99) comes
  - Before and after a given number.
  - Between two given numbers.
- Count in tens and recognise 100 as a three-digit number.
- Identify and write missing numbers in a sequence from 1 to 100.
- Count and write the number of objects in a given set.
- Identify the position of objects using ordinal numbers such as first, second,..., tenth, including representations 1^{st}, 2^{nd}, ..., 10^{th}.
- Compare two or more groups of objects in terms of numbers.
- Match objects having one-to-one correspondence.
- Identify the number of objects in two groups to show "more than" and "less than".
- Compare numbers from 1 to 20 to identify "how much more" one is from another.

?

The kids are playing in the park. Look and tell which number is the smallest.

Teaching Point: For effective teaching and learning, feel free to use 'Urdu' as a medium of instruction to explain the concepts.

Counting

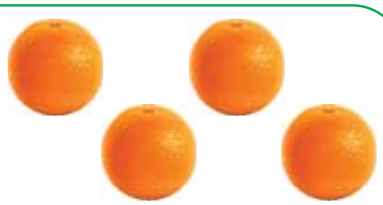
Let us start counting.

1

2

3

4



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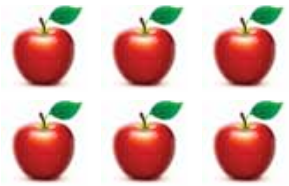

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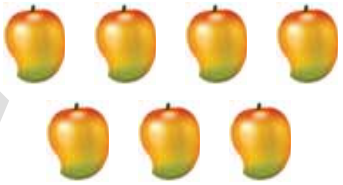

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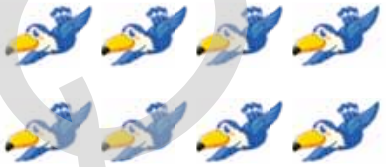


9

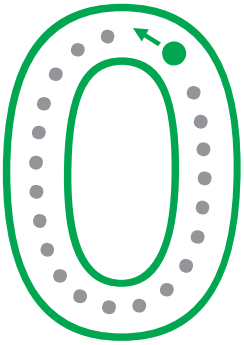
Zero

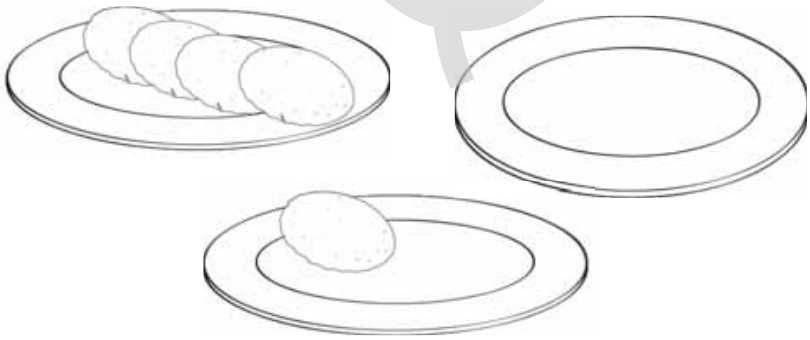
How many fish are there in the fishbowl?

There is no fish in the fishbowl.

The number of fish in the fishbowl is zero or '0'. Zero means nothing.

Trace the number 0. Colour the plate that has no biscuits on it.





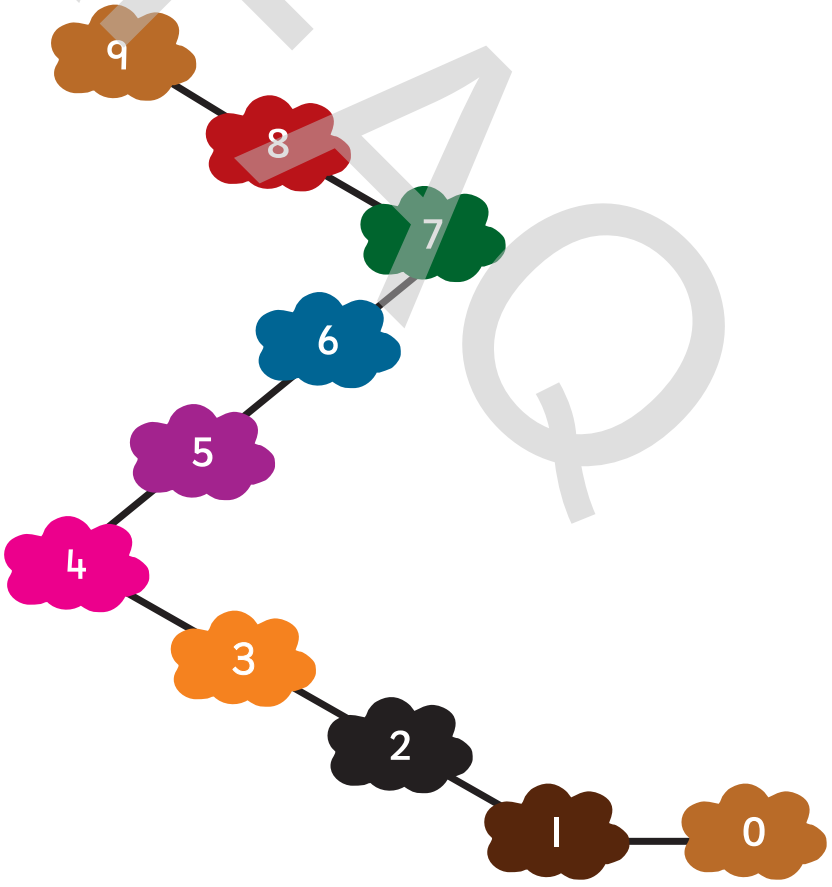
AEAQ

Teaching Point: Show some full and empty objects to students and ask them to count and tell them that zero means nothing.

Forward and Backward Counting

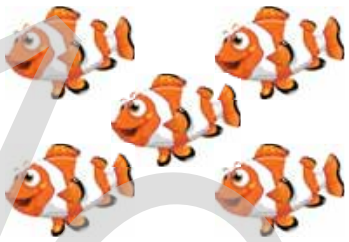
Let us count forward from 0.

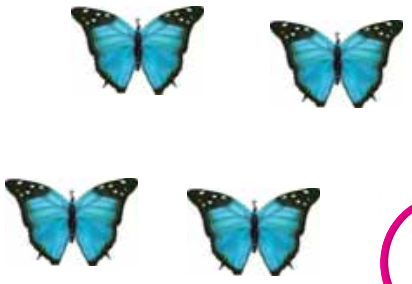
Let us count backward from 9.



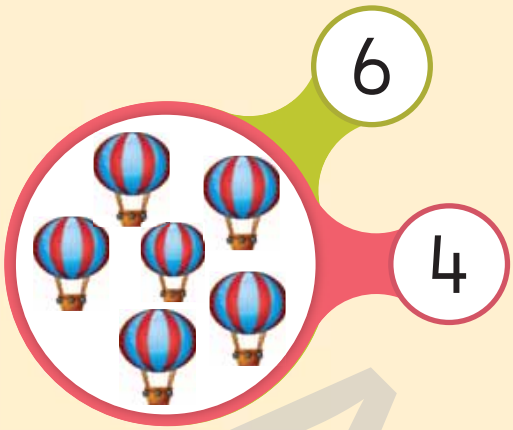
AEAQ

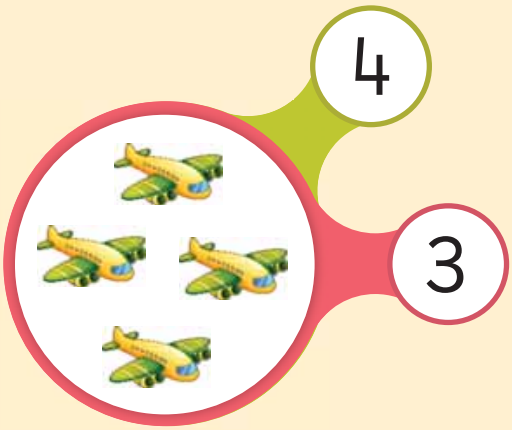
1. Count objects in each group and write the number in the circle.



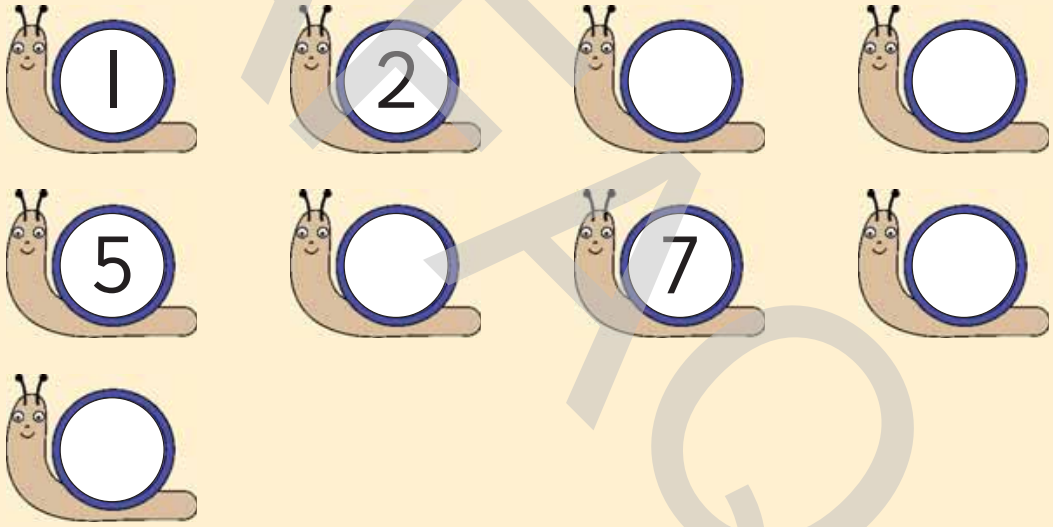


2. Count the objects and colour the correct number.

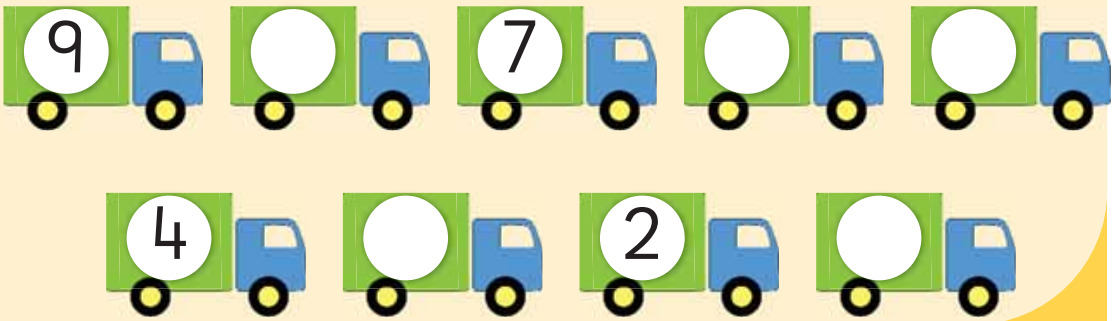




3. Count forwards and write the missing numbers.



4. Count backwards and write the missing numbers.



AFAQ

5. Match the objects with the correct number.

2 5 3 4

6. Count the objects and circle the correct number.

6 7 5

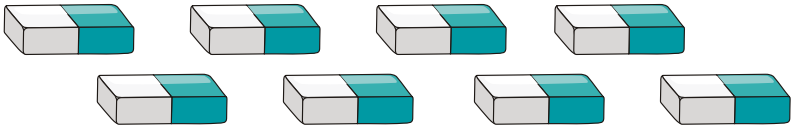
5 7 6

8 0 9

4 2 1

Number Names

Count and read the numbers and number names.

	1	One
	2	Two
	3	Three
	4	Four
	5	Five
	6	Six
	7	Seven
	8	Eight
	9	Nine

Trace and write the number names.

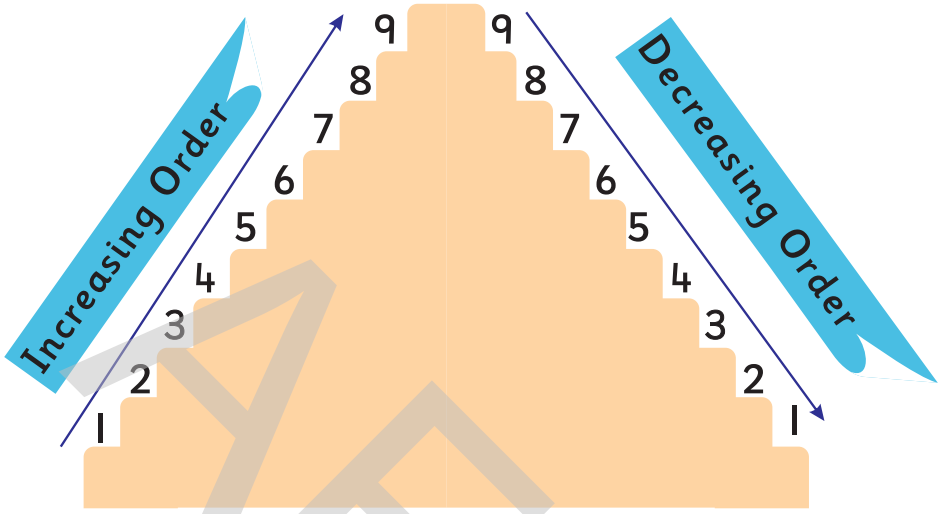
1	One		
2	Two		
3	Three		
4	Four		
5	Five		
6	Six		
7	Seven		
8	Eight		
9	Nine		

EAP

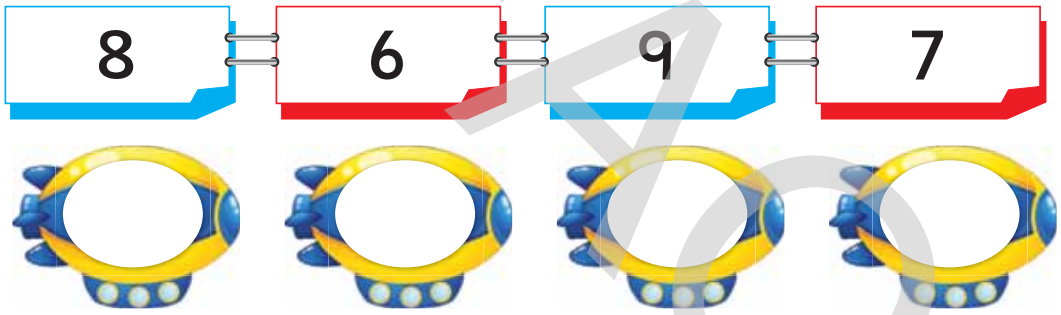
Teaching Point: Help students to learn the number names by reading rhymes of numbers.

Ordering Numbers

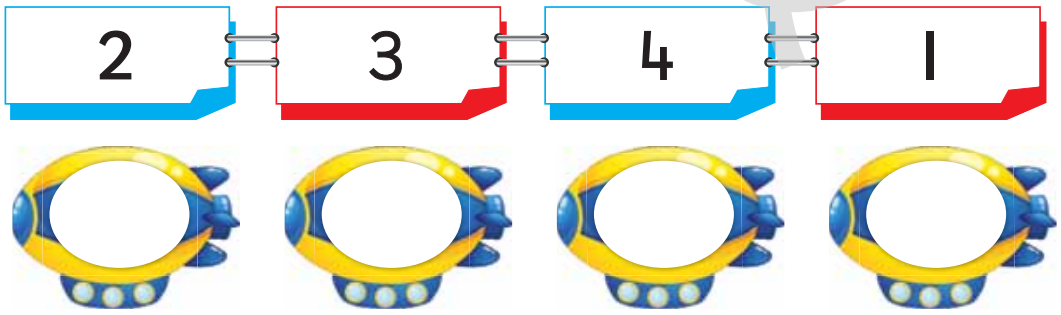
Increasing and Decreasing Order



Write the given numbers in increasing order.



Write the given numbers in decreasing order.



Teaching Point: Give random flash cards to students and ask them to arrange the cards in increasing and decreasing order.

Before, After and Between

Check Point

What comes before 8?

Write the numbers that come before.

3 4	5
7	9

Check Point

What comes after 2?

Write the numbers that come after.

6 7	8
7	3

Check Point

What comes between 1 and 3?

Write the number that comes between the given numbers.

6 7 8	7 9
2 4	5 7

Teaching Point: Show some numbers cards to the students and ask them to tell which number comes before and after these numbers.

Concept of 10

I had a train with 9 boxes. I added one more box to the train. Now the train has 10 boxes.

