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Preface

The New Syllabus Primary Mathematics (NSPM) series is designed and written based on the latest primary mathematics syllabus. In this series, the concrete to abstract approach has been used to introduce new concepts. The knowledge base is built incrementally as pupils progress up the levels so as to consolidate the linkages between mathematical concepts.

The Teaching Guides have been developed to provide effective support to teachers following the series. The key features of the Teaching Guides are mentioned below.

1. Learning Outcomes
   A set of learning outcomes is listed at the beginning of each topic. At the end of a particular topic, the teacher should be able to evaluate whether or not the outcomes have been achieved. The revision sections in the workbooks will prove very helpful in assessing students' understanding of key concepts.

2. Instructions
   Mathematics is often considered difficult and challenging, mainly as a result of the teaching approach used. Teachers should make sure that they are dynamic in their approach to teaching mathematics. Only if teachers are enthusiastic and dynamic will they be able to inspire their pupils to put in their best efforts, work hard, and learn successfully.
   Keeping these aspects in mind, step-by-step guidance is provided to help teachers deliver mathematical concepts in a student-friendly manner. Varied activities have been included in the guides to help generate enthusiasm and enjoyment in the classroom, thereby making mathematics interesting. Group work or pair work has been encouraged to enhance learning and understanding of concepts.
   An average timing is suggested to cover each topic in class, thereby helping teachers to plan and vary their lessons accordingly. The teachers can adjust this duration as per their requirements. With careful planning, sufficient time can be allocated to the more important concepts of mathematics, while introducing new and interesting ideas will make the class more lively.
   Teachers should try to create an atmosphere in the class that is conducive to learning. This can be achieved physically by ensuring that the classroom is colourful, exciting, attractive, and full of interesting objects that help pupils to link mathematics with daily life. For example, a table should be set up in the classroom displaying different items such as shapes, number cards, 3-D figures, etc. that aid teaching. Similarly, on a psychological level, teachers should ensure that the pupils do not feel fearful or intimidated in class. The atmosphere should be peaceful and relaxed to accomplish effective learning.

3. Answers
   The guides contain answers to all the questions and activities in the textbook and workbooks.

4. Additional activities
   Extra activities have been included in the guides to reinforce and assess the children's understanding of the concepts taught. These can be done individually or in groups depending upon the strength of the class and the resources available.
Unit 1: Numbers to 10

COUNTING

Suggested Duration
4 periods (160 min)

Learning Outcomes
Pupils should be able to:

• recognize the numbers 0 to 10
• count the number of objects
• count from 1 to 10 in running order and backwards from 10 to 1
• know the sequence of numbers in both directions
• recognize, read and write numbers in words

Instructions

Let’s Learn…

Activity 1 (15 min): Look for numbers
1. Ask the pupils to look around the classroom to spot numbers. Ask a few pupils to share what they have found.
2. Ask the class the following warm-up questions:
   • How many eyes do you have?
   • How many noses do you have?
   • How many ears do you have?
   • How many fingers do you have?
   • How old are you?

Activity 2 (15 min): Recognize the numbers 0 to 10

Things you need: coloured A4-size cards numbered 0 to 10. The numbers ‘0’ to ‘10’ should be printed on one side and the corresponding numbers in words printed on the other side. The side with the numerals should also have a picture of a number of objects corresponding to the number. These cards are also needed for the rest of the activities.

1. Hold up a number card showing the side with the numerals and pictures. Read aloud the number and ask the class to repeat it. Do this for all the numbers.
2. Play a simple game to reinforce the pupils’ ability to recognize numbers:
   • Hold up two number cards, one on the left and one on the right, for 5 seconds and then put them down.
   • Ask the pupils to name the two numbers that were shown.
• Repeat the above steps 4–5 times with different numbers.
• Repeat the game for a shorter time of 2 seconds.

**Activity 3 (15 min): Count the number of objects**

*Things you need: cards numbered 0 to 10 with pictures*

1. Explain to the class that while 0 is considered a number, counting should always start from 1 and not 0.
2. Hold up a number card again but this time ask the class to count the number of objects shown on the card. This is to demonstrate to the class how you arrive at the number. Do this for all the numbers.

**Activity 4 (15 min): Count 1 to 10 in running order and backwards 10 to 1**

1. Encourage the class to recite aloud the numbers 1 to 10 as you clap your hands. Do this three times. Ask a few pupils to recite the numbers 1 to 10 as fast as they can.
2. Repeat step 1 but this time, do it in the reverse order from 10 to 1. Again, ask a few pupils to count in reverse order as fast as they can.

**Activity 5 (15 min): Know the sequence of numbers in both directions**

*Things you need: cards numbered 0 to 10 with pictures*

1. Hold up any number card showing the side with the numeral and picture. Ask the class ‘What number is this?’ and then ask ‘What number comes after this?’ Do this for 5 other numbers.
2. Repeat step 1 but this time ask ‘What number comes before this?’

**Activity 6 (25 min): Recognize, read and write numbers in words**

*Things you need: cards numbered 0 to 10 with pictures, twenty 10-sided dice and blank sheets of paper*

1. Hold up the number card showing the side with the number in words. Ask the pupils ‘What is this number?’ and then turn the card over to reveal the answer. Do this for all the numbers.
2. Hold up the number card showing the side with the numeral and picture. Ask a pupil to write the number in words on the whiteboard. Do this for all the numbers.
3. Play a simple game to reinforce writing numbers in words:
   - Pair up the pupils.
   - Give each pair a 10-sided dice. One pupil will throw the dice and the other will write in words the number shown. The pupils take turns to throw dice and write the numbers in words.

**Activity 7 (20 min): Class practice**

1. Go through the examples on pages 1–6 of the Student’s Book.

*Let’s Try…*

**Activity 8 (10 min): Individual practice**

1. Instruct pupils to do the exercise on page 7 of the Student’s Book.
Activity 9 (30 min): Class game to reinforce pupils’ understanding

1. Divide the class into groups with 8 to 9 pupils in each group. Each group is to produce the exact number of objects that you will call out. For example, you may say ‘Give me 5 pencils’ and each group has to quickly gather 5 pencils from their group members. One representative from each group will come forward with the items. The group that reaches you first with the complete number of items will be given 5 points. The pupils take turns to be the group representative. Play this game for several rounds and the group with the highest score wins. Items you can use are: pencils, erasers, water bottles, exercise books, rulers and other stationery items. Avoid using money or delicate and breakable objects.

Homework
Ask pupils to do NSPM Workbook 1A—Worksheets 1, 2 and 3.

Answers

page 7

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

WORKSheet 1
1. 10, 5, 7, 3, 6, 2, 9, 4
3. (a) four (b) three (c) eight (d) two
4. From left to right: 8, 7, 10

WORKSheet 2
1. 7, 3, 4, 1, 0, 10
2. nine, six, two, eight, five
3. 5 three
   8 seven
   7 five
   3 eight

WORKSheet 3
1. 4, 6, 7, 10
COMPARING NUMBERS

Suggested Duration
4 periods (160 min)

Learning Outcomes
Pupils should be able to:

• understand the different comparison phrases for comparing numbers
• compare 2 numbers using ‘is as many as’, ‘is more than’, ‘is greater than’, ‘is bigger than’, ‘is less than’, ‘is fewer than’, and ‘is smaller than’
• compare 3 or more numbers using ‘the biggest’ and ‘the smallest’
• compare numbers in terms of their difference

Instructions
Let’s Learn...

Activity 1 (15 min): Understand the different comparison phrases

Things you need: coloured cards, each having one of the comparison phrases ‘is as many as’, ‘is more than’, ‘is greater than’, ‘is bigger than’, ‘is less than’, ‘is fewer than’, ‘is smaller than’, ‘the biggest’ and ‘the smallest’

1. Pin up all the cards on the display board (soft board). Ask a few pupils to come forward, one at a time, and group similar phrases together.

2. Explain to the pupils the comparison phrases using examples as follows:
   • ‘as many as’ means the same number
   • ‘4 is more than 3’, ‘8 is greater than 7’, ‘6 is bigger than 4’
   • ‘3 is less than 7’, ‘1 is fewer than 4’, ‘9 is smaller than 10’

3. Introduce the phrases ‘the biggest’ and ‘the smallest’.

Activity 2 (20 min): Use the phrases to compare two numbers

1. Write any two numbers on the whiteboard leaving a space in between. Ask a pupil to pick out a card with the phrase that correctly joins the two numbers. For example, you write ‘9 ________ 6’ on the whiteboard and the pupil is to select the phrase card ‘is more than’ and place it in the space between the numbers. Do this several times until the class is well-versed in using the comparison phrases to compare two given numbers.
2. Write a comparison phrase on the whiteboard and ask a pupil to write two numbers to complete the phrase. For example, you write the phrase ‘is more than’ and the pupil is to write two numbers, on the left and right, to correspond to the phrase. Do this several times to reinforce the learning.

**Activity 3 (15 min): Compare 3 numbers using ‘the biggest’ and ‘the smallest’**

*Things you need: cards numbered 0 to 10*

1. Ask three pupils to come forward and give each a number card. Ask them to hold up the card and put it down quickly. Then ask one pupil to identify who has the biggest number. Repeat the activity several times for the smallest number.

**Activity 4 (15 min): Compare numbers in terms of their difference**

*Things you need: 10 coloured sheets with two sets of objects printed on each sheet, 3 coloured sheets with 3 sets of objects printed on each sheet. Each set of objects should have different numbers of items.*

1. Show the sheet that has two sets of objects. Ask the class to count the number of objects in each set. Point out to the pupils the difference in the number of objects in the two sets. For example, you may say:
   - ‘There are 4 more apples than oranges’ and point to the 4 extra apples.
   - ‘There are 5 fewer monkeys than lions’ while pointing at the 5 lions.

**Activity 5 (15 min): Class practice**

1. Go through the examples on pages 8–12 of the Student’s Book.

*Let’s Explore…*

**Activity 6 (15 min): Work in pairs to arrange numbers**

*Things you need: cards numbered 0 to 10*

1. Pair up the pupils. Give a set of cards to each pupil. Lead the pupils to do the exercise on page 13 of the Student’s Book.

*Let’s Try…*

**Activity 7 (15 min): Individual practice**

1. Go through the exercises on pages 14–15 of the Student’s Book.

**Additional Activity (20 min): Card game to reinforce learning of comparing numbers**

*Things you need: cards numbered 0 to 10*

1. Divide the class into groups of 3–4 pupils. Each pupil is given a stack of number cards. He holds the stack in his/her hand with the cards facing down. Each pupil is to draw out a card from the top of the stack and display it on the table. The pupil with the biggest number will ‘eat’ up the rest of the cards and put them under his/her stack. If there is a tie, the pupils will each draw another card until one draws a bigger number and he wins all. The game continues until one pupil runs out of cards.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 4 and Practice 1.
Revision (30 min)
Revise and go over the pupils’ homework.

Answers

**Let's Try** page 14
1. cow: 6  hen: 4  duck: 5  
   (a) ducks  (b) ducks
2. (a) 7  (b) 2
3. (a) 10  (b) 8

**WORK SHEET 4**
3. (a) fewer  (b) fewer  (c) more
7. The order of the numbers is: 10, 7, 5, 3, 1.

**Practice 1**
1. 10, 9, 8
2. (a) four  (b) seven  (c) nine
3.
4. (a) crabs: 7, seashells: 6  (b) more
5. six, eight
6. tree, 2
Unit 2: Number Bonds

MAKING NUMBER BONDS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• understand what number bonds are
• make number bonds for any number up to 10

Instructions
Let’s Learn
Activity 1 (30 min): Understand what number bonds are
1. Ask a few pupils to share with the class number stories involving the number bond of 5. For example, pupils may say ‘There are 2 adults and 3 children in my family.’ With this information, write on the whiteboard as follows:

   \[
   \begin{array}{c}
   5 \\
   \downarrow \ \\
   2 \\
   \end{array}
   \quad \text{or} \quad
   \begin{array}{c}
   5 \\
   \downarrow \ \\
   3 \\
   \end{array}
   \]

2. Ask the class if there are other number bonds that can be created from the number 5. Lead them to find the other number bonds:

   \[
   \begin{array}{c}
   5 \\
   \downarrow \ \\
   4 \\
   \end{array}
   \quad \text{or} \quad
   \begin{array}{c}
   5 \\
   \downarrow \ \\
   5 \\
   \end{array}
   \]

3. Tell the class that a number bond is made up of one main number and two part numbers. In the above example, 5 is the main number while 2 and 3 are the part numbers.

Activity 2 (20 min): Make number bonds for any number up to 10
Things you need: 10 coloured cubes
1. Place 10 coloured cubes on the table. Ask a pupil to separate the cubes into 2 groups with one group having 4 cubes and the other group having 6 cubes. Write on the white board the corresponding number bond of 10 \(\rightarrow\) 4 & 6. Create more number bonds from the main number 10.

2. Do the same for the rest of the numbers.
Additional Activity 3 (20 min): Class game to reinforce learning

Things you need: cards numbered 0 to 10

1. Ask three pupils to come to the front. Assign Pupil A to be the main number and Pupil B and Pupil C to be the part numbers. Give each pupil a set of number cards 0 to 10. Have the pupils form a semicircle facing the class with Pupil A standing in the centre and Pupils B and C on his left and right.

- Pupil A will hold up any number card as the main number. In the time of 10 seconds, Pupil B and Pupil C will have to hold up the correct number cards as the part numbers of number bond corresponding to the main number. The rest of the class will act as the timer by counting 1 to 10 while Pupil B and Pupil C look for the correct number cards.
- Select two other groups of three pupils to play the game.

Let’s Explore

Activity 4 (15 min): Class practice

1. Go through the Let’s Explore exercise on page 18 of the Student’s Book as follows:

- First, ask the class ‘How many children are there in the picture?’ Explain to the pupils that this is the number that will be used to make number bonds.
- Next, use the following questions to lead the pupils in making different sets of number bonds:
  ‘How many children wear spectacles and how many do not?’
  ‘How many children were playing on the slide and how many were playing on the swing?’
  ‘How many of the children are girls and how many are boys?’
- Explain to the pupils that a number bond is actually splitting a number into two smaller numbers.

Let’s Try…

Activity 5 (15 min): Individual practice

1. Ask the pupils to try the examples on page 19 of the Student’s Book. Ask a few pupils to share their answers with the class.

Homework

Ask the pupils to do Workbook 1A—Worksheet 5.

Answers

page 19

2. 0, 9; 2, 7; 3, 6; 4, 5
COMPLETING NUMBER BONDS

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- complete a number bond for any numbers up to 10

Instructions

Let’s Learn…

Activity 1 (30 min): Complete a number bond for any numbers up to 10
1. Go through with the class the examples on page 20 of the Student’s Book. For each of the examples, ask the pupils to form different number bonds. Lead the pupils to see that the main number is always bigger than the two part numbers.

Let’s Try…

Activity 2 (20 min): Individual practice
1. Ask the pupils to try the exercises on page 21 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1A—Worksheet 6 and Practice 2.

Let’s Explore

Activity 3 (20 min): Work in pairs to make number bonds using 10
1. Let the pupils work in pairs to try out the activity on page 22 of the Student’s Book.

Fun with Maths

Activity 4 (20 min): Game to reinforce learning
Things you need: a big dice made from hard cardboard
1. Play the dice game on page 23 of the Student’s Book.

Revision (30 min)
Revise and go over the pupils’ homework.
Answers

1. (a) 10  (b) 8  (c) 7  (d) 4

Worksheet 6
1. (a) 4  (b) 2  (c) 1  (d) 0
2. 

3. (a) 1  (b) 2  (c) 3  (d) 4
4. 5 and 5, 0 and 10, 4 and 6, 1 and 9, 3 and 7, 2 and 8

Practice 2
1. 3 on the tree and 1 on the ground
   2 are big and 2 are small
2. (a) 3, 3  (b) 5, 1  (c) 4, 2
6. (a) 4  (b) 7  (c) 2  (d) 9  (e) 0
7. 