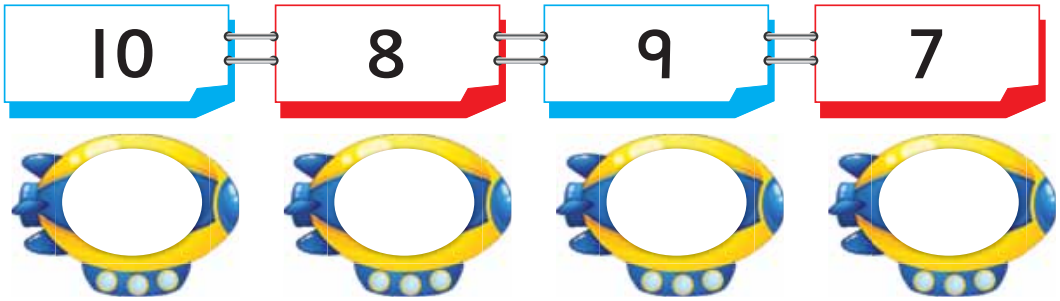
Key fact

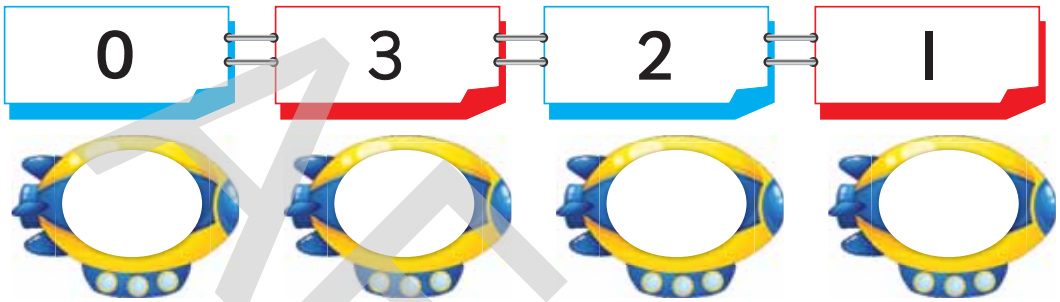
10 is the first 2-digit number.

Check Point

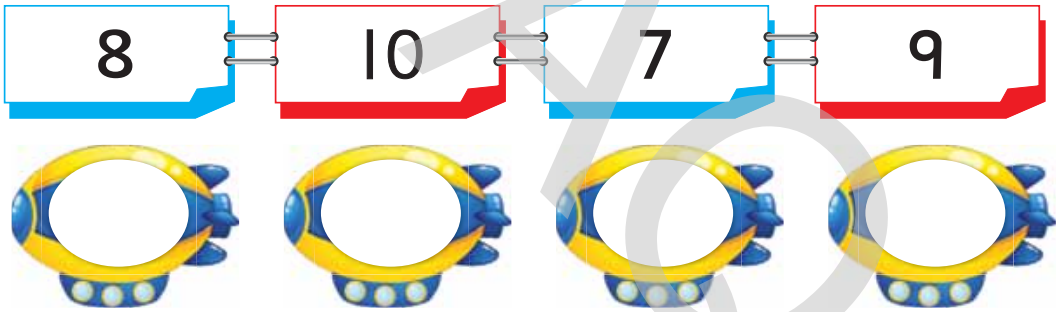
What comes after 9?

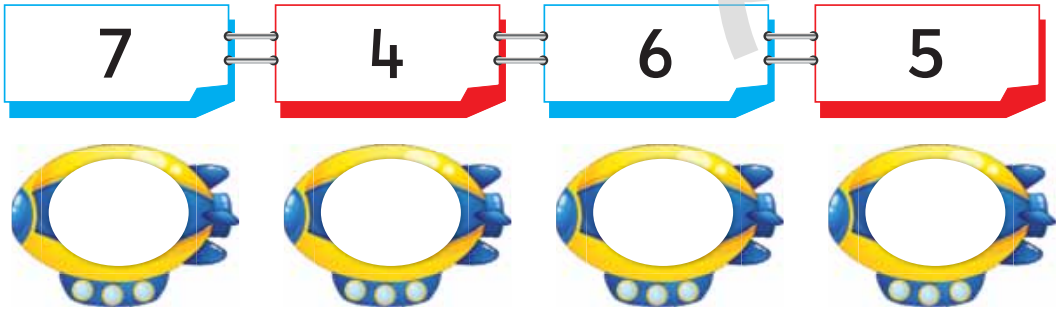
Write the given numbers in increasing order.





Write the given numbers in decreasing order.





Teaching Point: Give random flash cards to students and ask them to arrange the cards in increasing and decreasing order.

Place Value (Tens, Ones)

I have 15 pencils.

Let us circle 10 pencils to make a bundle.

I have 1 bundle of ten pencils and 5 more pencils.

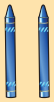
1 ten 5 ones

1 ten and 5 ones make 15.

Teaching Point: Give students different groups of objects and help them to make bundle of tens and count the numbers.

Numbers 1 - 10

Let us count and read (1 - 10).

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

ATP

Numbers 11 - 20

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	1	1	11
	1	2	12
	1	3	13
	1	4	14
	1	5	15
	1	6	16
	1	7	17
	1	8	18
	1	9	19
	2	0	20

AFAQ

Numbers 21 - 30

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	2	1	21
	2	2	22
	2	3	23
	2	4	24
	2	5	25
	2	6	26
	2	7	27
	2	8	28
	2	9	29
	3	0	30

MEHAQ

Numbers 31 - 40

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	3	1	31
	3	2	32
	3	3	33
	3	4	34
	3	5	35
	3	6	36
	3	7	37
	3	8	38
	3	9	39
	4	0	40

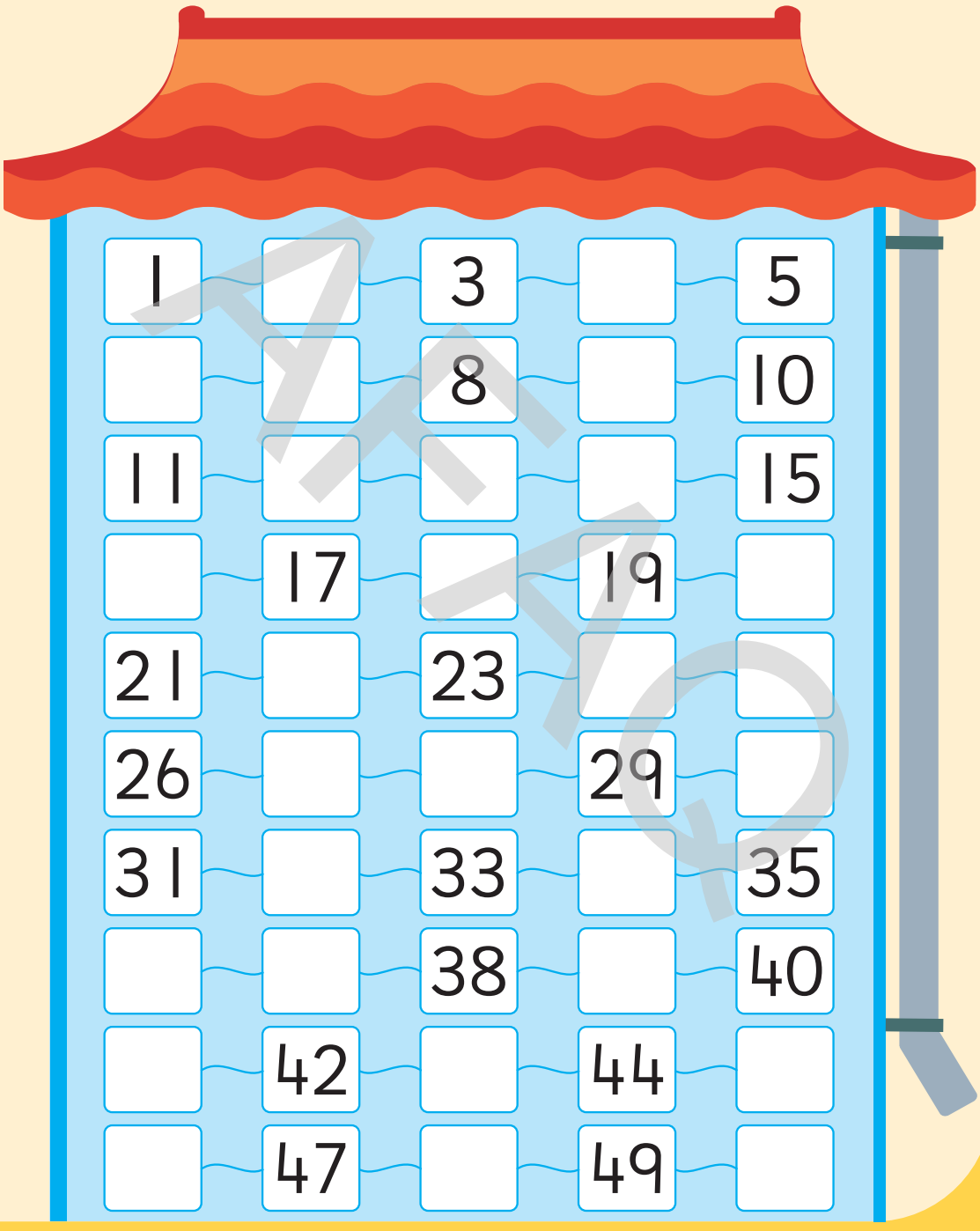
ATAQ

Numbers 41 - 50

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	4	1	41
	4	2	42
	4	3	43
	4	4	44
	4	5	45
	4	6	46
	4	7	47
	4	8	48
	4	9	49
	5	0	50

1. Write the missing numbers.



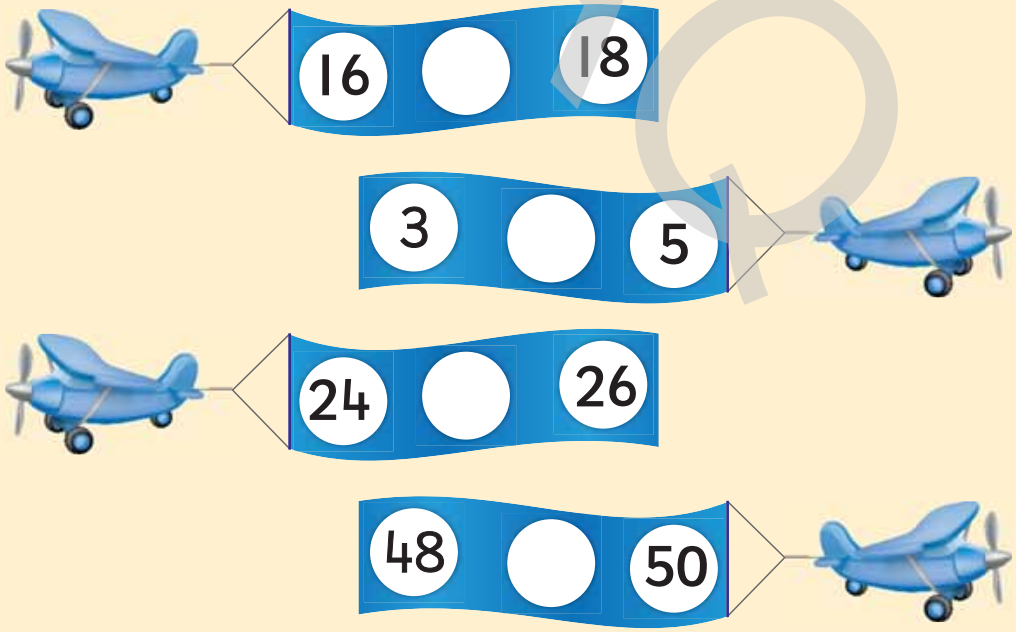
1		3		5
		8		10
11				15
	17		19	
21		23		
26			29	
31		33		35
		38		40
	42		44	
	47		49	

2. Write what comes before the given number.

3. Write what comes after the given number.

20		11	
7		45	

4. Write what comes between the given numbers.



5. Count and write how many tens and ones are there.
Also write the number.

Bundles	Tens	Ones	Numbers
	1	2	12
			
			
			
			
			
			
			
			
			

ΥΠΑΩ

Numbers 51 - 60

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	5	1	51
	5	2	52
	5	3	53
	5	4	54
	5	5	55
	5	6	56
	5	7	57
	5	8	58
	5	9	59
	6	0	60

ETAQ

Numbers 61 - 70

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	6	1	61
	6	2	62
	6	3	63
	6	4	64
	6	5	65
	6	6	66
	6	7	67
	6	8	68
	6	9	69
	7	0	70

Numbers 71 - 80

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	7	1	71
	7	2	72
	7	3	73
	7	4	74
	7	5	75
	7	6	76
	7	7	77
	7	8	78
	7	9	79
	8	0	80

KTAQ

Numbers 81 - 90

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	8	1	81
	8	2	82
	8	3	83
	8	4	84
	8	5	85
	8	6	86
	8	7	87
	8	8	88
	8	9	89
	9	0	90

Numbers 91 - 99

Let us count tens and ones and read the numbers.

Bundles	Tens	Ones	Numbers
	9	1	91
	9	2	92
	9	3	93
	9	4	94
	9	5	95
	9	6	96
	9	7	97
	9	8	98
	9	9	99

Teaching Point: Give students different groups of objects to make bundles of tens and help them to count the numbers.

1. Fill in with the correct tens and ones for the given numbers.

52 = 5 tens and 2 ones

69 = ( ) tens and ( ) ones

71 = ( ) tens and ( ) one

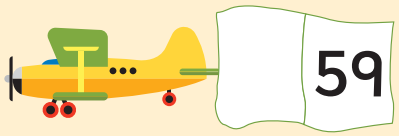
87 = ( ) tens and ( ) ones

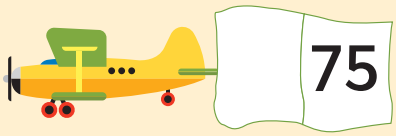
94 = ( ) tens and ( ) ones

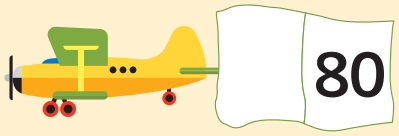
2. Circle the correct place value of the coloured digit.

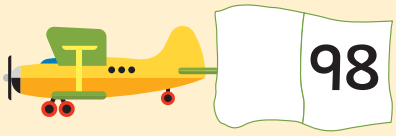
57 Tens / Ones	66 Tens / Ones
69 Tens / Ones	79 Tens / Ones
81 Tens / Ones	87 Tens / Ones
92 Tens / Ones	98 Tens / Ones

3. What comes before the given number.

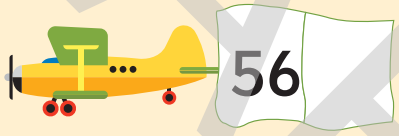


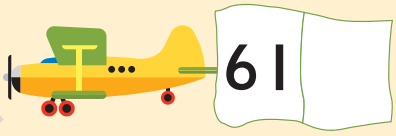


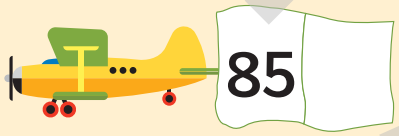


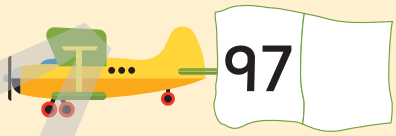


4. What comes after the given number.

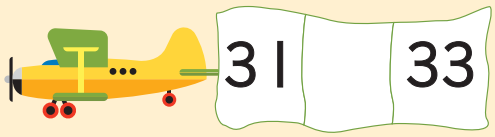


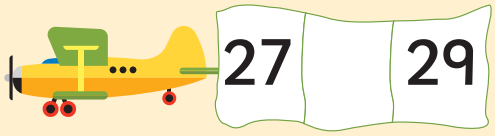


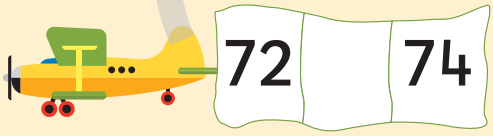


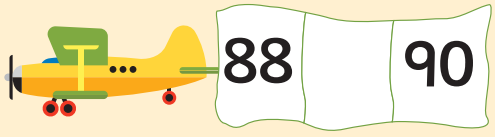


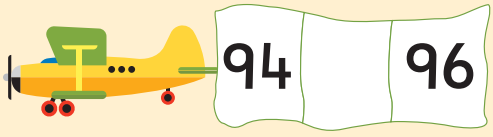
5. What comes between the given numbers.











Comparison of 2-digit Numbers

I have 20 blocks. My sister has 10 blocks.

Key fact

10 is the smallest 2 digit number.

Who has less number of blocks?

Let us compare the numbers 20 and 10.

20 is 10 more than 10.

2 tens are greater than 1 ten.

So, 20 is greater than 10.

Compare the numbers 13 and 16.

16 is 3 more than 13.

13 is 1 ten and 3 ones.

16 is 1 ten and 6 ones.

Both tens are the same. Now let us compare the ones.

3 ones are less than 6 ones. So, 13 is less than 16.

Key fact

1-digit numbers are always smaller than the 2-digit numbers.

Teaching Point: Give groups of different numbers of objects to students and help them to compare by counting the number of objects in each group.

Ordering Numbers

Arrange the numbers 39, 23 and 46 in increasing and decreasing order.

39 is 3 tens and 9 ones.

23 is 2 tens and 3 ones.

46 is 4 tens and 6 ones.

2 tens are smaller than 3 tens and 4 tens.

So, 23 is the smallest number.

4 tens are greater than 2 tens and 3 tens.

So, 46 is the greatest number.