2  7
Unit 3: Addition within 10

ADDING USING NUMBER BONDS

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- use the addition symbol to write number sentences for given situations
- relate addition facts within 10 to number bonds
- write two addition facts for a given number bond

Instructions

Let’s Learn...

Activity 1 (20 min): Revise number bonds with the pupils
1. Revise number bonds with the class by going through the examples on pages 17–18 of the Student’s Book again. Ask a few pupils to write some number bonds for the numbers 8, 9 and 10.
2. Remind the pupils that 0 can also be used in number bonds.

Activity 2 (20 min): Use number bonds to add 2 numbers

Things you need: blue and red cubes
1. Explain to the pupils that in number bonds, you take two numbers and add them together to form one number. Illustrate by placing 5 blue cubes and 2 red cubes on a table. Ask two pupils to count the total number of blue and red cubes.
2. Tell the class that there are now 5 blue cubes and 2 red cubes. Ask the class ‘How many cubes are there altogether?’ Encourage the class to count all the cubes to arrive at the number 7.
3. Draw the number bond on the board:

4. Tell the class that what you have just done is to add 5 to 2 or add 2 to 5. Explain that to add is to find out ‘how many in all’ or ‘how many altogether’.

Activity 3 (15 min): Write an addition sentence
1. Using the same number bond, tell the class that another way to represent the three numbers is to use a number sentence as follows:

   \[ 5 + 2 = 7 \text{ or } 2 + 5 = 7 \]
2. Explain to the class that the ‘plus’ sign, ‘+’, means to add and the ‘equal’ sign, ‘=’, means that the left side of the ‘=’ is the same as the right side of the ‘=’. Explain that the addition sentence should be read as ‘5 plus 2 equals 7’.

3. Ask the pupils to write on the board examples of addition sentences for 7, 8 and 9.

4. Remind the pupils that 0 can also be used in equations, but adding a 0 to a number will not change the number.

Write:

\[7 + 0 = 7 \text{ or } 0 + 6 = 6\]

**Activity 4 (10 min): Class practice**

1. Go through the examples on pages 25–26 of the Student’s Book.

*Let’s Think*

**Activity 5 (20 min): Work in pairs on addition**

1. Ask pupils to work in pairs on the exercises on page 27 of the Student’s Book.

**Activity 6 (20 min): Play a simple game to reinforce learning**

*Things you need: 32 sets of cards numbered, 1 to 10*

1. Group the pupils into groups of 5–6 pupils. Give each group 4 sets of number cards, 1 to 10. Ask the pupils to display all the cards randomly on the table. Within a time of 5 minutes, every group is to work together to make as many number bonds as possible from the cards displayed on the table. Each card can only be used in one number bond.

*Let’s Try…*

**Activity 7 (15 min): Individual practice**

1. Ask pupils to work through the exercises on page 28 of the Student’s Book.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 7.

**Answers**

Page 28

1. \[ \begin{array}{c}
8 \quad \quad 9 \\
1 \end{array} \]

\[8 + 1 = 9\]

There are 9 cupcakes altogether.

2. \[ \begin{array}{c}
4 \quad \quad 8 \\
4 \\
4 \end{array} \]

\[4 + 4 = 8\]

There are 8 children altogether.
**Worksheet 7**

1. (a) $5 + 2 = 7$  
   \[\begin{array}{c}
   7 \\
   \end{array}\]
   \[\begin{array}{c}
   5 \\
   2 \\
   \end{array}\]
   
   (b) $4 + 4 = 8$  
   \[\begin{array}{c}
   8 \\
   4 \\
   \end{array}\]
   
   (c) $2 + 8 = 10$  
   \[\begin{array}{c}
   10 \\
   2 \\
   8 \\
   \end{array}\]

   (d) $3 + 6 = 9$  
   \[\begin{array}{c}
   9 \\
   3 \\
   6 \\
   \end{array}\]

   (e) $2 + 6 = 8$  
   \[\begin{array}{c}
   8 \\
   2 \\
   6 \\
   \end{array}\]

   (f) $3 + 4 = 7$  
   \[\begin{array}{c}
   7 \\
   3 \\
   4 \\
   \end{array}\]

2. (a) 3  
   (b) 7  
   (c) 4  
   (d) 0

---

**ADDING BY COUNTING ON**

**Suggested Duration**

2 periods (80 min)

**Learning Outcomes**

Pupils should be able to:

- use the strategy ‘counting on’ to add two numbers within 10, one of which is 1, 2 or 3

**Instructions**

*Let’s Learn…*

**Activity 1 (40 min): Add by counting on**

*Things you need: a transparent container, two paper cups, 10 marbles*

1. Ask a pupil to put 5 marbles into one cup and 3 marbles into the other cup. Next, ask another pupil to write the numbers 5 and 3 on the paper cups accordingly.

2. Tell the class that you are going to add 5 and 3 using the ‘counting on’ method. Ask the class to repeat the words ‘counting on’. Explain to the class that ‘counting on’ means to count in increasing order e.g. $2 \rightarrow 3 \rightarrow 4 \rightarrow 5$. Next write the addition sentence: $5 + 3$ on the board.

3. Pour the contents of the cup with 5 marbles into the transparent container. Then, drop the 3 marbles one at a time into the transparent container as you count aloud from ‘5’ like this: $5 \rightarrow 6 \rightarrow 7 \rightarrow 8$. Tell the class that the container now contains 8 marbles after adding 3 marbles to 5 marbles. Write ‘8’ to the equation: $5 + 3 = 8$.

4. Repeat steps 1 to 3 but this time round start counting from the number ‘3’ instead. Show the class that $3 + 5$ is the same as $5 + 3$. Tell them that in addition, changing the order of numbers will not affect the answer. But emphasize that they should always count from the bigger number because it is faster this way.
5. Repeat steps 1 to 3 using other numbers.
6. Once again, remind the students that adding 0 to a particular number will not change it.

Activity 2 (20 min): Class practice
1. Go through with the pupils the examples on pages 29–31 of the Student’s Book.

Let’s Try...

Activity 3 (20 min): Individual practice
1. Ask pupils to try the exercises on page 32 of the Student’s Book.

Homework
Ask pupils to do Workbook 1A—Worksheet 8.

Answers

page 32

1. 8  2. 8  3. 7

WORK SHEET 8

1. (a) 3 + 2 = 5  (b) 5 + 0 = 5  (c) 3 + 3 = 6  (d) 7 + 3 = 10  
   (e) 4 + 2 = 6  (f) 9 + 1 = 10  (g) 2 + 2 = 4  (h) 3 + 1 = 4  
2. (a) 10  (b) 9  (c) 8  (d) 9  
   (e) 7  (f) 5  (g) 10  (h) 7  
   (i) 3  (j) 9  (k) 4  (l) 6

MAKING ADDITION STORIES

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• make up number stories for given addition sentences

Instructions

Let’s Learn...

Activity 1 (20 min): Make addition stories from pictures

Things you need: colourful pictures of animals to tell addition stories
1. Show the pictures of animals to the pupils and tell addition stories.
2. Go through with the pupils the pictures of the butterflies and kittens on page 33 of the Student’s Book.

3. Show some more pictures and ask pupils to make addition stories and share them with the whole class.

Activity 2 (20 min): Make addition stories based on situations

1. Select 10 pupils randomly and ask them to stand in front of the class. Make 2–3 addition stories about them. For example:
   - There are 4 boys and 6 girls.
     There are 10 children altogether.
     Write: $4 + 6 = 10$
   - 3 boys and 2 girls are wearing spectacles.
     There are 5 pupils altogether who are wearing spectacles.
     Write: $3 + 2 = 5$
   - 2 girls and 4 boys are wearing watches.
     There are 6 pupils altogether who are wearing watches.
     Write: $2 + 4 = 6$

2. You can make more interesting stories about the 10 pupils by finding out interesting things about them. For example you may:
   - Ask ‘How many boys like to eat mangoes?’ and ‘How many girls like to eat mangoes?’
     Then lead the class to find out how many in all like to eat mangoes.
   - Ask ‘How many boys come to school by car?’ and ‘How many girls come to school by car?’
     Then lead the class to find out how many in all use their cars to come to school.