Increasing order: 23, 39, 46 **Decreasing order:** 46, 39, 23

Colour the smallest number red and the greatest number green. Then write the numbers in increasing order.

a) 54 96 24 _____

b) 14 86 77 _____

c) 54 9 60 _____

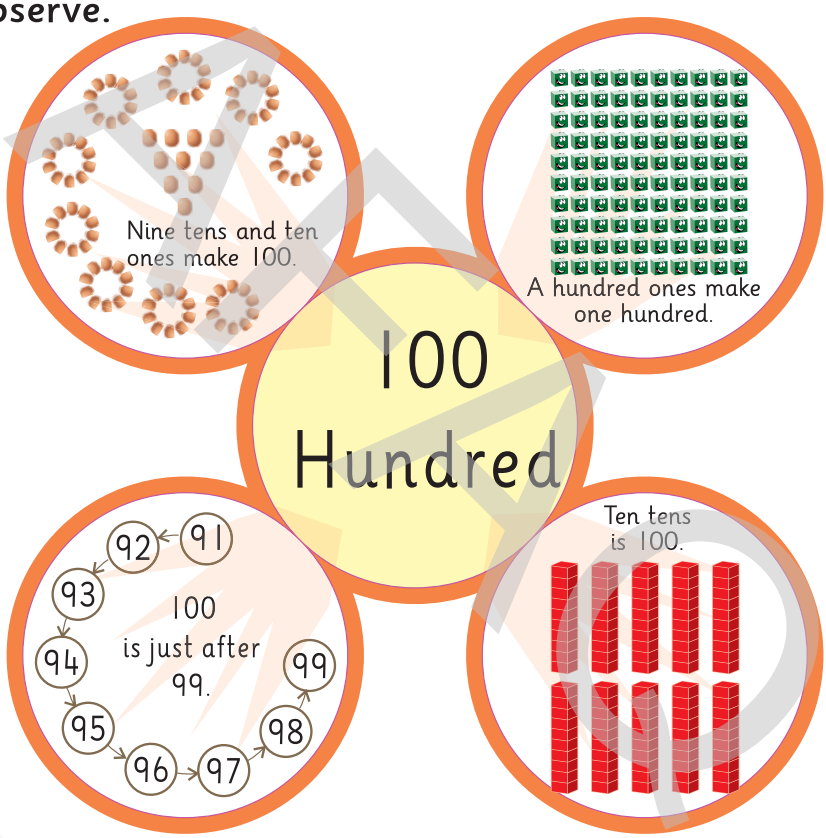
Teaching Point: Give random flash cards to students and ask them to arrange the cards in increasing and decreasing order.

Number 100

When we add 1 more to 99, what do we get?

99 and 1 make 100.

Let us observe.



Key fact

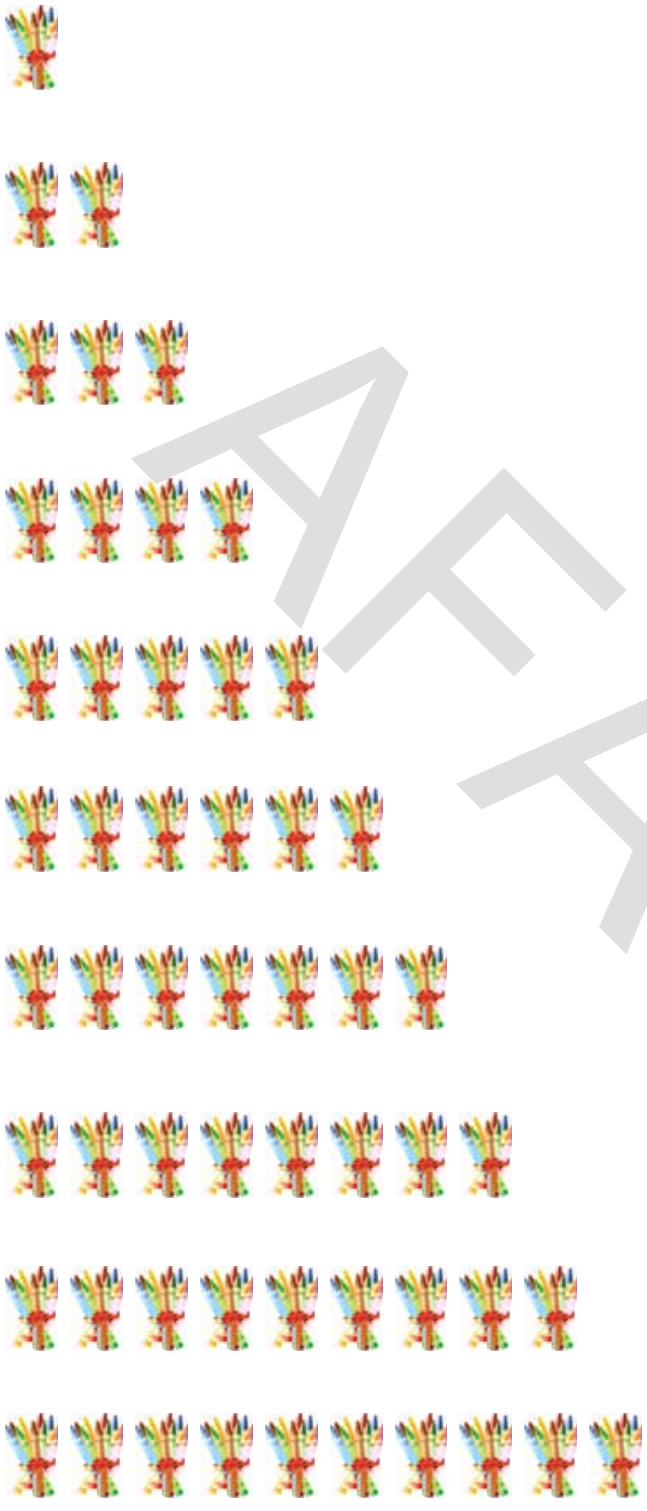
100 is the first 3-digit number.

Check Point

What comes before 100?

Teaching Point: Give students a jar of beads and instruct them to make ten groups of ten beads and tell them how many tens are in one hundred.

Counting in 10s



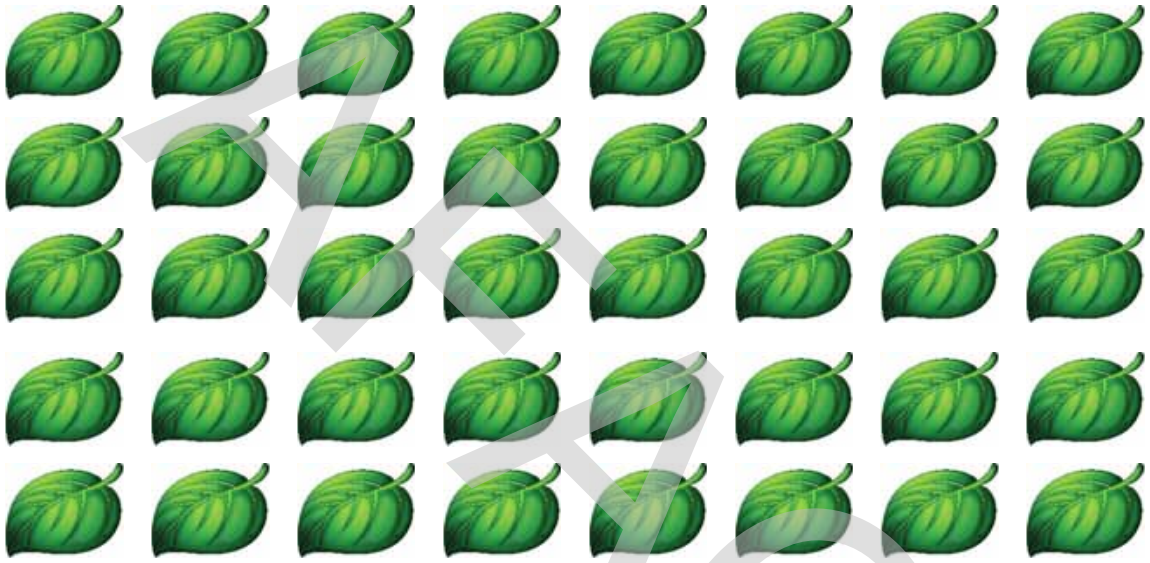
1 ten makes	10
2 tens make	20
3 tens make	30
4 tens make	40
5 tens make	50
6 tens make	60
7 tens make	70
8 tens make	80
9 tens make	90
10 tens make	100

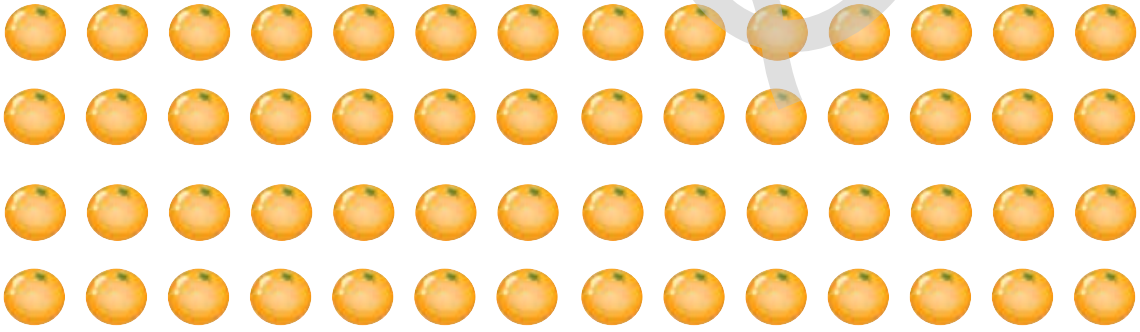
AFAQ

Let us write the missing numbers.

	2			5		7		9	
11					16		18		20
	22			25			28		
	32				36				40
41	42			45		47	48		
	52				56		58		60
61				65				69	
	72			75			78	79	
	82		84			87			90
91					96		98		

Count and write the correct number of objects.





Ordinal Numbers

How do we tell the position of objects?

We tell the position of objects by using ordinal numbers.

10th tenth

9th ninth

8th eighth

7th seventh

6th sixth

5th fifth

4th fourth

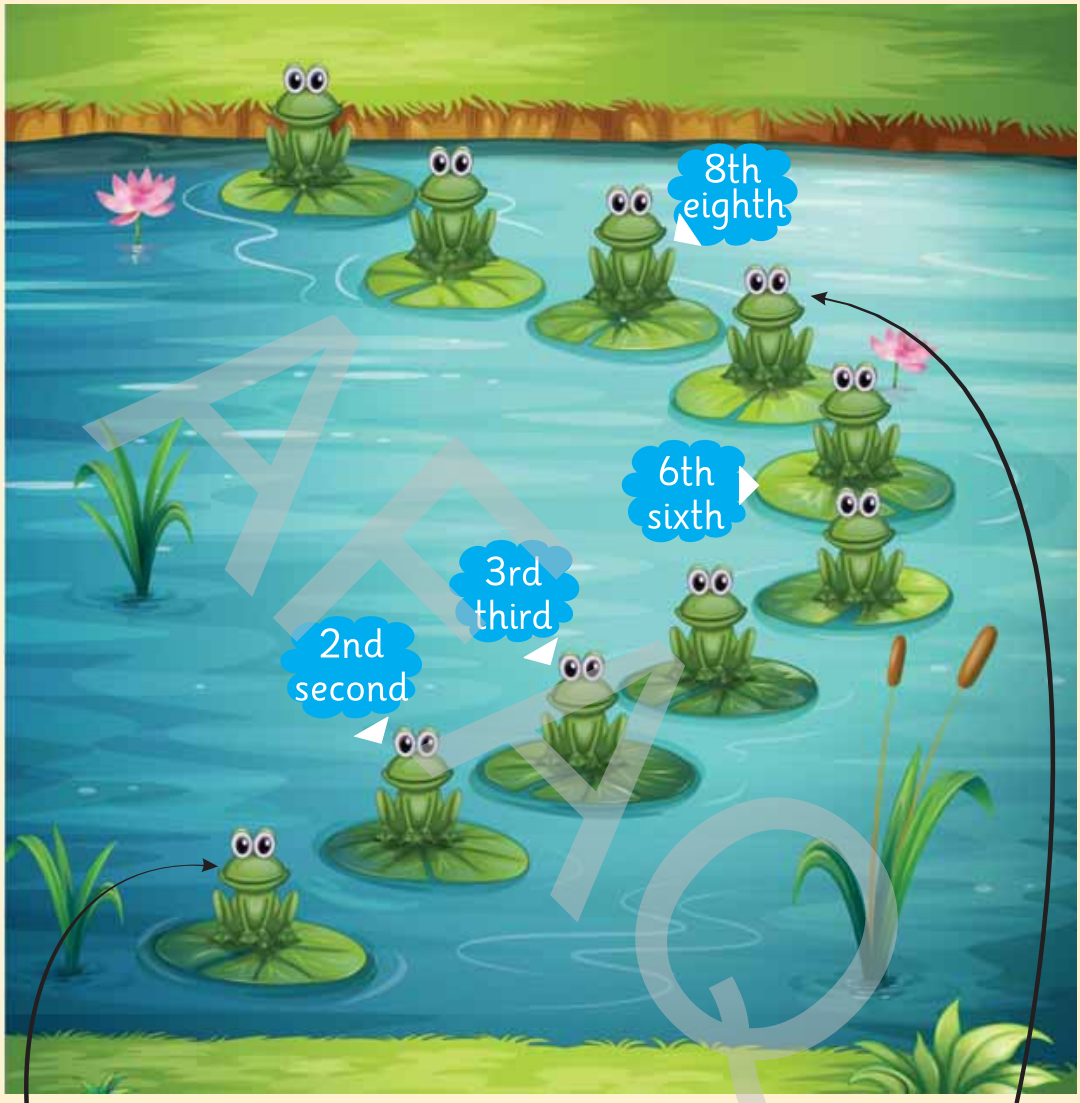
3rd third

2nd second

1st first

Teaching Point: Paste the wall chart of racing cars on the wall and help the students to tell the position of each car.

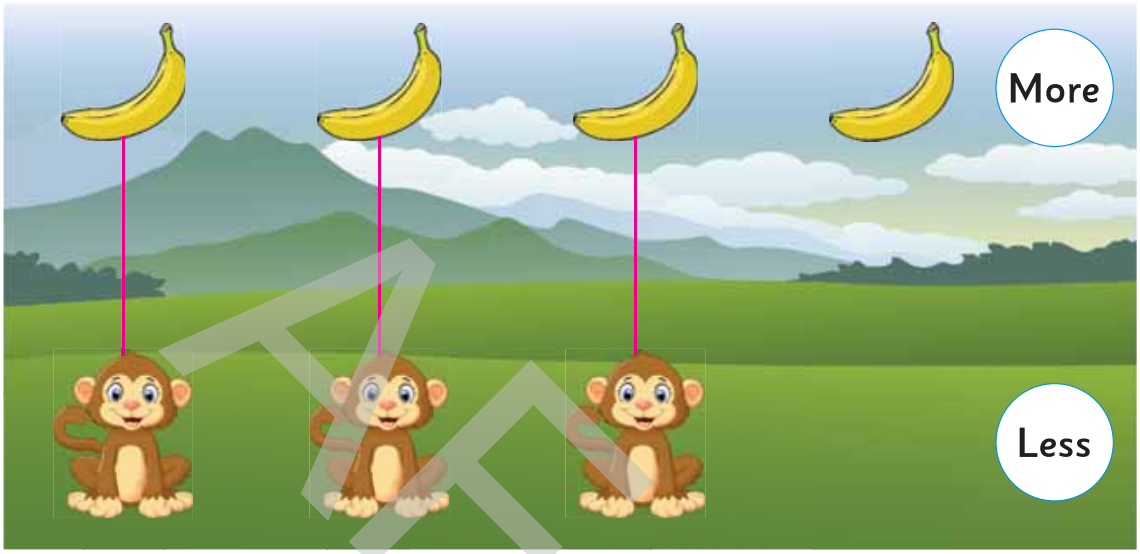
Draw a line to match the correct positions of the frogs.



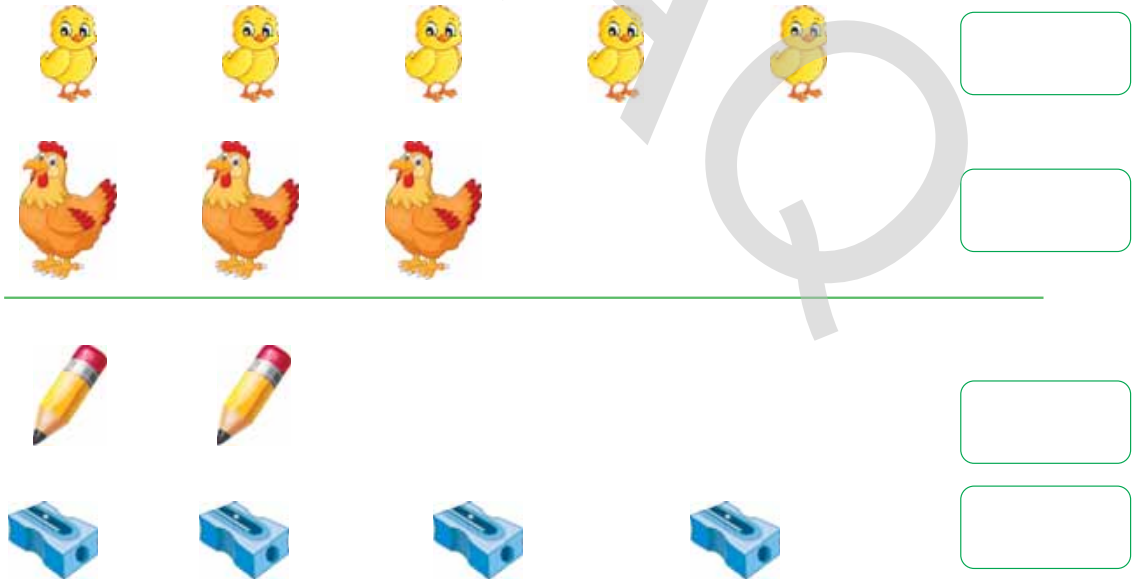
1st first	5th fifth	9th ninth	4th fourth	10th tenth	7th seventh

One-to-one correspondence

Let us match.



Match the objects one-to-one and write 'less' or 'more' in the given boxes.



Teaching Point: Give students different groups of objects and ask them to count objects using one-to-one matching and tell which group has more objects and which one has less.

Comparing Objects

I have 5 cupcakes on one plate and 3 on the other. Can we compare the number of cupcakes?

Yes, we can compare the number of cupcakes by counting them.

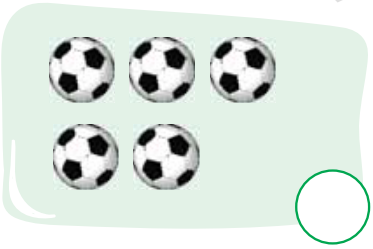
Let us observe.

5

3

5 cupcakes are more than 3 cupcakes. 5 is 2 more than 3.

Tick (✓) the box which has more objects.



So, 8 is_____more than 5.

So,_____ is _____ more than _____.

Teaching Point: Give groups of different numbers of objects to students and help them to compare by counting the number of objects in each group.

I have learnt

- Zero means nothing.
- 10 is the first 2-digit number.
- Tens and ones make 2-digit numbers.
- When 1 is added to 99, it makes 100.
- Ordinal numbers tell the position of objects.

Word Board

- Zero
- 2-digit number
- Increasing
- Decreasing
- Ordinal group

Let us Review

1. Write the missing numbers.

66 , 69 , 71

, 73 , , 76 ,

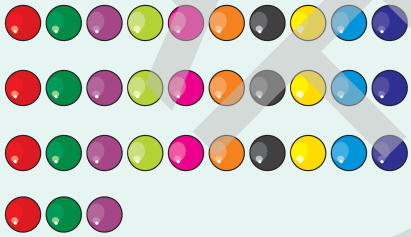
, 81 , , 84 , , 87

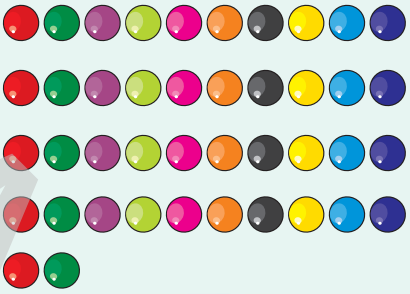
91 , , 95 , , 98

2. Write the position of each letter in the word 'PAKISTAN'.

From left:	P is the _____ letter.	T is the _____ letter.
	K is the _____ letter.	N is the _____ letter.
From right:	S is the _____ letter.	I is the _____ letter.
	N is the _____ letter.	T is the _____ letter.

3. Count the objects and write the correct answer.
Also write 'more than' or 'less than' in the blanks.

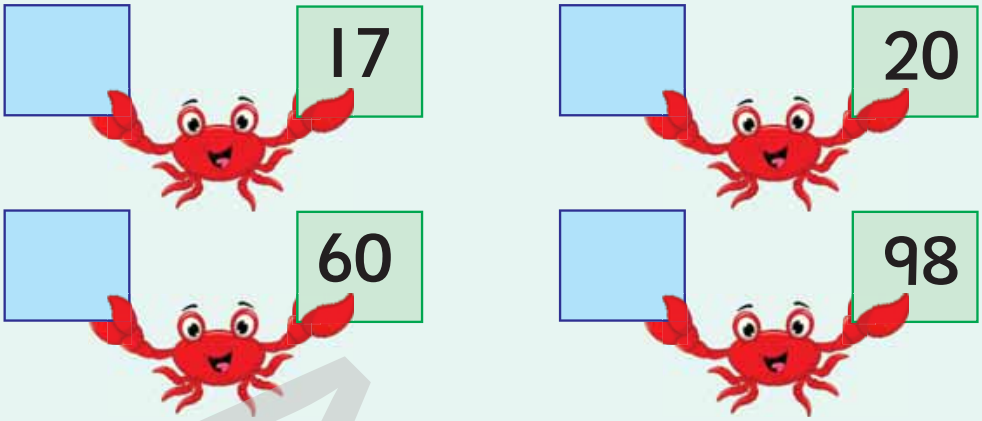




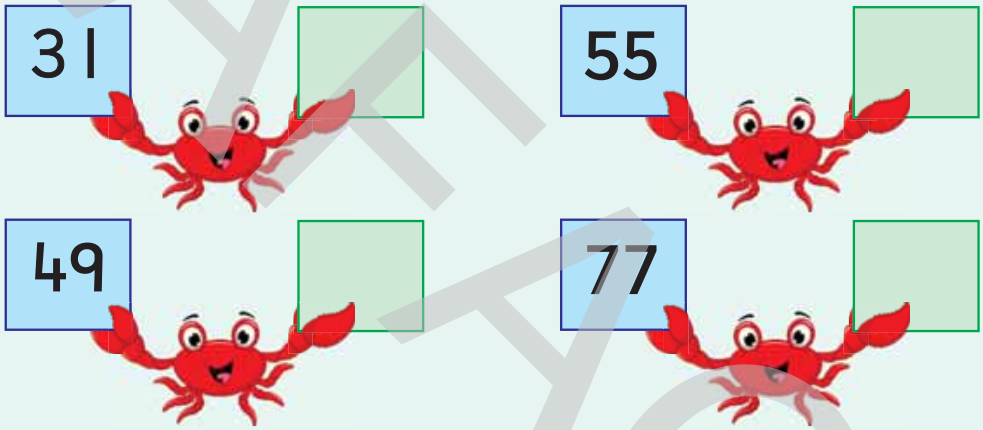
is _____

is _____

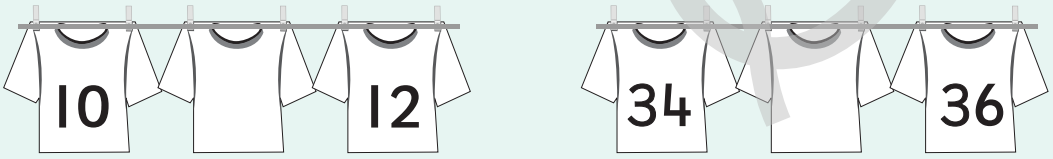
4. Write the numbers that come before the following numbers.



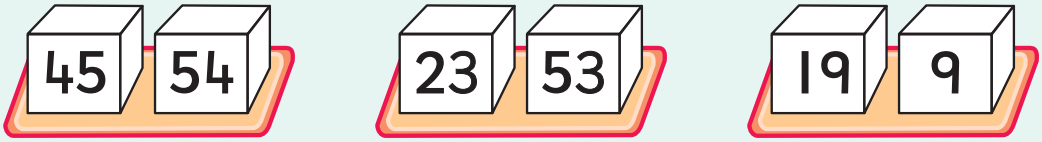
5. Write the numbers that come after the following numbers.



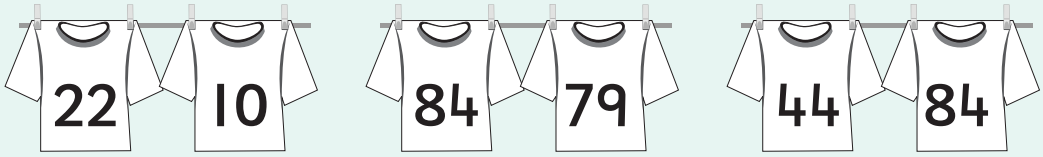
6. Write the numbers that come between the following numbers.



7. Compare and colour the smaller number in each of the following.



8. Compare and circle the greater number in each of the following.



9. Write the following numbers in increasing order.

87 63 79 98 88

43 50 62 44 24

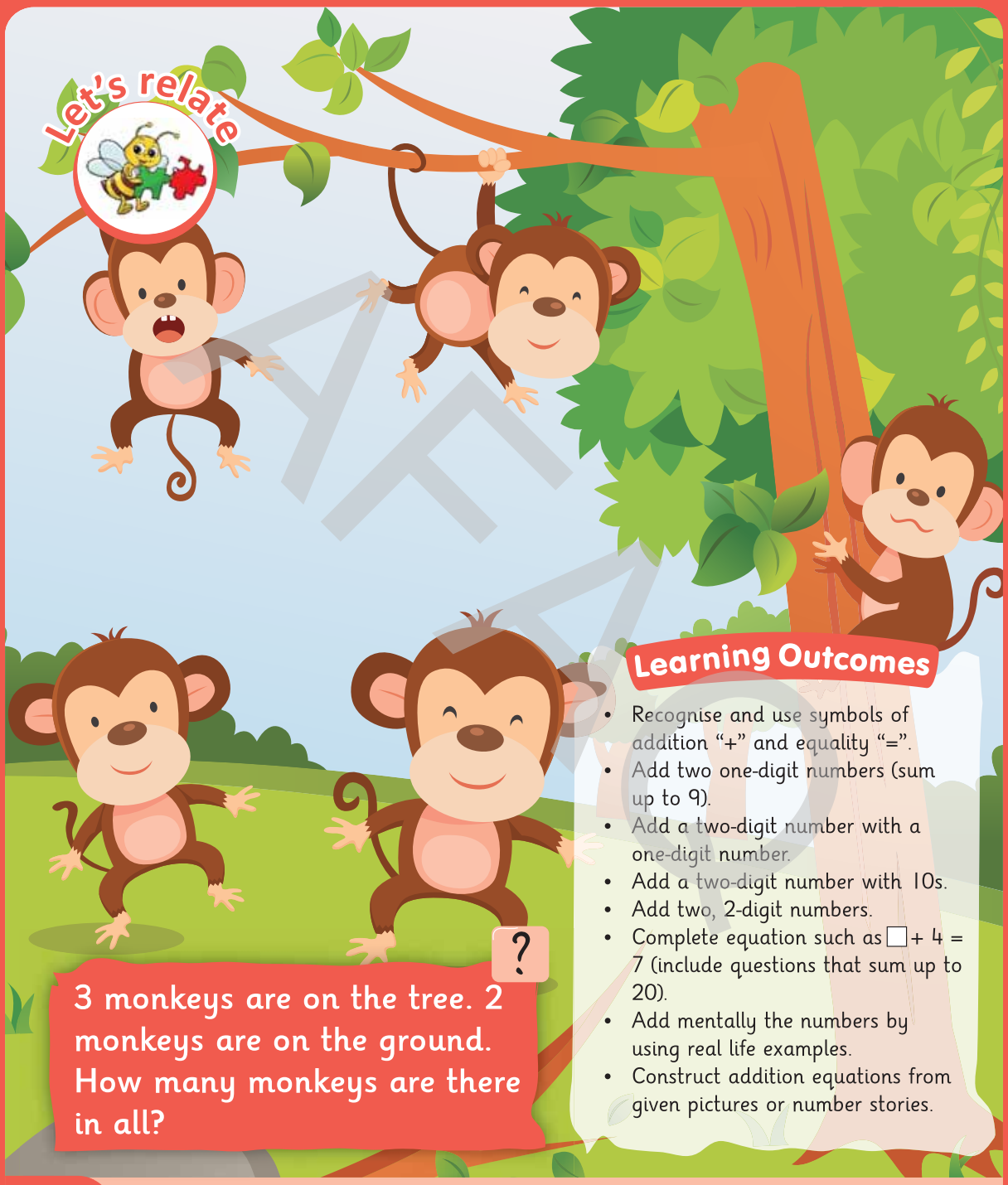
10. Write the following numbers in decreasing order.

60 16 26 76 99

39 37 31 36 32

Unit 2

Addition



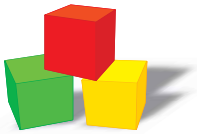
Learning Outcomes

- Recognise and use symbols of addition "+" and equality "=".
- Add two one-digit numbers (sum up to 9).
- Add a two-digit number with a one-digit number.
- Add a two-digit number with 10s.
- Add two, 2-digit numbers.
- Complete equation such as □ + 4 = 7 (include questions that sum up to 20).
- Add mentally the numbers by using real life examples.
- Construct addition equations from given pictures or number stories.

Teaching Point: For effective teaching and learning, feel free to use 'Urdu' as a medium of instruction to explain the concepts.

Addition

I have 3 blocks.



I have 4 blocks.

3 and 4 equals 7

Can we show it in another way?

Yes, we can use + and = to write it.

3 + 4 = 7

Key fact

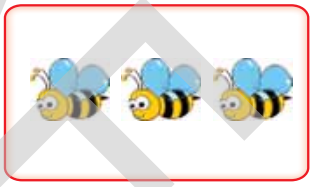
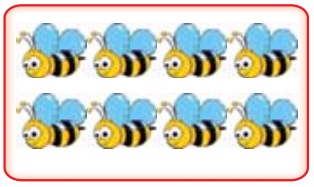
Addition is putting things together. We use the '+' sign to add. We read it as 'plus'. '=' means 'equals to'.

Teaching Point: Use wooden blocks or index cards of symbols + and = with number cards to demonstrate their correct placement.

 and  make 

4	and	2	equals	6

4	+	2	=	6

  make 

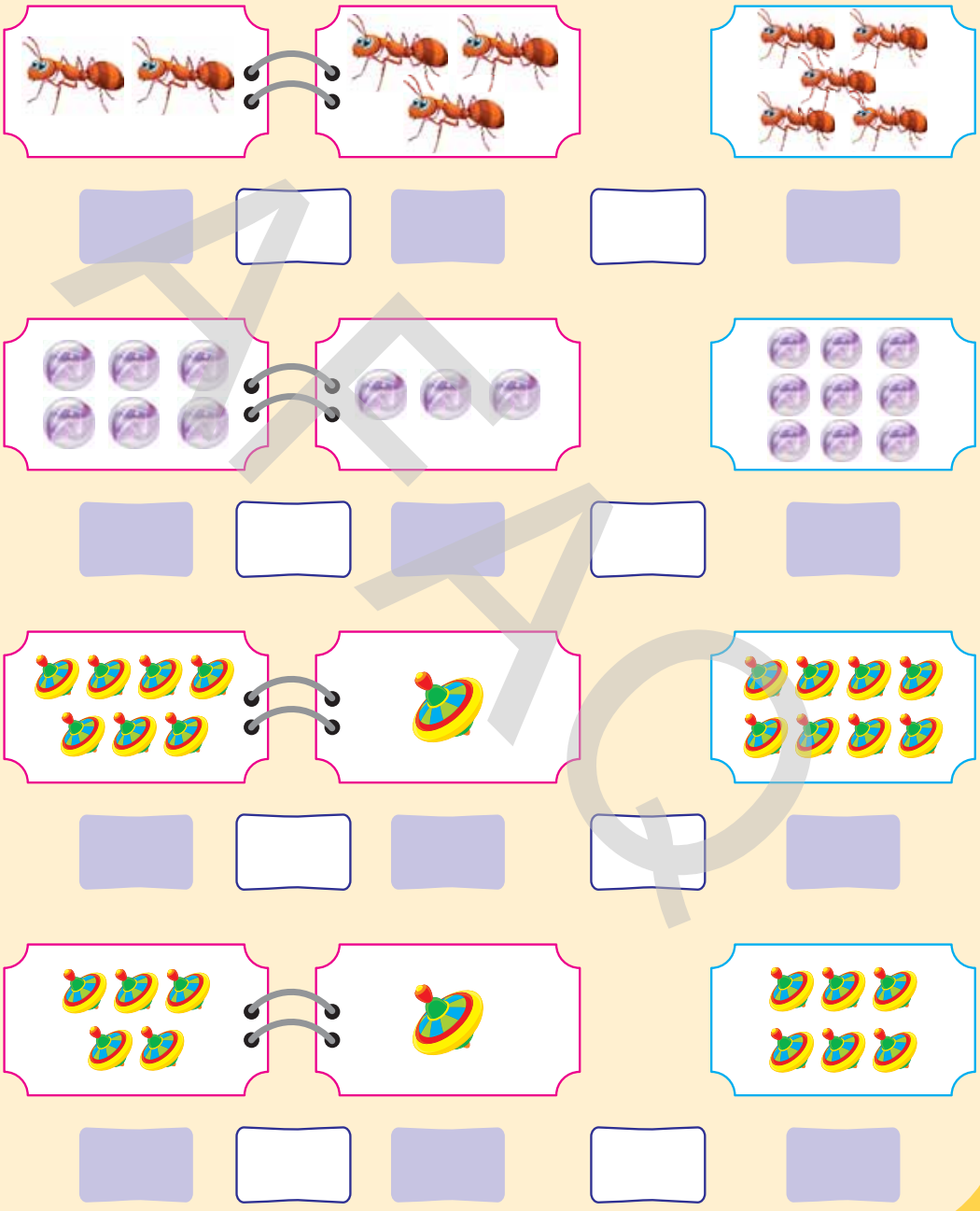
5	and	3	equals	8

5	+	3	=	8

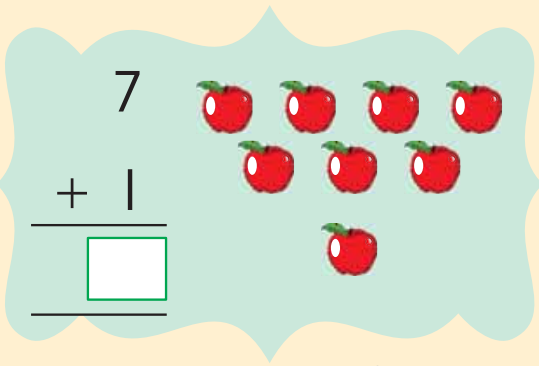
6	
+ 1	
7	

2	
+ 2	
4	

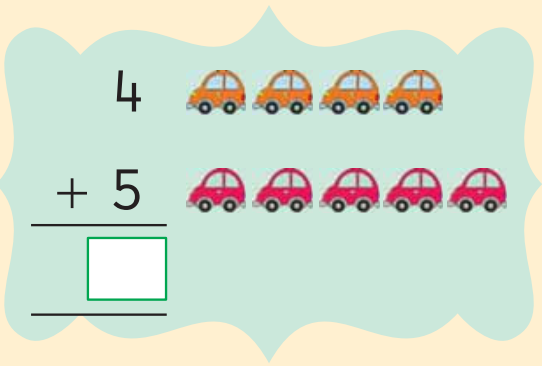
1. Count and add. Then use the symbol '+' and write the correct answer.