3. Select another group of 10 pupils. This time round, ask some pupils to try making stories about the 10 pupils. They can also ask the 10 pupils about their habits, interests and things that they do and then make stories about these things.

Let’s Explore

Activity 3 (20 min): Practise in pairs

1. Pair up the pupils. Ask the pupils to try making stories about the picture on page 34 of the Student’s Book. Ask them to share their ideas.

Let’s Try...

Activity 4 (20 min): Individual practice

1. Ask the pupils to try the exercises on page 35 of the Student’s Book. They may write the stories they have made in their notebook.

Homework

Ask the pupils to do Workbook 1A—Worksheet 9.
Answers

(a) 3 girls are wearing black swimsuits.
    3 girls are wearing coloured swimsuits.
    There are 6 girls altogether.

(b) There are 2 girls.
    There are 3 boys.
    There are 5 children altogether.
    1 child is eating.
    4 children are not eating.
    There are 5 children altogether.

WORKSHEET 9

1. (a) 4, 4 4 + 4 = 8 8  
   (b) 5, 3 5 + 3 = 8 8  
   (c) 7, 1 7 + 1 = 8 8  
   (d) 1, 2 1 + 2 = 3 3  
   (e) 2, 3 2 + 3 = 5 5  
   (f) 3, 3 3 + 3 = 6 6

WORD PROBLEMS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- solve one-step word problems involving addition within 10

Instructions
Let's Learn...

Activity 1 (25 min): Solve word problems on addition
Thinks you need: a transparent container, 10 coloured cubes

1. Go through with the class examples on page 36 of the Student's Book. For each example, use both the number bonds and counting on methods to solve the word problems as follows:

Method 1: Number Bonds
Draw on the board the number bond:

\[
\begin{array}{c}
? \\
2 \\
\end{array}
\]

\[
\begin{array}{c}
8 \\
? \\
2 \\
\end{array}
\]
Explain to the class that the box with the two lines drawn out from it represents the total of the two numbers. Tell the pupils that the words ‘altogether’, ‘total’ and ‘in all’ are clues pointing to addition.

Method 2: Counting on
Use the dropping of cubes into the clear container to demonstrate the method of counting on to solve word problems.

2. Once the pupils have found the answers to the word problems using the above methods, teach them how to write the complete answers neatly in proper statements. Each complete answer should have an addition sentence and an answer statement.

Addition sentence → 8 + 2 = 10
Answer statement → Mary has 10 fish altogether.
Addition sentence → 3 + 3 = 6
Answer statement → Lucy has 6 flowers altogether.

Let’s Try…

Activity 2 (15 min): Class practice
1. Go through the word problems on page 37 of the Student’s Book. Select 2–3 pupils to write the complete answers (addition sentence and answer statement) for each word problem on the board. Ask the rest of the class to check if the answers are correct and properly written. If there are any mistakes, ask another pupil to come forward to make the corrections.

Homework
Ask the pupils to do Workbook 1A—Worksheet 10 and Practice 3.

Fun With Maths

Activity 3 (20 min): Game to reinforce learning
1. Lead the pupils to play the game on page 38 of the Student’s Book.

Revision (20 min)
Revise and go over the pupils’ homework.

Answers

page 37
1. 8
2. 7
1. (a) \(4 + 4 = 8\) There are 8 fruits altogether.
   (b) \(7 + 3 = 10\) There are 10 ice creams altogether.
   (c) \(2 + 4 = 6\) There are 6 coins altogether.
   (d) \(6 + 2 = 8\) There are 8 people altogether.
   (e) \(5 + 4 = 9\) Sally has 9 flowers altogether.
   (f) \(3 + 5 = 8\) There are 8 apples altogether.

2. (a) \(2 + 8 = 10\) There are 10 eggs now.
    (b) \(1 + 6 = 7\) There are 7 buttons now.
    (c) \(2 + 7 = 9\) There are 9 fish now.

3. (a) \(4 + 2 = 6\) John has 6 erasers now.
    (b) \(5 + 2 = 7\) John has 7 pencils now.

4. (a) \(3 + 5 = 8\) Betty has 8 dolls altogether.
    (b) \(2 + 4 = 6\) Betty has 6 toy cars altogether.
    (c) \(3 + 6 = 9\) Betty has 9 teddy bears altogether.

6. (b) \(4 + 2 = 6\)
    (c) \(5 + 3 = 8\)
    (d) \(6 + 4 = 10\)
    (e) \(8 + 1 = 9\)

7. (a) \(1 + 2 = 3\) (b) \(3 + 2 = 5\) (c) \(4 + 1 = 5\)

8. \(4 + 6 = 10\) \(7 + 2 = 9\)
Unit 4: Subtraction within 10

SUBTRACTING USING NUMBER BONDS

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:

- use the subtraction symbol to write number sentences for given situations
- relate subtraction facts within 10 to number bonds

Instructions

Let's Learn...

Activity 1 (40 min): Subtract using number bonds
1. Draw a number bond structure without filling in the numbers:

2. Place 7 blue cubes on your desk and write the number 7 on the number bond as follows:

3. Take away 4 cubes and write the number 4 on the number bond as follows:

4. Count the remaining cubes and write the number 3 on the number bond as follows:

5. Explain to the pupils that to subtract means to take away.
6. Repeat steps 1 to 5 using different number of cubes. Let the pupils write the numbers in the number bonds.

Activity 2 (30 min): Write subtraction sentence
1. Explain to the class that another way to show subtraction is to write a subtraction sentence or equation. Ask the pupils if they can remember how to write an addition
sentence. Write the addition sentence on the board to refresh their memories: 4 + 3 = 7

2. Explain that a subtraction sentence is similar to an addition sentence. Write the subtraction sentence as follows: 7 – 4 = 3

3. Explain to the class that the minus sign, −, means to subtract or take away and explain again that the equal sign, =, means that the left side of the = is the same as its right side. Tell the pupils that the subtraction sentence should be read as ‘7 minus 4 equals to 3’. Ask the class to read it together once as you point to the subtraction sentence or equation.

3. Point out to the pupils that 7 – 4 is not the same as 4 – 7. Explain that the order in which the numbers appears in a subtraction sentence is important and cannot be reversed. This is different from addition where the numbers can be reversed i.e. 7 + 4 is the same as 4 + 7.

4. Emphasize to the pupils that in subtraction, the bigger number must always be before the minus sign. Explain that the reason for this is because you cannot take away more than what you have. For example, if you have 7 apples, the most you can take away is 7 apples and not more than that.

7 – 6 is ✓
7 – 7 is ✓
4 – 7 is ✗
0 – 5 is ✗

5. Further explain to the class that in subtraction, you are finding the difference between two numbers. Also state that when zero is subtracted from any number, the number stays the same.

Activity 3 (20 min): Class practice
1. Go through the examples on pages 40–41 of the Student’s Book.

Let’s Try…

Activity 4 (30 min): Individual practice
1. Ask pupils to work through the exercises on page 42 of the Student’s Book.

Homework
Ask pupils to do Workbook 1A—Worksheet 11.

Answers

page 42

1. There are 5 cars. 3 are blue.
   5 – 3 = 2
   2 cars are red.
2. There are 9 fish in the picture. 3 are in the net.
   \[9 - 3 = 6\]
   6 fish are in the tank.