2. Count and add.



$$\begin{array}{r} 7 \\ +\ 1 \\ \hline \square \\ \hline \end{array}$$



$$\begin{array}{r} 4 \\ +\ 5 \\ \hline \square \\ \hline \end{array}$$

3. Look at the pictures and fill in the boxes.

☐ birds are flying.

☐ birds are sitting.

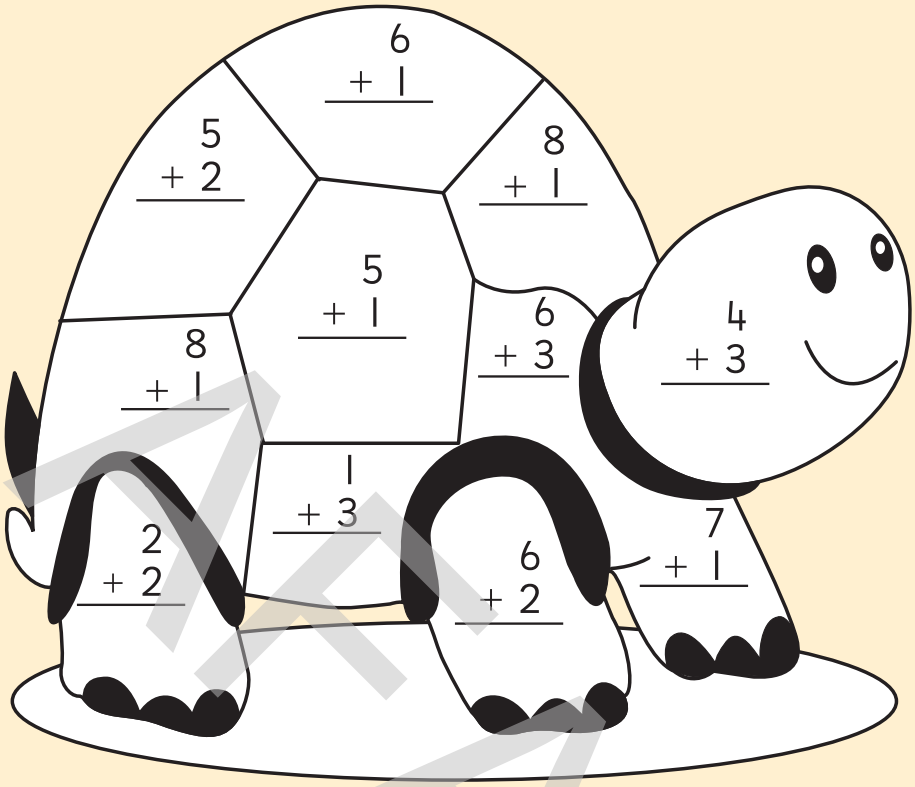
☐ + ☐ = ☐

There are ☐ birds altogether.

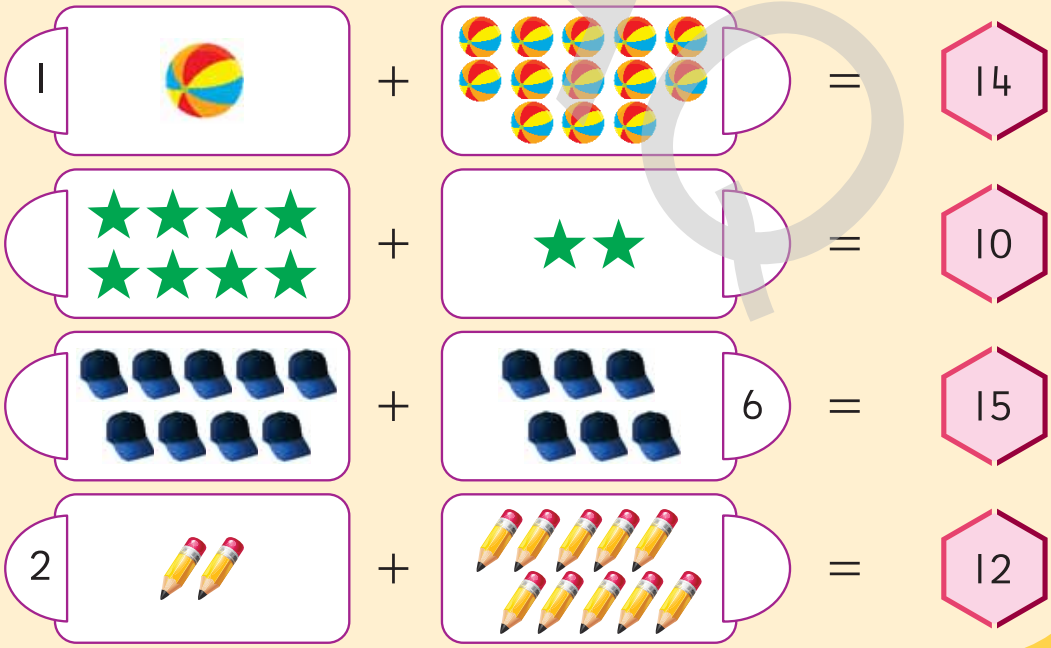
4. Look at the picture and fill in the boxes.

☐ + ☐ = ☐

5. Add and colour the turtle.

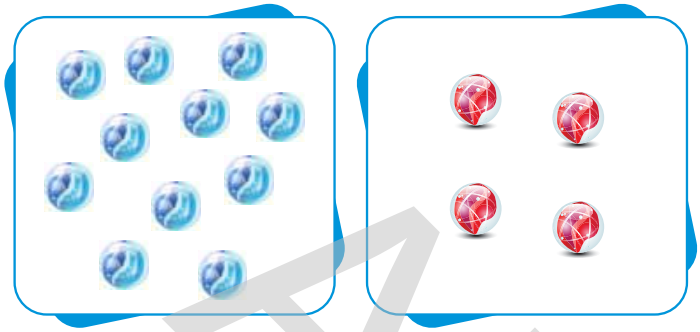


6. Fill in the boxes with correct numbers.



Adding 2-digit Numbers to 1-digit Numbers

Nida had 11 blue marbles. Her brother gave her 4 red marbles. How many marbles does she have now?



11
+
4

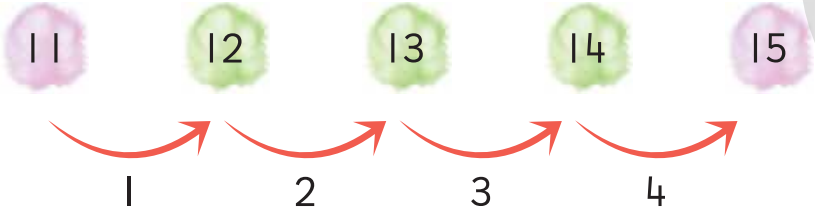
Tens	Ones
1	5

		T	O
Blue marbles	=	1	1
Red marbles	= +		4
Total marbles	=	1	5

Step I: Add ones to ones.
1 one + 4 ones
= 5 ones

Step II: Add tens to tens.
1 ten + 0 tens
= 1 ten.

We can also find the answer using forward counting.
Let us start at 11 and count forwards 4.



So, Nida has 15 marbles now.

Teaching Point: Call a few students to the front of the class and give them number cards (according to the example). Ask them to loudly count forwards looking at the numbers and tell the answer.

1. Add the following.

T	O
1	5
+	4

T	O
3	0
+	5

T	O
4	1
+	8

T	O
2	2
+	5

T	O
8	5
+	4

T	O
6	2
+	7

T	O
1	3
+	6

T	O
2	0
+	9

T	O
4	6
+	2

T	O
5	4
+	5

T	O
5	1
+	6

T	O
9	5
+	3

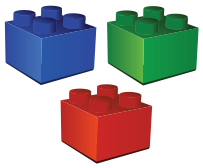
2. There are 62 red hair clips and 7 blue hair clips. How many hair clips are there altogether?

		T	O
Red hair clips	=		
Blue hair clips	= +		
Total hair clips	=		

Adding 2-digit Numbers to 2-digit Numbers

Adding 2-digit number and 10s

Ali had 59 bricks of Lego. His sister gave him 30 more bricks of Lego. How many Lego bricks does Ali have in total now?



		T	O
Lego bricks Ali had	=	5	9
Lego bricks given by sister	= +	3	0
Total Lego bricks	=	8	9

Step I: Add ones to ones.
9 ones + 0 ones = 9 ones.

Step II: Add tens to tens.
5 tens + 3 tens = 8 tens.

Let us add the number of Lego bricks mentally.

Step I: Separate tens and ones.
59 is 50 + 9
Step II: Add the tens and ones separately.
Step III: Add the results.

59 + 30 = 50 + 9 + 30

59 + 30 = 80 + 9 = 89

So, Ali has 89 Lego bricks now.

Teaching Point: To develop mental calculation, use ones and tens flash cards. Help students in separating the ones and tens and then add the parts separately.

Adding 2-digit Numbers to 2-digit Numbers

I have two storybooks. One has 35 pages and the other has 22 pages. How many pages do both books have altogether?

		T	O
Pages in one story book	=	3	5
Pages in other story book	= +	2	2
Total pages	=	5	7

Step I: Add ones to ones.
9 ones + 0 ones = 9 ones.

Step II: Add tens to tens.
5 tens + 3 tens = 8 tens.

Let us add the number of pages mentally.

35 + 22 = 30 + 5 + 20 + 2

35 + 22 = 50 + 7= 57

So, there are 57 pages in the storybooks altogether.

Step I: Separate tens and ones.
35 is 30 + 5
22 is 20 + 2
Step II: Add the tens and ones separately.
Step III: Add the results.

Teaching Point: Encourage students to tell a few short number stories involving addition. Demonstrate once for guidance.

1. Add the following.

a


TO
23
+ 31

b


TO
45
+ 20

c


O
9
+ 9

d


TO
72
+ 5

e


TO
65
+ 23

f


TO
12
+ 77

g


TO
63
+ 14

h


TO
29
+ 50

i


TO
30
+ 20

2. Talha found 41 seashells and Sonia found 50 seashells on the beach. How many seashells did they find altogether?

		T	O
Talha's seashells	=		
Sonia's seashells	= +		
Total seashells	=		

I have learnt

Word Board

- Add
- Plus
- Equal
- Together
- In total
- Altogether

- Addition is putting things together.
- '+' sign is used to add. It is read as 'plus'.
- '=' means 'equals to'.
- When zero is added to a number, the number remains unchanged.
- To add 2-digit numbers, first add the ones and then add the tens.
- To add numbers mentally, use the forward counting method or separate ones and tens.

Let us Review

1. Count and add the objects and write the correct number of objects.

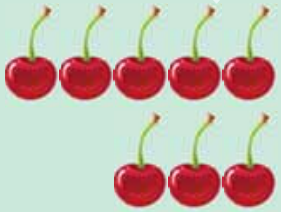
a)  and  make 

b)  and  make 

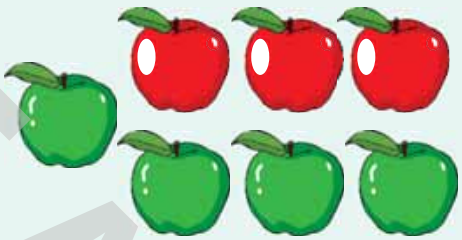
2. Count and add.

$$\begin{array}{r} 2 \\ +\ 4 \\ \hline \square \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +\ 3 \\ \hline \square \\ \hline \end{array}$$



3. Look at the objects and fill in the boxes.



☐ Apples are green.

☐ Apples are red.

☐ + ☐ = ☐

There are ☐ apples altogether.

4. Complete the following equations.

a) 9 + ☐ = 17 b) ☐ + 5 = 11 c) 11 + 7 = ☐

d) 4 + ☐ = 10 e) ☐ + 2 = 9 f) 12 + 7 = ☐

g) ☐ + 10 = 19 h) 3 + ☐ = 6 i) 1 + ☐ = 5

AEAQ

5. Add the following.

T	O
	2
+	3

T	O
	5
+	4

T	O
2	0
+	6

T	O
4	0
+	4

T	O
2	0
+ 7	0

T	O
4	0
+ 5	0

T	O
3	1
+ 3	7

T	O
6	4
+ 2	4

6. Asma bought 15 candy bars and Asim bought 4 candy bars. How many candy bars did they buy altogether?

		T	O
Number of candy bars Asma bought	=		
Number of candy bars Asim bought	= +		
Total number of candy bars	=		

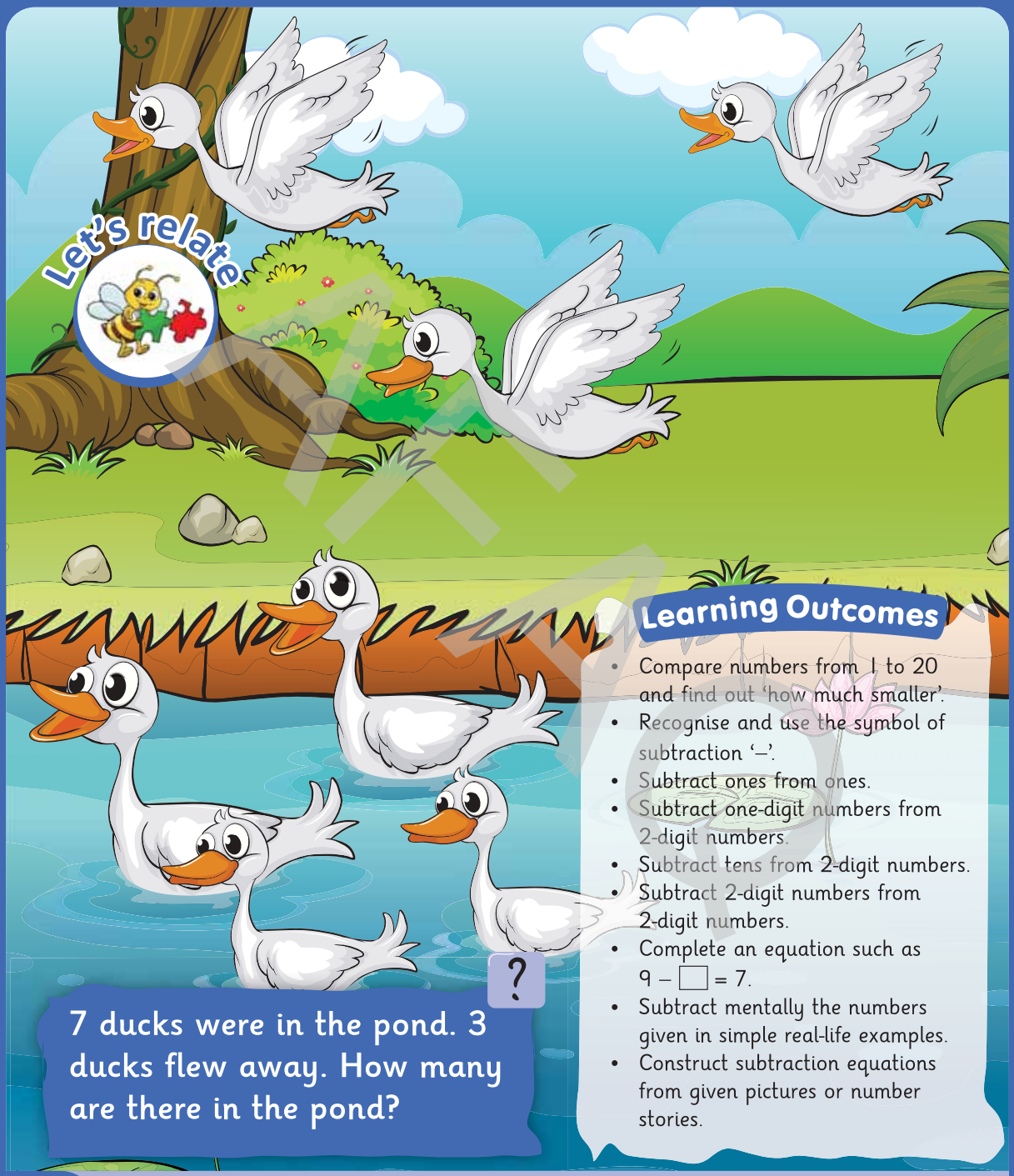
7. Zain had 42 stickers. He bought 35 more stickers. How many stickers does he have altogether?

		T	O
Number of stickers Zain had	=		
Number of stickers he bought	= +		
Total number of stickers	=		

TEACHER

Unit 3

Subtraction



7 ducks were in the pond. 3 ducks flew away. How many are there in the pond?

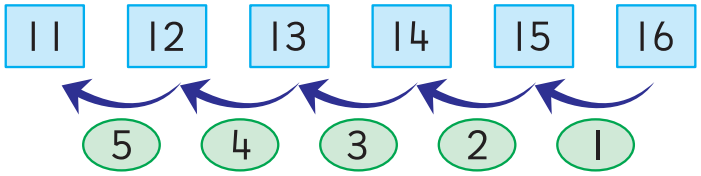
Learning Outcomes

- Compare numbers from 1 to 20 and find out 'how much smaller'.
- Recognise and use the symbol of subtraction '–'.
- Subtract ones from ones.
- Subtract one-digit numbers from 2-digit numbers.
- Subtract tens from 2-digit numbers.
- Subtract 2-digit numbers from 2-digit numbers.
- Complete an equation such as 9 – ☐ = 7.
- Subtract mentally the numbers given in simple real-life examples.
- Construct subtraction equations from given pictures or number stories.

Teaching Point: For effective teaching and learning, feel free to use 'Urdu' as a medium of instruction to explain the concepts.

How Much Less

Let us count backwards from 16 to 11.



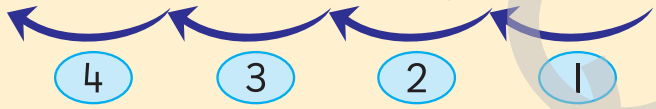
It means 11 is 5 less than 16.

1. Count and write how much less one is from the other.

a) 17 18 19 20

So, 17 is _____ less than 20.

b) 3 _____ _____ _____ 7



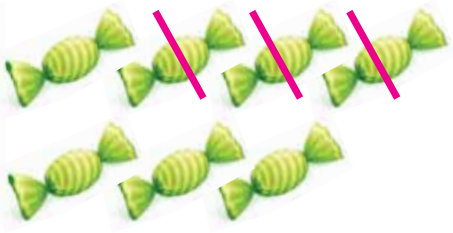
So, 3 is _____ less than 7.

c) 8 _____ _____ _____ _____ _____ 14

So, 8 is _____ less than 14.

Subtraction

I had 7 candies. My sister took 3 of them.



How many candies are left with my brother?

7	take away	3	equals	4
7	–	3	=	4

Key fact

Subtraction means taking away. We use the "–" sign to subtract. We read it as 'minus'. '=' means 'equals to'.

Teaching Point: Use index cards of symbols – and = with number cards to demonstrate their correct placement.

5	take away	3	equals	2
5	–	3	=	2

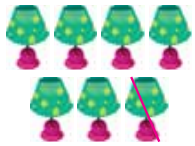
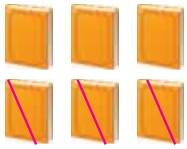
7	take away	2	equals	5
7	–	2	=	5

4	take away	3	equals	1
4	–	3	=	1

What is 5 take away 5?

When zero is subtracted from any number, the number remains unchanged.

AFAQ

5 − 4 	7 − 1 	6 − 3 
1	6	3

Take away 4

How many left? 1

Take away 3

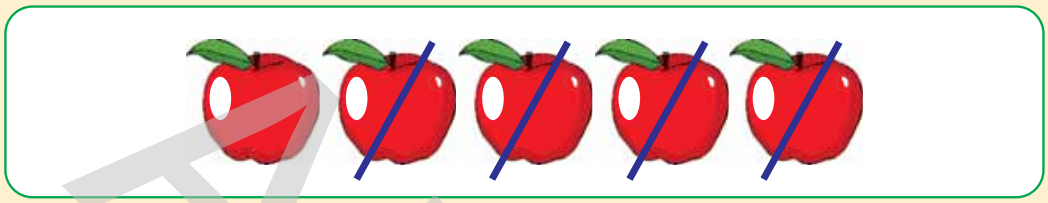
How many left? 3

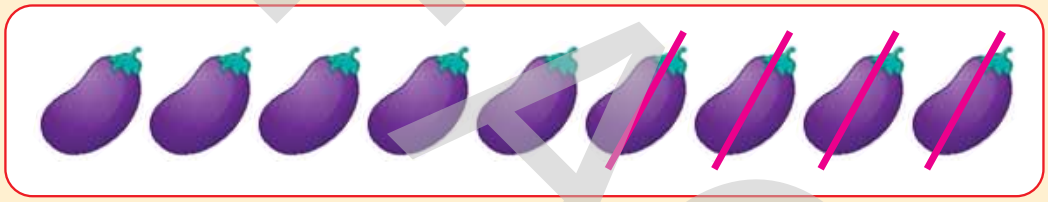
1. Count and use the symbols '–' and '=' and write the correct answer.

		2		4

Teaching Point: Place some concrete objects on the table. Take away objects one by one and ask: "How many are there now?"

8				2





2. Cross out and write the answer.

$$\begin{array}{r} 7 \\ -\ 5 \\ \hline \square \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -\ 2 \\ \hline \square \\ \hline \end{array}$$

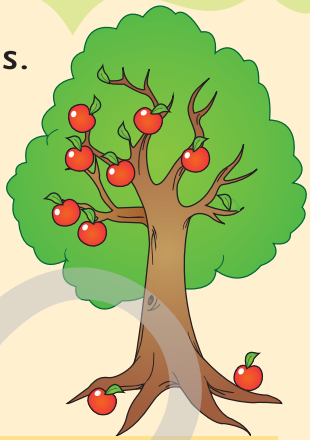
8 − 3 = ☐

9 − 4 = ☐

6 − 5 = ☐

5 − 1 = ☐

3. Look at the picture and fill in the boxes.



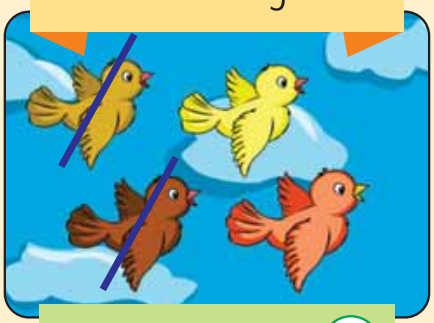
☐ Apples were on the tree.

☐ Apples fell down.

☐ − ☐ = ☐

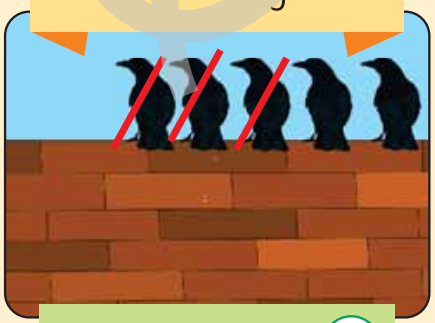
☐ apples are left on the tree.

Take away 2



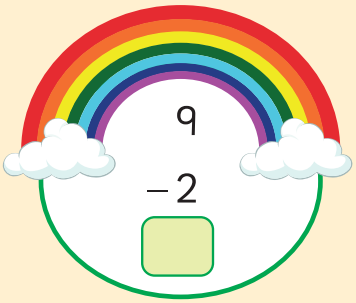
How many left? ◯

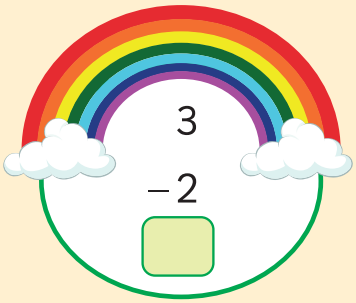
Take away 3

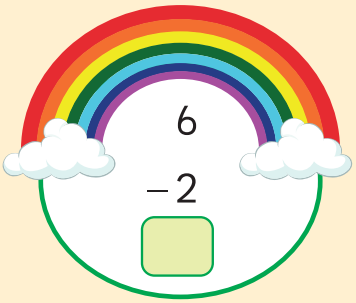


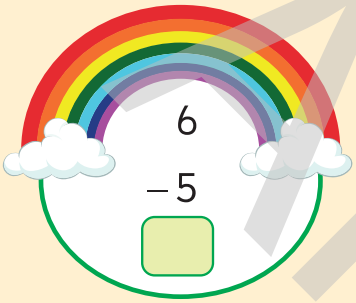
How many left? ◯

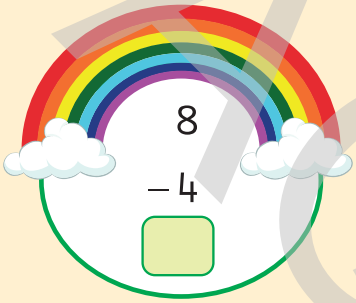
4. Subtract.

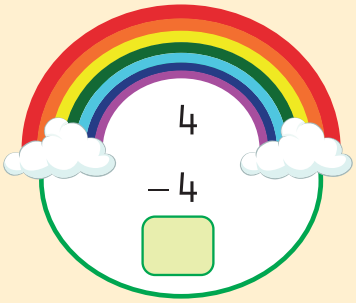


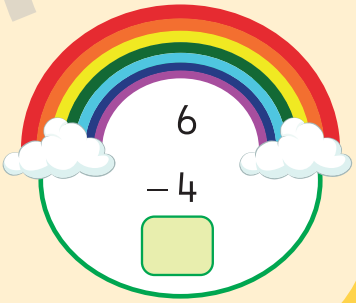








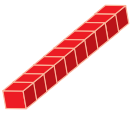
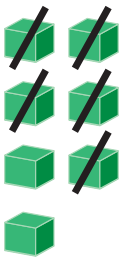




Subtracting 1-digit Numbers from 2-digit Numbers

Sara saw 17 butterflies in the garden. 5 of them flew away. How many butterflies are left?

	T	O
Total butterflies =	1	7
Flew away = −		5
Butterflies left =	1	2

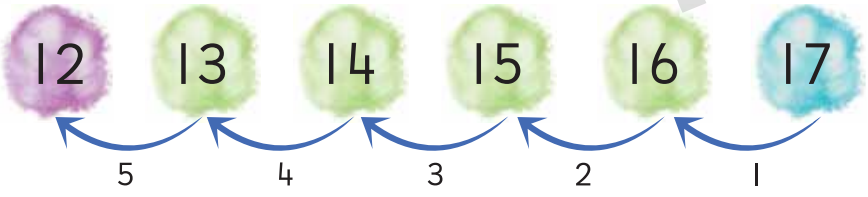
Tens	Ones
	
1	2

Step I: Subtract ones from ones.
7 ones − 5 ones = 2 ones.

Step II: Subtract tens from tens.
1 ten − 0 tens = 1 ten.

We can subtract the numbers by backward counting.

Let us start at 17 and count backwards 5 numbers.



So, there are 12 butterflies left.

Teaching Point: Call a few students to the front of the class and give them number cards (according to the example). Ask them to loudly count backwards by looking at the numbers and tell the answer.

1. Subtract the following.

	T	O
a	9	3
	−	3

	T	O
b	9	5
	−	2

	T	O
c	3	8
	−	0

	T	O
d	8	0
	−	0

	T	O
e	8	6
	−	2

	T	O
f	8	1
	−	1

	T	O
g	8	3
	−	2

	T	O
h	1	6
	−	4

	T	O
i	4	3
	−	0

	T	O
j	6	3
	−	2

	T	O
k	7	4
	−	2

	T	O
l	9	9
	−	3

2. Maria had 27 stickers. She gave 8 to Hamza. How many stickers are left?

		T	O
Total stickers	=		
Given to Hamza	= _		
Stickers left	=		

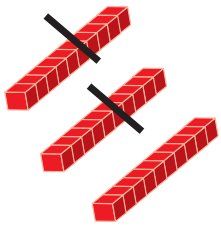
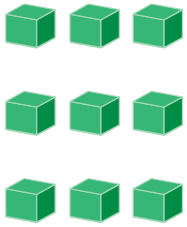
Teaching Point: Encourage students to tell a few short number stories involving subtraction. Demonstrate once for guidance.

Subtracting 2-digit Numbers from 2-digit Numbers

Subtracting 10s from 2-digit numbers

There are 39 sheep on a farm. 20 of them are black. How many white sheep are there?

		T	O
Total sheep	=	3	9
Black sheep	= −	2	0
White sheep	=	1	9

Tens	Ones
	
1	9

Step I: Subtract ones from ones.
3 tens − 2 tens = 1 ten

Step II: Subtract the tens from tens.
9 ones − 0 ones = 9 ones

Let us subtract the numbers mentally.

Step I: Separate tens and ones in 39.
39 is 30 + 9.
Step II: Subtract the tens.
Step III: Add 9 to the result.

Write 39 as tens and ones.

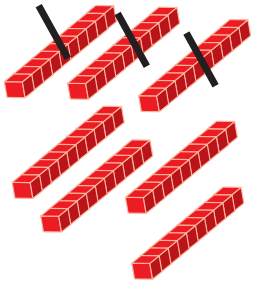
30 − 20 = 10
9 + 10 = 19

There are 19 white sheep.

Subtracting 2-digit numbers from 2-digit numbers

Ali had 72 marbles. He lost 31. How many marbles are left with Ali?

		T	O
Total marbles	=	7	2
Marbles lost	= −	3	1
Marbles left	=	4	1

Tens	Ones
	
4	1

Step I: Subtract the ones from ones.
2 ones − 1 one = 1 one

Step II: Subtract the tens from tens.
7 tens − 3 tens = 4 tens

Let us subtract the number of marbles mentally.

Step I: Separate tens and ones.
72 is 70 + 2. 31 is 30 + 1.
Step II: Subtract the tens and ones separately.
Step III: Add the results.

72 = 70 + 2
31 = 30 + 1

Subtract the tens: 70 − 30 = 40
Subtract the ones: 2 − 1 = 1
Add the results: 40 + 1 = 41

So, there are 41 marbles left.

Teaching Point: To develop mental calculation, use ones and tens flash cards. Help students separate ones and tens and then add/subtract the parts separately.

1. Subtract.

a)
	T	O
	1	6
−	1	3

b)
	T	O
	4	7
−	2	2

c)
	T	O
	5	1
−	3	1

d)
	T	O
	7	7
−	2	5

e)
	T	O
	3	6
−	3	5

f)
	T	O
	8	8
−	5	6

g)
	T	O
	7	9
−	6	5

h)
	T	O
	9	9
−	2	9

2. There were 48 eggs in a basket. 16 of them were broken. How many eggs are unbroken?

		T	O
Total eggs	=		
Broken eggs	= −		
Unbroken eggs	=		

3. Seema had 27 hair clips. She gave 16 to her friend. How many hair clips are left?

		T	O
Total hair clips	=		
Given to friend	= −		
Hair clips left	=		

I have learnt

Word Board

- Take away
- Subtract
- Minus
- Equal
- Left

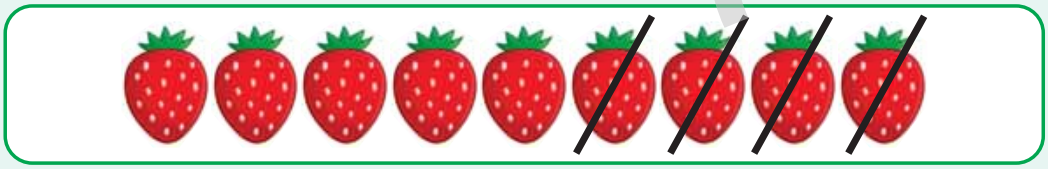
- Subtraction means taking away.
- '–' sign is used to show subtraction. It is read as 'minus'. '=' means 'equals to'.
- When a number is subtracted itself, the answer is always 0.
- When zero is subtracted from any number, the number remains unchanged.
- To subtract 2-digit numbers, first subtract the ones from ones and then the tens from tens.
- To subtract numbers mentally, use backward counting method or separate ones and tens.

Let us Review

1. Count the objects and write the correct number.

☐ take away ☐ equals ☐

☐ – ☐ = ☐



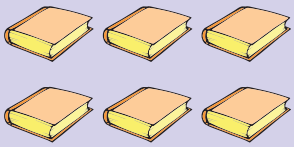
☐ take away ☐ equals ☐

☐ – ☐ = ☐

2. Subtract by crossing out.

$$\begin{array}{r} 8 \\ -\ 4 \\ \hline \square \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -\ 6 \\ \hline \square \\ \hline \end{array}$$



3. Look at the objects and fill in the boxes.

☐ glasses are there.

☐ glasses are broken.

☐ – ☐ = ☐

☐ glasses remain undamaged.