**WORKSHEET 11**

1. (a) 5 (b) 5 (c) 3

   \[
   6 \leftarrow 1 \quad 7 \leftarrow 2 \quad 8 \leftarrow 5 \\
   \quad 5 \leftarrow  \quad 5 \leftarrow  \quad 3 \leftarrow \\
   \]

   (d) 0 (e) 5 (f) 3

   \[
   5 \leftarrow 0 \quad 9 \leftarrow 4 \quad 8 \leftarrow 5 \\
   \quad 5 \leftarrow \quad 5 \leftarrow \quad 3 \leftarrow \\
   \]

**SUBTRACTING BY CROSSING OUT**

**Suggested Duration**

1 period (40 min)

**Learning Outcomes**

Pupils should be able to:
- use the strategy crossing out to subtract numbers within 10

**Instructions**

*Let's Learn...*

**Activity 1 (20 min): Subtract by crossing out**

1. Draw 9 circles on the board. Cross out 3 circles and count the remaining circles.
   Write ‘9 – 3 = 6’. Do this for a few more examples.

2. Go through with the pupils the examples on page 43 of the Student’s book.

*Let's Try...*

**Activity 2: (20 min): Class practice**

1. Ask pupils to try the exercises on page 44 of the Student’s Book.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 12.
Answers

1. 5  2. 7  3. 2

**WorkSheet 12**

1. (a) 1  (b) 3  (c) 3  (d) 1  (e) 3  (f) 6  (g) 3  (h) 7

**Subtracting by Counting Back**

**Suggested Duration**

2 periods (80 min)

**Learning Outcomes**

Pupils should be able to:
- use the strategy counting back to subtract numbers within 10

**Instructions**

**Let’s Learn...**

**Activity 1 (40 min): Subtract by counting back**

*Things you need: a transparent container, 10 marbles*

1. Put 8 marbles into the transparent container. Tell the class that you are going to subtract 3 marbles using the counting back method. Ask the class to repeat the words ‘counting back’. Explain to the class that counting back means to count in decreasing order, e.g. 7 → 6 → 5 → 4 →.

2. Take out 3 marbles one at a time as you count aloud from 8 like this 7 → 6 → 5. Tell the class that the container now has 5 marbles after subtracting 3 marbles from the 8 marbles. Write 8 – 3 = 5.

3. Repeat steps 1 and 2 for different numbers of marbles.

**Activity 2 (20 min): Class practice**

1. Go through the examples on pages 45–46 of the Student’s Book.

**Let’s Try...**

**Activity 3: (20 min): Individual practice**

1. Ask pupils to try the exercises on page 47 of the Student’s Book.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 13.
Answers

(a) 3  (b) 7  (c) 4  (d) 2  (e) 1

Worksheet 13

1. (a) 2  (b) 2  (c) 5  (d) 3  (e) 3  (f) 5  (g) 0  (h) 1

MAKING SUBTRACTION STORIES

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- make up number stories for given subtraction sentences

Instructions

Let’s Learn…

Activity 1 (20 min): Make subtraction stories from pictures
Things you need: colourful pictures of animals which you can use to tell subtraction stories
1. Show the pictures of animals to the pupils and tell subtraction stories.
2. Discuss the subtraction stories based on the pictures of the rabbits and the boys on page 48 of the Student’s Book.
3. Show some more pictures to the pupils and ask some of them to make subtraction stories and share them with the whole class.

Activity 2 (40 min): Make subtraction stories based on situations
1. Select 10 pupils and ask them to stand in front of the class. Make 2–3 subtraction stories about them. For example:
   - There are 10 pupils.
     6 pupils are boys.
     4 pupils are girls.
     Write: 10 – 6 = 4
   - There are 6 boys.
     4 boys are wearing watches.
     2 boys are not wearing watches.
     Write: 6 – 4 = 2
• There are 4 girls.
  2 girls are wearing earrings.
  2 girls are not wearing earrings.
  Write: $4 - 2 = 2$

2. You can make more interesting stories about the 10 pupils by finding out interesting things about them. For example you may ask:
   • ‘How many pupils like to read books?’ and ‘How many girls like to read books?’
     Then lead the class to find out how many boys like to eat read books.
   • ‘How many pupils come to school by school bus?’ and ‘How many boys come to school by school bus?’
     Then lead the class to find out how many girls come to school by school bus.

3. Select another group of 10 pupils. This time round, ask some pupils to try making stories about the 10 pupils. They can also ask the 10 pupils about their habits, interests and things that they do and then make stories about these things.

**Let’s Try…**

**Activity 3 (20 min): Individual practice**

1. Ask the pupils to try the exercises on page 49 of the Student’s Book. They may write the stories they have made in their notebooks.

**Homework**

Ask the pupils to do Workbook 1A—Worksheet 14.

**Answers**

*page 49*

1. (a) There are 7 vases.
   5 vases are blue.
   2 vases are yellow.

   (b) There are 8 children.
   6 children are eating ice creams.
   2 children are eating lollipops.
   There are 8 children.
   4 children are girls.
   4 children are boys.

2. Answers may vary. Accept reasonable answers.
1. (a) There are 6 fish in the tank at first.
   1 fish is caught.
   \[6 - 1 = 5\] 5 fish are left.
(b) There are 5 frogs.
   2 frogs are jumping into the water.
   \[5 - 2 = 3\] There are 3 frogs on the leaves.
(c) The clown had 7 balloons.
   3 balloons flew away.
   \[7 - 3 = 4\] He had 4 balloons left.
(d) There are 10 birds.
   3 birds fly away.
   \[10 - 3 = 7\] There are 7 birds left.

2. There are 8 sail boats.
   2 sail boats sail away.
   6 sail boats are left.
   There are 8 ducks.
   3 ducks are on the ground.
   5 are swimming.

WORD PROBLEMS

Suggested Duration
1 period (40 min)

Learning Outcomes
Pupils should be able to:
- solve one-step word problems involving subtraction within 10

Instructions
Let’s Learn…

Activity 1 (25 min): Solve word problems on subtraction

Things you need: a transparent container, 10 coloured cubes

1. Go through with the class examples on page 50 of the Student’s Book. For each example, use both the number bonds and counting back methods to solve the word problems as follows:
Method 1: Number Bonds

Draw on the board the number bond:

```
  9
 /|
/  |
6 - 3
```

Remind the class that the box with the 2 lines drawn out from it represents the total of the two numbers.

Method 2: Counting back

Use the taking away of cubes from the transparent container to demonstrate the method of counting back to solve word problems.

2. Once the pupils have found the answers to the word problems using the above methods, teach them how to write the complete answers neatly in proper statements. Each complete answer should have a subtraction sentence and an answer statement.

Example 1 on page 50 of the Student’s Book

Subtraction sentence $\rightarrow 9 - 6 = 3$

Answer statement $\rightarrow 3$ coins were left.

Example 2 on page 50 of the Student’s Book

Subtraction sentence $\rightarrow 4 - 2 = 2$

Answer statement $\rightarrow$ She has 2 fewer teddy bears than dolls.

3. Ask the pupils to look for clues, words or phrases that indicate subtraction. For example:
‘How many fewer toys teddy bears than dolls...?’
‘How many more apples than pears...?’

4. Remind the pupils that they must always subtract from a bigger number and not the other way round.

Let’s Try…

Activity 2 (15 min): Class practice

1. Go through the word problems on page 51 of the Student’s Book. Select 2–3 pupils to write the complete answers (subtraction sentence and answer statement) for each word problem on the board. Ask the rest of the class to check if the answers are correct and properly written. If there are any mistakes, ask another pupil to come forward to make the corrections.

Homework

Ask the pupils to do Workbook 1A—Worksheet 15.

Answers

page 51

1. 5 flowers were left. 2. There are 8 fewer flowers than bees.
RELATING ADDITION AND SUBTRACTION

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- recognize the relationship between addition and subtraction

Instructions

Let’s Learn…

Activity 1 (40 min): Relate addition and subtraction using number bonds
1. Draw the following number bonds to show how addition and subtraction sentences can be formed in the same number bond:
   - Addition: \(6 + 3 = ?\)
   - Subtraction: \(9 - 6 = ?\)

   ![Number Bond Diagram]

2. Go through the examples on page 52 of the Student’s Book.

Let’s Try…

Activity 2 (20 min): Individual practice
1. Ask the pupils to do the exercises on page 53 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1A—Worksheet 16 and Practice 4.

Revision (20 min)

Fun with Maths
1. Let the pupils play the game on page 54 of the Student’s Book to reinforce their understanding.
2. Revise and go over the pupils’ homework.
Answers

Let’s Try page 53
1. \(5 + 4 = 9\)  \(9 - 4 = 5\)
   \(4 + 5 = 9\)  \(9 - 5 = 4\)
2. \(3 + 5 = 8\)  \(8 - 3 = 5\)
   \(5 + 3 = 8\)  \(8 - 5 = 3\)
3. \(4 + 1 = 5\)  \(5 - 4 = 1\)
   \(1 + 4 = 5\)  \(5 - 1 = 4\)

Work Sheet 16
1. (a) \(3 + 7 = 10\)  (b) \(2 + 8 = 10\)
   \(7 + 3 = 10\)  \(8 + 2 = 10\)
   \(10 - 7 = 3\)  \(10 - 8 = 2\)
   \(10 - 3 = 7\)  \(10 - 2 = 8\)

Practice 4
1. \(7 - 2 = 5\)  \(3 - 2 = 1\)  \(10 - 10 = 0\)
   \(10 - 2 = 8\)  \(7 - 1 = 6\)  \(10 - 1 = 9\)
2. (a) 7  (b) 2  (c) 10  (d) 8  (e) 5  (f) 7
3. (a) \(6 - 4 = 2\) There are 2 fewer worms than birds.
   (b) \(7 - 3 = 4\) There are 4 fewer leaves than ladybirds.
   (c) \(10 - 8 = 2\) There are 2 more monkeys than bananas.
4. Answers may vary. Ensure that the calculation is correct.
5. (a) \(9 - 7 = 2\) 2 more cupcakes can be put in.
   (b) \(10 - 1 = 9\) There are 9 strawberries in the bag.
   (c) (i) \(3 + 1 = 4\) There are 4 men on the lorry now.
      (ii) \(5 - 2 = 3\) There are 3 men left.
Suggested Duration
2 periods (80 min)

Answers

1. (a) 6 mushrooms, 9 carrots, 10 potatoes
3. From top to bottom: 4, 8, 3, 7, 10
4. 9 and 1, 3 and 7, 6 and 4, 5 and 5, 0 and 10, 8 and 2
5. 
6. (a) more (b) fewer (c) fewer
7. (a) 6 (b) 9 (c) 3
8. 7 – 1 = 6
   7 – 6 = 1
   1 + 6 = 7
   6 + 1 = 7
9. 
10. (a) There are 3 big boxes and 4 small boxes.
    3 + 4 = 7
    There are 7 boxes altogether.
    (b) There are 2 boys and 6 girls.
    2 + 6 = 8
    There are 8 children altogether.
11. (a) 7 – 2 = 5
    5 balls are left.
    (b) 10 – 4 = 6
    She must buy 6 more balloons.
12. I see a clown.
Unit 5: Position

ORDINAL NUMBERS

Suggested Duration
4 periods (160 min)

Learning Outcomes
Pupils should be able to:

- name positions using ordinal numbers (first, second, third, etc.) and symbols (1st, 2nd, 3rd, etc.)

Instructions

Let’s Learn...

Activity 1 (20 min): Name positions from first to tenth positions

Things you need: 10 A4 size coloured position cards, each card should have the number 1 to 10, 1st to 10th and the words ‘first’ to ‘tenth’ printed on it. For example:

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>2nd</td>
<td>9th</td>
<td>10th</td>
</tr>
<tr>
<td>First</td>
<td>Second</td>
<td>Ninth</td>
<td>Tenth</td>
</tr>
</tbody>
</table>

1. Select 10 pupils and give them each a coloured position card. Arrange them in a straight row facing the class and according to their position card. Ask them to hold their position cards in front of their chests. Lead the whole class to learn the positions by reading aloud the positions of each card and asking the pupils to repeat them.

2. Ask the 10 pupils to turn around with their backs facing the class. Remove two position cards from two of the pupils without telling the class which two you have removed. After that, ask the 10 pupils to turn around and face the class again with two of the pupils not holding position cards. Ask the rest of the pupils to identify the missing positions. Ask some pupils to write the missing positions on the board. Repeat this a few times for different missing positions.

Activity 2 (20 min): Identify the position of an item in a queue

Things you need: 10 big name stickers, 2 coloured position cards for 1st and 10th positions

1. Give 10 pupils each a name sticker and ask them to write their name on it and stick the stickers on to their chests. Arrange them in a straight row facing the class. Assign the two pupils, one at each end of the row, the ‘first’ and ‘tenth’ position cards so that the class knows where the beginning and the end of the row is.

2. Lead the class in identifying the position of each of the 10 pupils by randomly picking on any one of the pupils. For example, you may ask ‘In which position is Sameer?’ or ‘What is Saima’s position?’
3. With the help of the row of 10 pupils, explain to the class the following positioning phrases.
   - Aslam is ‘just before’ Maria.
   - Ali is ‘just after’ Saeed.
   - Ahmed is ‘between’ Aslam and Maria.
4. Repeat steps 1 to 3 using different groups of 10 pupils so that the first group can have the chance to learn and practice.

**Activity 3 (15 min): Identify the position using left and right as reference points**

1. Give 10 pupils (choose those who have not been called out) each a name sticker and ask them to write their name on it and stick it on to their chests. Arrange them in a straight row facing the class. Assign the two pupils, one at each end of the row, to be the ‘left’ and ‘right’ positions. Explain to the class that you are going to teach them how to identify positions using left and right as the reference points.

2. Lead the class in identifying the position of each of the 10 pupils using left and right as reference points as follows:
   - Shahid is 4th from the left.
   - Saira is 3rd from the right.
   - Ahmed is last from the left.
   - Nadia is first from the right.

3. Try asking more difficult positioning questions such as ‘Who is second from the right of Majid?’ or ‘Who is the third from the left of Ahmed?’

**Activity 4 (10 min): Class practice**

1. Go through the examples on pages 56–61 of the Student’s Book.

**Let’s Explore**

**Activity 6 (15 min): Stories involving 1st to 10th positions.**

1. Follow the instructions given on page 62 of the Student’s Book.

**Let’s Think**

**Activity 7 (25 min): Challenging problems to enhance learning**

1. Let the pupils try the problem sum on their own for 5 min before demonstrating how you solve the problem as follows:

   ![Diagram]

   Answer: There are 9 children in the row.
Let the pupils try the exercise on their own for 5 mins before demonstrating how you solve the problem as follows:

Step 1: Write Carol above Ann ➔ Carol
        Ann

Step 2: Write Betty above Carol ➔ Betty
        Carol
        Ann

Step 3: Write Diana above Betty ➔ Diana
        Betty
        Carol
        Ann

Answer: Diana came in 1st, Betty came in 2nd and Carol came in 3rd.

Let’s Try...

Activity 9 (15 min): Individual practice

1. Ask pupils to work through the exercises on pages 64–65 of the Student’s Book.

Homework

Ask pupils to do Workbook 1A—Worksheet 17 and Practice 5.

Revision (40 min)

Fun with Maths

1. Go through the activity on page 66 of the Student’s Book. Before doing the activity, you need to make sure that the pupils know the names of the 12 months. Either pin up a poster of the 12 months or write the months from January to December and their corresponding positions from 1st month to 12th month on the board.

2. Revise and go over the pupils’ homework.

Answers

pages 64–65

1. (a) 7th floor  (b) hairdresser’s shop
    (c) 3rd floor  (d) no, 5th floor
2. (a) Miss Tulip  
(b) Miss Daffodil  
(c) Miss Lily  
(d) 8th from the left, 3rd from the right  
(e) 8th from the right

**Worksheet 17**

4. (a) fourth  
(b) eighth  
(c) third  
(d) tenth  
5. (d) 8th position  
7. (a) bear  
(b) leopard  
(c) sixth  
(d) deer  
(e) six

**Practice 5**

4. (a), (b), and (d) are true
Unit 6: Numbers to 20

COUNTING

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- count to tell the number of objects in a given set
- read and write numbers in numerals and words

Instructions

Let’s Learn…

Activity 1 (10 min): Recall numbers up to 10
1. Revise with the class, numbers up to 10. Ask the class to count from 1 to 10 and encourage a few pupils to write the numbers 1 to 10 in numerals and in words on the board. Recall the number 0 and its corresponding word zero.