4. Solve the following.

a

T	O
3	4
–	2

b

T	O
4	9
– 4	6

c

T	O
8	9
– 4	9

d

T	O
5	7
–	3

e

T	O
7	7
– 5	3

f

T	O
9	4
– 6	3

g

T	O
1	9
–	9

h

T	O
2	8
– 1	2

i

T	O
3	0
– 2	0

5. Complete the following.

a. $9 - \square = 3$ b. $10 - \square = 4$ c. $\square - 8 = 4$

d. $14 - 10 = \square$ e. $8 - 0 = \square$ f. $\square - 6 = 15$

g. $18 - \square = 1$ h. $\square - 8 = 3$ i. $6 - \square = 4$

6. There were 63 candles. 41 candles burned out. How many candles were left?

		T	O
Total number of candles	=		
Number of candles burned out	=	−	
Number of candles left	=		

7. There were 97 pears in a box. 12 pears were eaten. How many pears are left?

		T	O
Total number of pears	=		
Number of pears eaten	=	−	
Number of pears left	=		

Unit 4

Measurements

Learning Outcomes

- Compare the heights/lengths/weights of two or more objects using the terms:
  - long, longer, longest.
  - short, shorter, shortest.
  - tall, taller, tallest.
  - high, higher, highest.
  - heavy, heavier, heaviest.
  - light, lighter, lightest.

Teaching Point: For effective teaching and learning, feel free to use 'Urdu' as a medium of instruction to explain the concepts.

Long, Longer, Longest

My pencil is **long.**

My pencil is **longer.**

My pencil is the **longest.**

Short

Shorter

Shortest

Compare your pencil with 2 of your friends. Who has the longest one? Who has the shortest one?

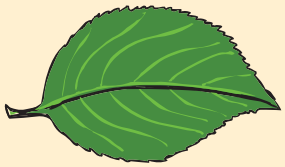
Teaching Point:

- First give students concrete objects and then flash cards of objects, such as long and short pencils, strips of paper or strings, ribbons to compare lengths.
- Make them understand that these are relative terms.

1. Tick (✓) the longest object and cross (✗) the shortest one.

2. Tick (✓) the shortest object and cross (✗) the longest one.

3. Draw a longer leaf.



4. Draw a shorter crayon.

Teaching Point: Use different objects from the class and ask students to differentiate short, shorter and shortest from these objects.

Tall, Taller, Tallest

Ali is tall.

Sara is taller.

Umar is the tallest.

Umar

Sara

Ali

Who is the tallest student in your class?

Short, Shorter, Shortest

Short

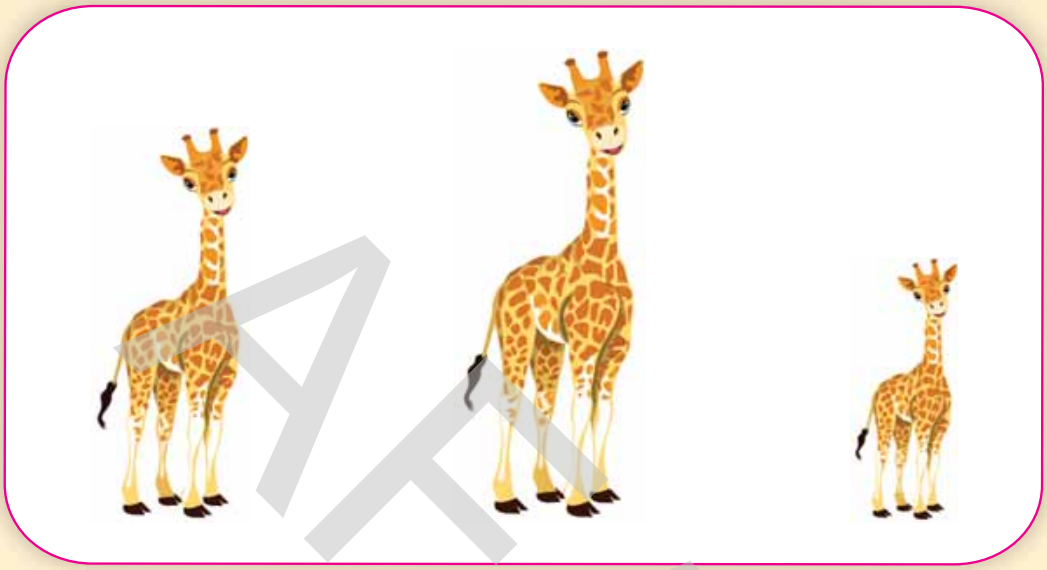
Shorter

Shortest

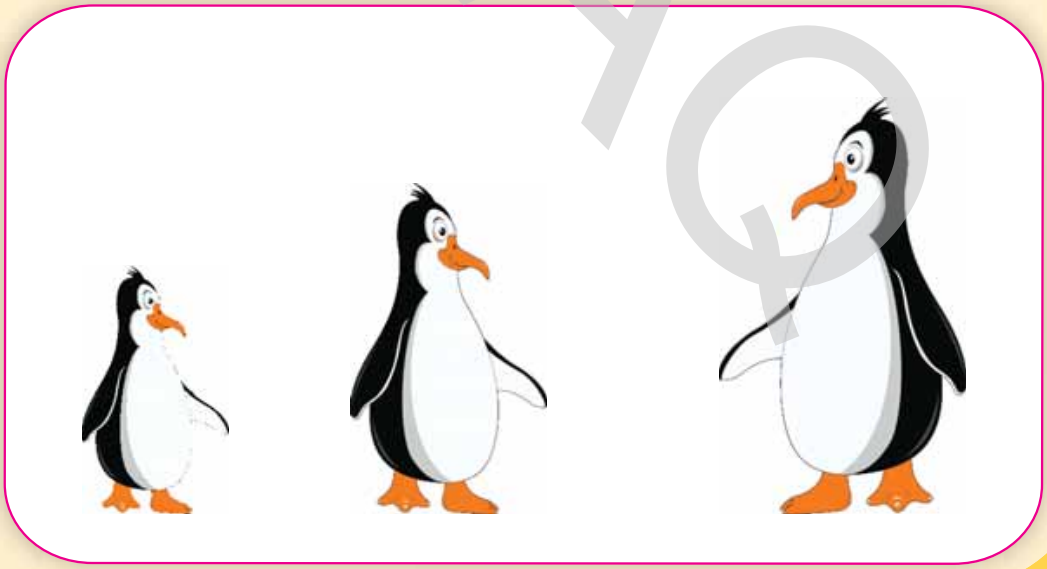
Teaching Point:

- First make 2 students stand side-by-side and ask the class to tell who is tall and who is short. Then call three students to come to the front and have them stand beside you. Compare their heights and oder them from the tallest to the shortest.
- Make them understand that these are relative terms.

1. Circle the tallest one.



2. Circle the shortest one.



Teaching Point: Distribute paper with 3 columns. Label the first column as "the shortest" and the last column as "the tallest". Distribute paper cut-outs of some short and tall objects and ask students to paste them in correct order.

High, Higher, Highest

High

Higher

Highest

High

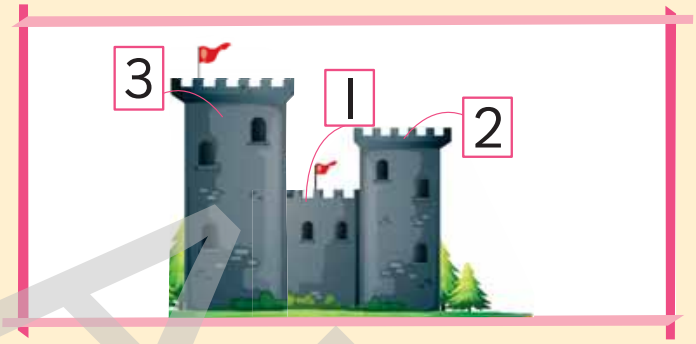
Higher

Highest

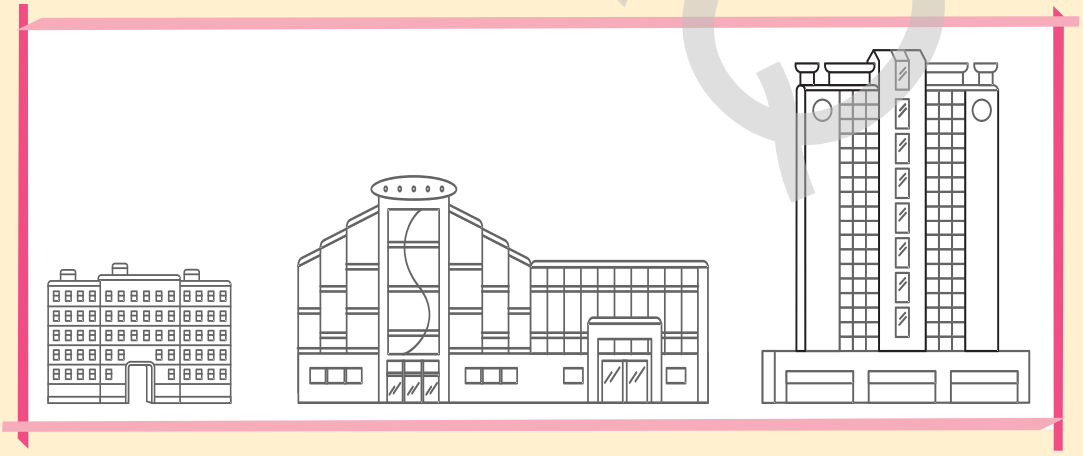
Teaching Point:

- Take kids for a walk outside the classroom. Show them some poles, pillars, buildings with different heights and have them use the terms high, higher and highest by comparing their heights.
- Make them understand that these are relative terms.

1. Write in order of 'high', 'higher' and 'highest' using 1, 2, 3.
First is done for you.



2. Colour the highest one.



Heavy, Heavier, Heaviest

Heavy

Heavier

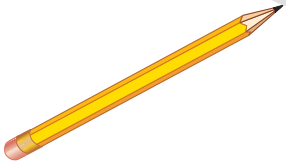
Heaviest

Mom's handbag is heavy.
My school bag is heavier.
The suitcase is the heaviest.

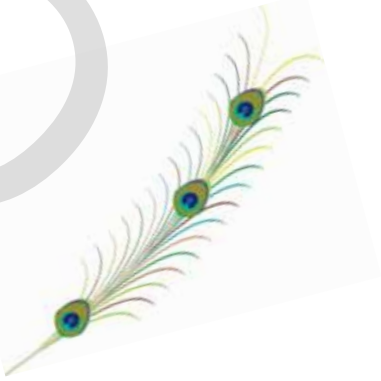
Check Point

Which one is heavier, your chair or your bag?

Light



Lighter

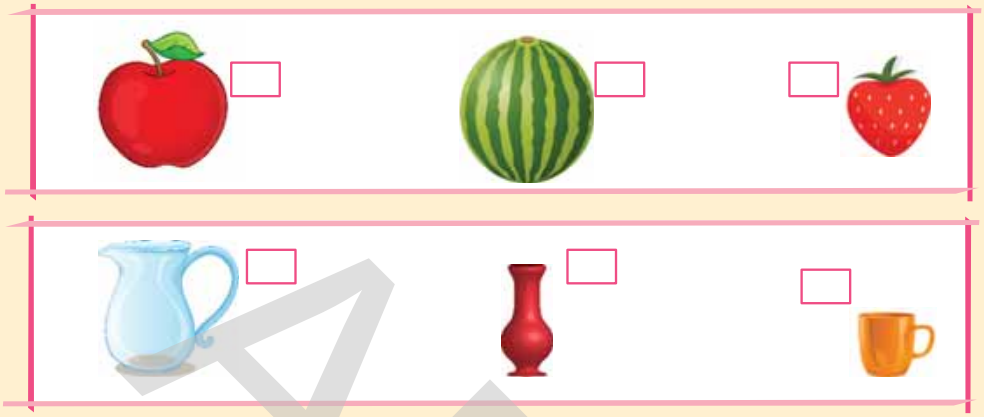


Lightest

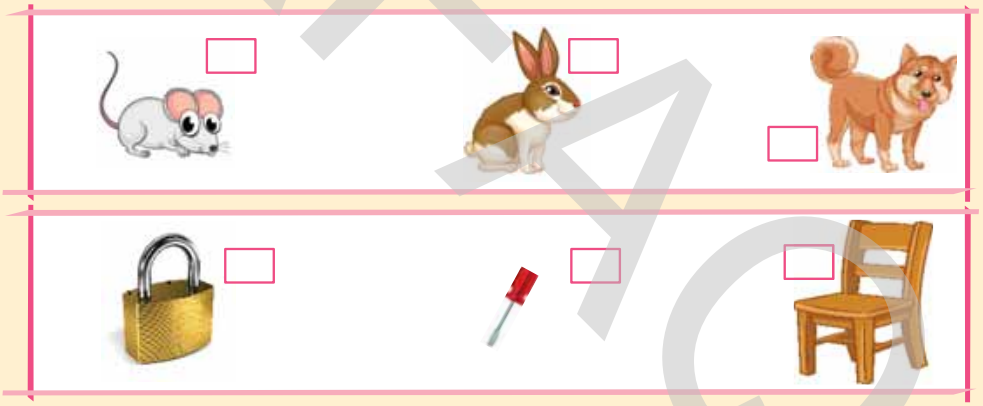
Teaching Point:

- Provide some heavy and light items to students and ask them to feel them by holding one heavy and one light item in hands. Later ask them to pick up 3 objects and order them from the lightest to the heaviest.
- Make them understand that these are relative terms.

1. Tick (✓) the heaviest.



2. Tick (✓) the lightest.



3. Draw something lighter than the given object.

I have learnt

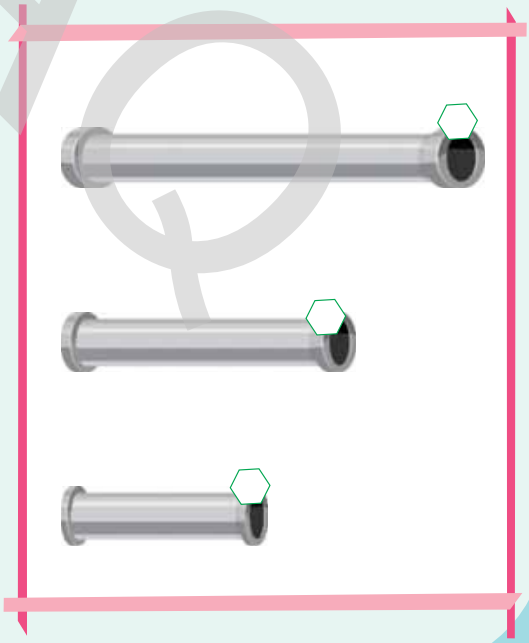
- Lengths of objects can be compared using the terms:
  - long, longer, longest.
  - short, shorter, shortest.
  - tall, taller, tallest.
  - high, higher, highest.
- Masses of objects can be compared using the terms:
  - heavy, heavier, heaviest.
  - light, lighter, lightest.

Word Board

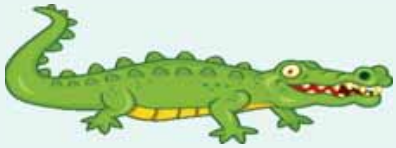
- Long, longer, longest
- Short, shorter, shortest
- Tall, taller, tallest
- High, higher, highest
- Heavy, heavier, heaviest
- Light, lighter, lightest

Let us Review

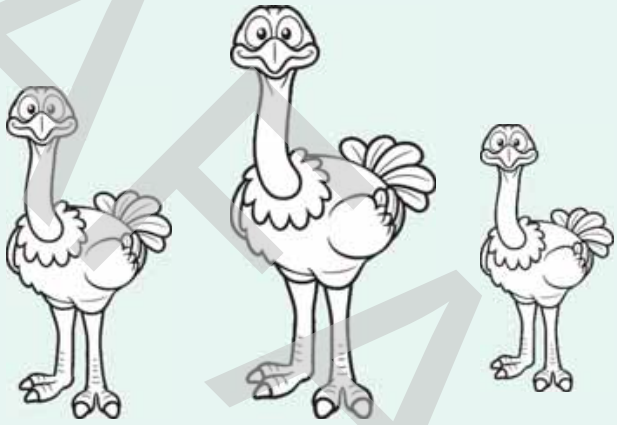
1. Tick (✓) the shortest one.