Activity 2 (15 min): Count numbers from 11 to 20
Things you need: 20 cubes
1. Display 10 cubes on the table. Count them starting from 1: 1 → 2 → 3… → 10. Then add one cube and count 11. Tell the class that 11 is made up of 10 and 1. Write on the board, ‘11, eleven’.
2. Repeat step 1 for the rest of the numbers until 20.
3. Go over with the pupils all the numbers 11 to 20 with their corresponding words.
4. Emphasize that in order to count numbers 11 to 20, pupils must always make a ten and then count on.

Activity 3 (15 min): Count 11 to 20 in running order and backwards 20 to 11
1. Encourage the class to recite aloud the numbers 11 to 20 as you clap your hands. Do this three times. Ask a few pupils to recite the numbers 11 to 20 as fast as they can.
2. Repeat step 1 but this time in the reverse order from 20 to 11. Again, ask a few pupils to recite in reverse order as fast as they can.

Activity 4 (20 min): Know the sequence of numbers up to 20 in both directions
Things you need: cards numbered 11 to 20 with corresponding pictures
1. Hold up any number card showing the side with the numeral and picture. Ask the class ‘What number is this?’ and then ask ‘What number comes after this?’ Do this for 5 other numbers.
2. Repeat step 1 but this time ask ‘What number comes before this?’

**Activity 5 (20 min): Recognize, read and write numbers up to 20 in numerals and in words**

*Things you need: cards numbered 1 to 20 with their corresponding words printed on the back*

1. Hold up a number card showing the numeral and ask the pupils ‘What is this number?’ Then turn the card over to reveal the answer. Ask the class to read aloud the number. Repeat this for other numbers.

2. Hold up the number card showing the side with the numeral and picture. Ask a pupil to read aloud the number and then write the number in words on the board. Repeat this for other numbers.

3. Play a simple game to reinforce the pupils’ ability to recognize numbers:
   - Hold up two number cards, one on the left and one on the right, for 5 seconds before putting them down.
   - Ask a pupil to say the two numbers that he/she has just seen and then write them on the board, both in numerals and in words.
   - You can either show both as numerals or both in words or one as a numeral and the other in words.
   - You may also repeat the game for a shorter time of 1 or 2 seconds.

**Activity 6 (20 min): Class practice**

1. Go through the examples on pages 68–70 of the Student’s Book.

*Let’s Try…*

**Activity 7 (20 min): Individual practice**

1. Ask the pupils to do the exercises on page 71 of the Student’s Book. Ask pupils to compare answers with their partners.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 18.

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**Answers**

*Let’s Try* page 71

(a) thirteen  (b) fifteen  (c) nineteen

**Worksheet 18**

1. (a) 12     (b) 14     (c) 16     (d) 17     (e) 19     (f) 20
2. (a) eleven (b) thirteen (c) fifteen (d) seventeen (e) eighteen (f) twenty
5. (a) 15     (b) 18     (c) 13     (d) 12     (e) 11     (f) 19
COMPARING AND ORDERING NUMBERS

Suggested Duration
4 periods (160 min)

Learning Outcomes
Pupils should be able to:
- arrange numbers 11 to 20 in order (including backwards)
- compare the number of objects in two or more sets
- compare and order numbers

Instructions

Let’s Learn...

Activity 1 (10 min): Revise with the pupils the different comparison phrases

Things you need: coloured cards printed with comparison phrases, ‘is as many as’, ‘is more than’, ‘is greater than’, ‘is bigger than’, ‘is less than’, ‘is fewer than’, ‘is smaller than’, ‘the biggest’ and ‘the smallest’.

1. Pin up all the cards on the display board. Revise with the pupils the meanings of the different comparison phrases by using examples as follows:
   - ‘4 is more than 3’, ‘8 is greater than 7’, ‘6 is bigger than 4’
   - ‘3 is less than 7’, ‘1 is fewer than 4’, ‘9 is smaller than 10’

Activity 2 (15 min): Compare numbers up to 20 using comparison phrases

1. Write any two numbers up to 20 on the board, leaving a space in between. Ask a pupil to write the phrase that correctly joins the two numbers. For example, you write ‘14 _______11’ on the board, the pupils should write the phrase ‘is more than’ in the space between the numbers. Do this several times with other numbers between 11 and 20.

2. Write a comparison phrase on the board and ask a pupil to write any 2 numbers up to 20 to complete the phrase. For example, you write ‘is more than’ and the pupil is to write a number, on the left and right of the phrase to complete it. Do this several times to reinforce learning.

Activity 3 (15 min): Compare 3 numbers up to 20 using ‘the biggest’ and ‘the smallest’

1. Ask 3 pupils to come forward and give each a number card. Ask them to hold up the cards and put them down quickly. Then ask one pupil to say who has the biggest number. Do this several times and repeat the activity asking for the smallest number.

Activity 4 (20 min): Compare numbers up to 20 in terms of their difference

Things you need: 10 coloured sheets with two sets of objects printed on each sheet, 3 coloured sheets with 3 sets of objects printed on each sheet. Each set of objects should have a different number of items.
1. Flash the sheet that has two sets of objects to the pupils. Ask the class to count the numbers of objects in each set. Point out to the pupils the difference in the two numbers. For example, you may say:
   • ‘There are 9 more apples than oranges’ and point to the 9 extra apples.
   or
   • ‘There are 12 fewer monkeys than lions’ while pointing at the 12 lions.

**Activity 5 (20 min): Arrange numbers up to 20 in ascending and descending order**

1. Explain the meaning of ascending and descending by drawing a flight of steps to represent ascending and descending as going up and going down respectively. Explain that when going up from level 1 to 10, the numbers get bigger and this is called ascending and when going down from level 10 to 1, the numbers get smaller and this is called descending.

   Ascending order—smallest number to biggest number
   Descending order—biggest number to smallest number

2. Play a game as follows:
   • Divide the class into 4 groups.
   • Give each pupil a slip of paper with a 3-digit number written on it.
   • At the ‘start’ signal, pupils in each group are to arrange themselves in a straight line according to the ascending order of their numbers.
   • The team that correctly completes the arrangement first wins.

**Activity 6 (10 min): Class practice**

1. Go through the examples on pages 72–74 of the Student’s Book.

**Let’s Explore…**

**Activity 7 (15 min): Group activity to enhance learning**

1. Refer the pupils to Exercise A on page 75 of the Student’s Book. The pupils are to carry out this exercise in groups of 5. Every group is to form 5 different lengths of trains using interlocking cubes and arranging them from the shortest to the longest. To do this, each pupil is to make his/her own train to contribute to the group. If there are any two trains that are of the same length, the group should adjust the trains by adding or subtracting cubes so that all the trains are of different lengths.

2. Ask the pupils to work in pairs for Exercise B on page 75 of the Student’s Book.

**Let’s Try…**

**Activity 8 (15 min): Individual practice**

1. Ask pupils to try the exercises on page 76 of the Student’s Book and compare answers with their partners. Go around the class to check their answers.

**Homework**

Ask pupils to do Workbook 1A—Worksheet 19 and Practice 6.
Revision (40 min)

Fun with Maths

1. Let the pupils try the activities on page 77 of the Student’s Book.
2. Revise and go over the pupils’ homework.

Answers

page 76

1. (a) 12, 18, 19  (b) 15  (c) 18
2. 16, 17
3. (a) 20  (b) 12  (c) 12, 15, 17, 20

WORK SHEET 19

1. (a) 13, 17, 20  (b) 15, 17  (c) 16, 18
2. (a) 12  (b) 14  (c) 11  (d) 17
3. (a) 19  (b) 14  (c) 20  (d) 17
4. (a) 18  (b) 19  (c) 20
5. (a) 11  (b) 12  (c) 15
6. 19, 16, 14, 13, 12
7. 11, 15, 17, 18, 20
8. (a) 2  (b) 1  (c) 1

Practice 6

2. (a) 15  (b) 11  (c) 16  (d) 19  (e) 10  (f) 7  (g) 10  (h) 10
3. 12 horses, 14 sheep, 16 ducks
   (a) 4  (b) 2  (c) horses
4. 15 nails, 11 screwdrivers, 10 hammers
   (a) 5  (b) 1
6. (a) 13, 15, 16, 17, 18, 20
Unit 7: Addition and Subtraction within 20

ADDITION / ADDING BY COUNTING ON

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- use the strategy ‘counting on’ to add two numbers within 20

Instructions

Let’s Learn...