2. Tick (✓) the longest one.

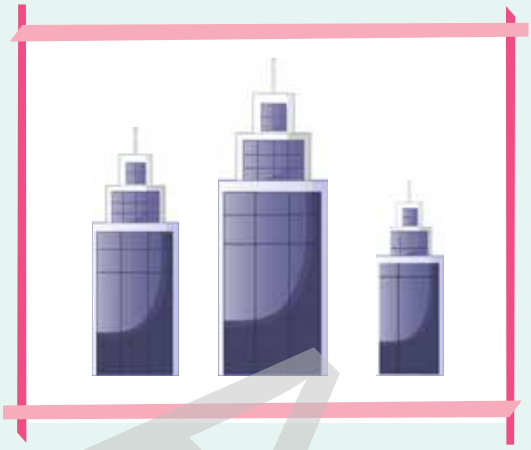


3. Colour the tallest one blue and the shortest one yellow.

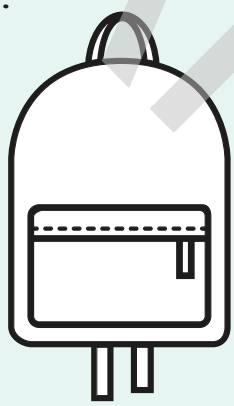


4. Circle the shortest and cross the tallest.

5. Circle the highest object.



6. Colour the 'lightest' object green and the 'heaviest' object blue.

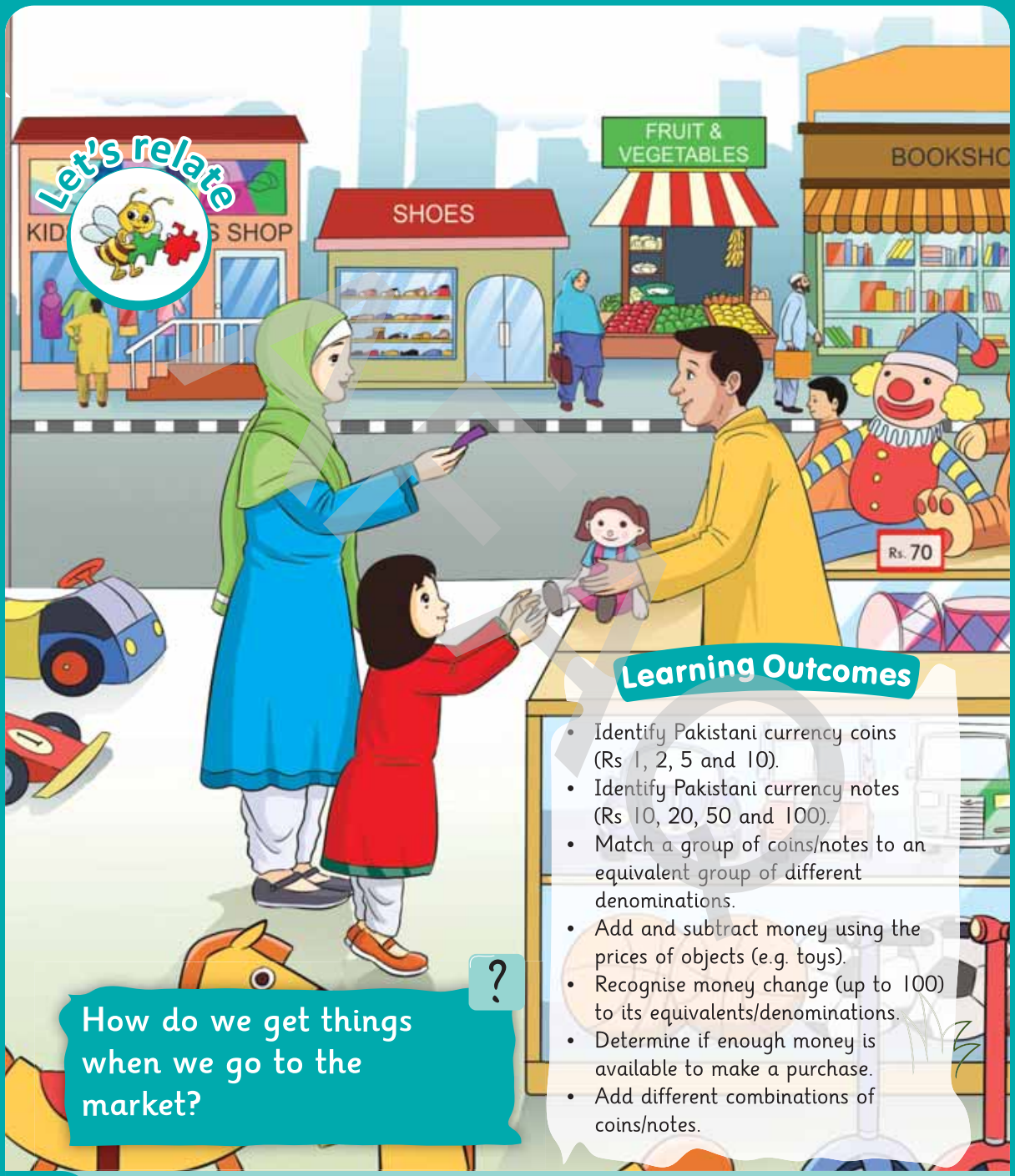


7. Draw a taller and the tallest ladder.

AEAQ

Unit 5

Money



Learning Outcomes

- Identify Pakistani currency coins (Rs 1, 2, 5 and 10).
- Identify Pakistani currency notes (Rs 10, 20, 50 and 100).
- Match a group of coins/notes to an equivalent group of different denominations.
- Add and subtract money using the prices of objects (e.g. toys).
- Recognise money change (up to 100) to its equivalents/denominations.
- Determine if enough money is available to make a purchase.
- Add different combinations of coins/notes.

How do we get things when we go to the market?

Teaching Point: For effective teaching and learning, feel free to use 'Urdu' as a medium of instruction to explain the concepts.

Coins and Notes

I want to buy some candies from the shop. How can I buy them?

You can use money (coins and notes) to buy candies or anything you want.

Let us observe coins and notes we use in Pakistan.

Front Back

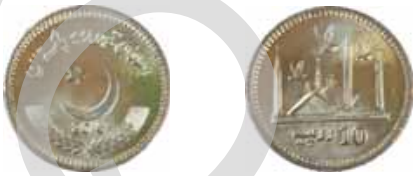
A 1-rupee coin

Front Back

A 2-rupee coin

Front Back

A 5-rupee coin



Front Back

A 10-rupee coin

Key fact

Coins are made of metal.

These are the notes we use in Pakistan.

Notes are made of paper.

Front Back

A 10-rupee note

Front Back

A 20-rupee note

Front Back

A 50-rupee note

Front Back

A 100-rupee note

Teaching Point: Tell students about the values of money using real coins and notes.

1. Write the value of each coin and note.

rupee

rupees

rupees

rupees

rupees

rupees

rupees

rupees

AEAO

Changing Money

Let us look at the different combinations of coins and notes.

Two 1-rupee coins make 2 rupees.

Rs 1 + Rs 1 = Rs 2

Four 5-rupee coins make 20 rupees.

Rs 5 + Rs 5 + Rs 5 + Rs 5 = Rs 20

Two 50-rupee notes make 100 rupees.

Rs 50 + Rs 50 = Rs 100

Teaching Point: Use real money / play money (coins and notes) and tell students about different ways of exchanging money with its equivalent denominations.

We can change any amount of money for different combinations of coins and notes.

One 5-rupee coin

Five 1-rupee coins

One 10-rupee note

Five 2-rupee coins

One 20-rupee note

Four 5-rupee coins

One 50-rupee note

Ten 5-rupee coins

One 100-rupee note

Ten 10-rupee notes

1. Complete the following.

a)  

One 10-rupee coin = ☐ 5-rupee coins.

b)  

One 10-rupee note = ☐ 2-rupee coins.

c)  

One 50-rupee note = ☐ 20-rupee notes

and ☐ 10-rupee note.

d)  

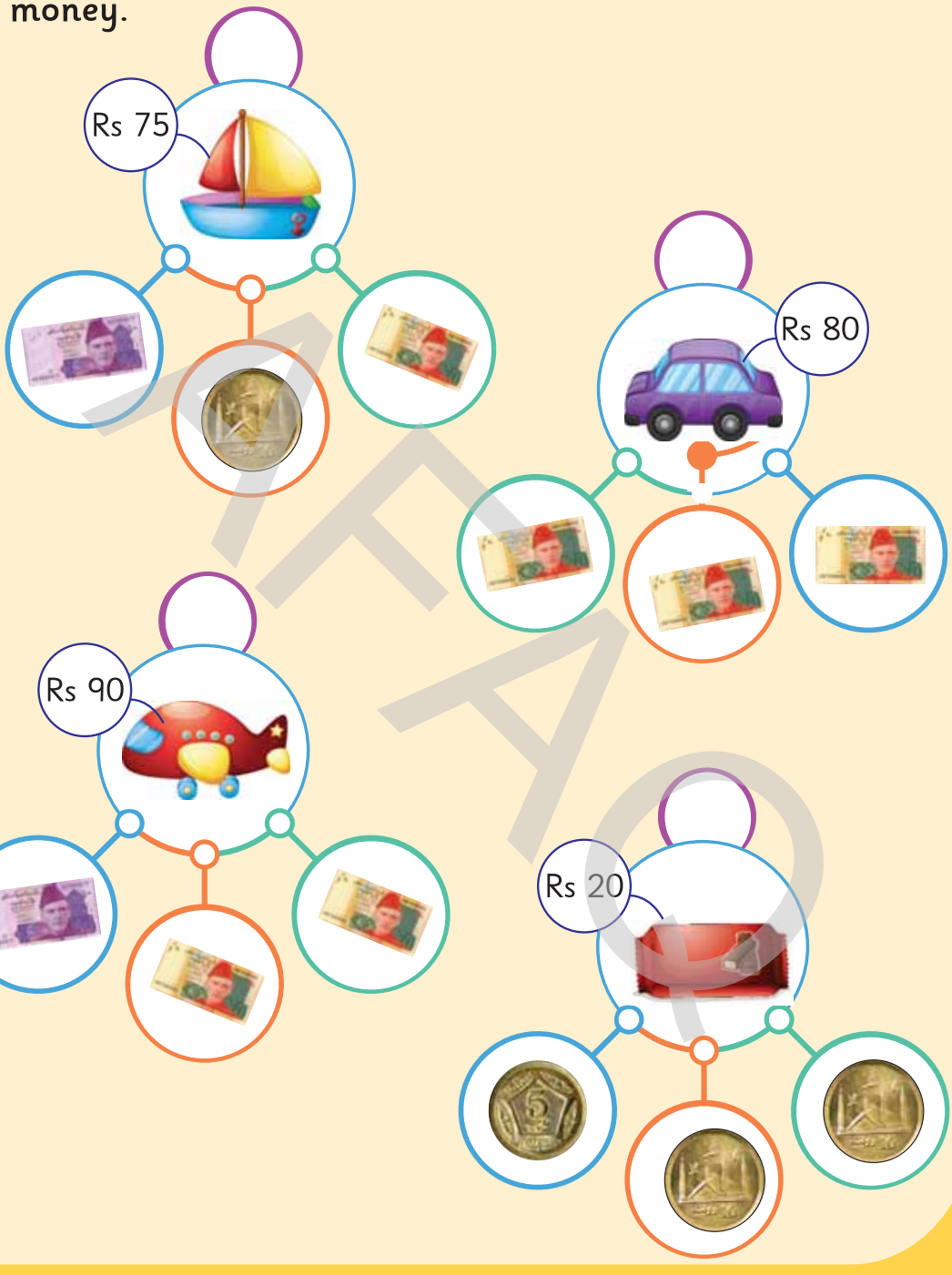
One 100-rupee note = ☐ 50-rupee notes.

2. Match the equal amounts.

Hint

First add the values of notes and coins and then match.

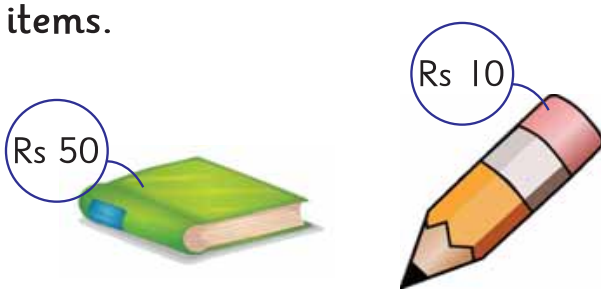
3. Tick (✓) the box if you can buy the objects with the given money.



Teaching Point: Use objects with price tags. Distribute coins and notes among students. Have them act as shopkeepers and customers. Let them guess if they can buy the items with the money they have.

Adding and Subtracting Prices

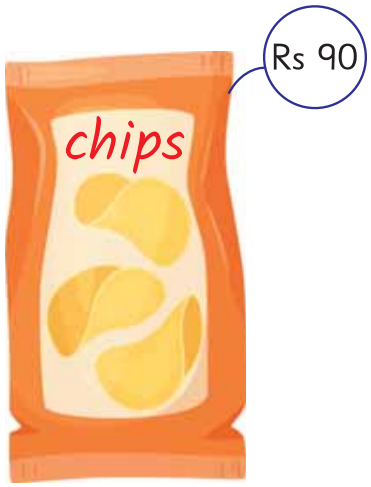
Look at these items.

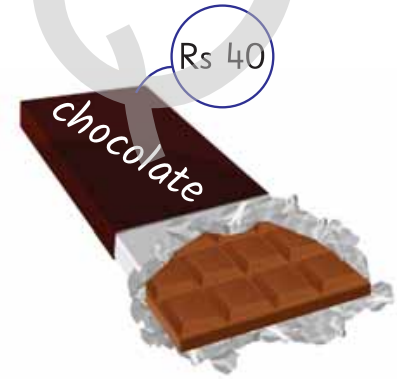


Ali buys a book and a pencil. How much money does he spend?

Cost of the book	=	Rs	5	0
Cost of the pencil	= +	Rs	1	0
Total cost	=	Rs	6	0

Look at these items.





Teaching Point: Use objects with price tags. Distribute play money (coins and notes) among students. Have them buy 2 objects. Let them guess the amount they need and the amount left with them after purchase.

Fahad has Rs 70 only. He wants to buy a pack of chips. How much more money does he need to buy the pack of chips?

Cost of the pack of chips	=	Rs	90
Total amount	= −	Rs	70
He needs another	=	Rs	20

If Fahad has Rs 95, how much will be left if he buys a chocolate?

1. Look at the objects and their prices. Then solve the problems.

a) Saima buys a cupcake and a candy bar. How much money does she spend?

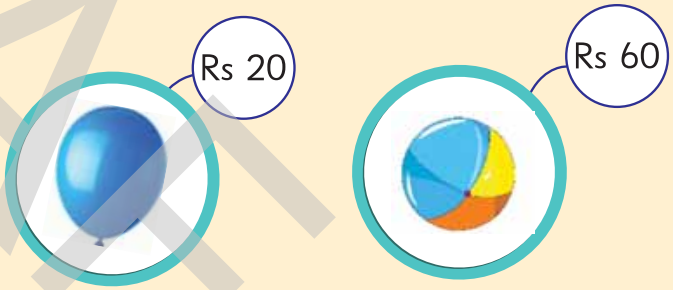
Cost of the cupcake	=	Rs	30
Cost of the candy bar	= +	Rs	15
Total money spent	=	Rs	

b) Hina buys a candy bar and a burger. How much money does she spend?

Cost of the candy bar = Rs ☐☐

Cost of the burger = + Rs ☐☐

Total money spent = Rs ☐☐



c) Waqas had Rs 80. He bought a ball. How much does he have left?

Total amount = Rs 8 0

Cost of the ball = – Rs 6 0

Amount left = Rs ☐☐

d) Sadia had Rs 50. She bought a balloon. What amount is left with her?

Total amount = Rs ☐☐

Cost of the balloon = – Rs ☐☐

Amount left = Rs ☐☐

I have learnt

- Money is used in the form of coins and notes to buy things we need.
- Coins are made of metal and notes are made of paper.
- Any amount of money can be changed for different combinations of coins and notes.

Word Board

- Coins
- Notes
- Money
- Amount

Let us Review

1. Write the correct number of coins and notes.

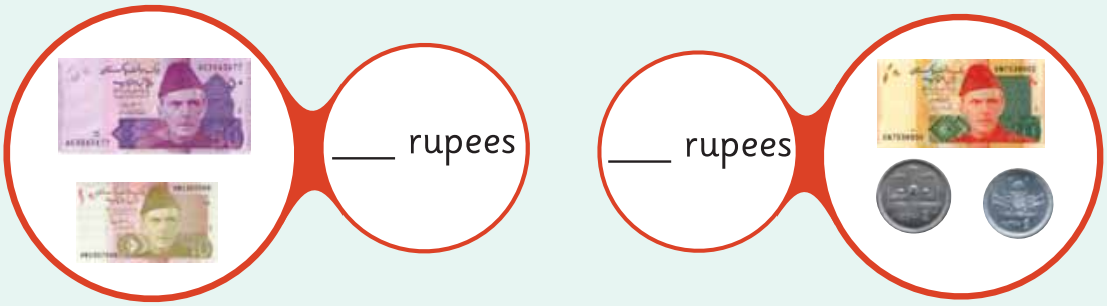
a)   

A 5-rupee coin can be changed for ☐ 1-rupee coins.

b)   

A 50-rupee note can be changed for ☐ 10-rupee notes.

2. Count and write the correct amounts.



3. Look at the objects and their prices. Then solve the problems.

a) Ali buys a toy train and a pack of cookies. How much money does he spend?

Cost of the toy train = Rs ☐☐

Cost of a pack of cookies = + Rs ☐☐

Total money spent = Rs ☐☐

b) Huma had Rs 80. She bought a mug. What amount is left with her?

Total amount = Rs ☐☐

Cost of the mug = – Rs ☐☐

Amount left = Rs ☐☐

Approved by National Curriculum Council,
Ministry of Federal Education & Professional Training,
Government of Pakistan vide Letter No. F. No 1(1) 17-NCC,
dated 2nd December 2019

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