Activity 1 (15 min): Revise with the pupils numbers 11 to 20
Things you need: stacks of cards numbered 1 to 20

1. Revise with the pupils numbers up to 20 by getting the pupils to play a simple game as follows:
   - Group the pupils into groups of 5 and give each group a stack of cards numbered 1 to 20 which is shared equally among the 5 pupils, so that each pupil has 4 cards in his hand.
   - Call out any number from 1 to 20. Every pupil is to search through their 4 cards and if they have the card with the number that was called out, they are to quickly stand up, lift up their card and shout ‘BINGO’. The pupil who stood up first with the correct card and shouted ‘BINGO’ will have their card taken. The group which finishes all its cards first is the winner.

2. Instead of calling out the number, you may also write the number in words or numerals on the board.

Activity 2 (25 min): Obtain numbers 11 to 20 by addition
Things you need: different coloured cubes

1. Display 14 cubes on the desk and ask a pupil to first count 10 cubes and put them aside. Encourage the class to count together with you the remaining 4 cubes as follows:
   - ten → eleven → twelve → thirteen → fourteen

2. Lead the pupils to see that adding 10 and 4 cubes make 14 cubes. Write on the board, $10 + 4 = 14$. Read is as ‘10 plus 4 equals fourteen’.

3. Repeat two more times for two different numbers.
4. Following the example on page 79 of the Student’s Book, work through the numbers 11 to 20 using the blue and red interlocking cubes. Write on the board the corresponding addition sentences for numbers 11 to 20.

**Activity 3 (25 min): Add by counting on**

*Things you need: a transparent container, two paper cups, 15 marbles*

1. Ask a pupil to put 11 marbles into one paper cup and 4 marbles into the other cup. Next, ask another pupil to write the numbers 11 and 4 on the paper cups accordingly.

2. Tell the class that you are going to add 11 and 4 using the ‘counting on’ method. Ask the class to repeat the words ‘counting on’. Explain to the class that ‘counting on’ means to count in increasing order, e.g. 12 → 13 → 14 → 15. Next write the addition sentence: \(11 + 4\) on the board.

3. Pour the cup with 11 marbles into the transparent container. Then, drop the 4 marbles one at a time into the transparent container as you count aloud from ‘11’ like this: 12 → 13 → 14 → 15. Tell the class that the container now has 15 marbles after adding 4 marbles to 11 marbles. Write ‘15’ to the equation \(11 + 4 = 15\).

4. Repeat steps 1 to 3 for other numbers. Remind the pupils that they should always count from the bigger number.

**Activity 4 (15 min): Class practice**

1. Go through the examples on page 80 of the Student’s Book.

**Homework**

Ask the pupils to do Workbook 1A—Worksheet 20.

---

**Answers**

**Worksheet 20**

1. (a) 13  (b) 15  (c) 14  (d) 18  
2. (a) 11  (b) 12  (c) 11  (d) 20  (e) 17  (f) 19  (g) 18  (h) 20  
3. (a) 18  (b) 15  (c) 13  (d) 17  (e) 14  (f) 11  (g) 12  (h) 10  

**ADDING BY MAKING 10**

**Suggested Duration**

2 periods (80 min)

**Learning Outcomes**

Pupils should be able to:

- use the strategy ‘making 10’ to add two numbers within 20
Instructions

Let’s Learn…

Activity 1 (40 min): Identify the pairs of numbers that make 10

Things you need: 10 red cubes and 10 blue cubes and 2 sets of coloured cards numbered 1 to 9

1. Display 6 red cubes on the table. Ask a pupil to add 4 blue cubes to make 10 cubes altogether. Write on the board $6 + 4 = 10$. Repeat this with other pupils for other combinations of cubes that make 10.

2. Pair up the pupils. Give each pair 2 sets of cards numbered 1 to 9. Mix the cards and display them on the table. Ask the pair to work together to form pairs of numbers that make 10. This is to enhance the pupils’ visual ability to form numbers that make 10 quickly without counting.

3. Ask each pair to practise with each other in memorizing the pairs of numbers that make 10: one pupil will call out a number between 1 to 9 and the other is to quickly say the corresponding number that adds up to 10. If a pupil is not sure, he can refer to the pairs of cards. The pupils take turns to ask each other. Let the pupils practice this as much as possible until they are able to call out pairs of numbers that make 10 quickly and without difficulty.

4. Pupils must be able to identify pairs of numbers that make 10 in order to use the ‘making 10’ method to add numbers.

Activity 2 (30 min): Add by making 10

1. Display 8 red cubes on the display table. Next, add 6 blue cubes. Tell the pupils that you are going show them how to add 8 and 6 by the ‘making 10’ method. Follow the sequence as follows:
   - Write on the board $8 + 6$.
   - Explain to the pupils that the first step is to make 10. Ask the pupils what number combined with 8 makes 10. If the pupils have practiced sufficiently for Activity 1, they would have no problem in identifying 2 as the number straightaway.
   - Show on the table the 8 red cubes combining with the 2 blue cubes to make 10 cubes. Point out to the pupils that the 6 blue cubes have now been separated or broken up into 2 and 4. Next, add 10 and 4 to form 14.
   - Demonstrate on the board as follows:
     
     $8 + 6 = 10 + 4$
     
     $= 14$

2. Repeat step 1 for other pairs of numbers but without using the cubes.

Activity 3 (10 min): Class practice

1. Go through the examples on pages 81–82 of the Student’s Book.

Homework

Ask the pupils to do Workbook 1A—Worksheet 21.
**Answers**

**WORK Sheet 21**

1. (a) 12  (b) 11  (c) 13  (d) 14  (e) 13  (f) 14

2. (b) \(8 + 7 = 10 + 5\)
   \[\begin{array}{c}
   2 \\
   5 \\
   \end{array}\]
   \[= 16\]

(c) \(9 + 9 = 10 + 8\)
   \[\begin{array}{c}
   1 \\
   8 \\
   \end{array}\]
   \[= 18\]

(d) \(7 + 5 = 10 + 2\)
   \[\begin{array}{c}
   3 \\
   2 \\
   \end{array}\]
   \[= 12\]

---

**ADDING USING TENS AND ONES**

**Suggested Duration**

3 periods (120 min)

**Learning Outcomes**

Pupils should be able to:

- relate addition facts within 20 to number bonds
- use the strategy ‘using tens and ones’ to add two numbers within 20

**Instructions**

*Let’s Learn…*

**Activity 1 (15 min): Break up numbers 11 to 20 into ten and ones**

*Things you need: 20 red cubes and 10 blue cubes*

1. Display 14 red cubes on the table. Ask a pupil to break up the 14 red cubes into 4 and 10. Write on the board \(10 + 4 = 14\). Repeat this with other pupils for other numbers from 11 to 20.

**Activity 2 (25 min): Practise breaking up numbers (11 to 20) into ten and ones**

*Things you need: 1 set of coloured cards numbered 1 to 10 and 1 set of cards numbered 11 to 20, one extra number 10 card*

1. Pair up the pupils. Give one pupil a set of cards numbered 11 to 20 and the other pupil the set of cards numbered 1 to 10. Place an extra number 10 card on the table. The pupil holding the cards 11 to 20 will flash out one card and the other pupil is to look for a card
numbered 1 to 10 that correctly matches with the number 10 card on the table. For example, if one pupil flashes out the number 13, the other pupil is to look for the number 3 card and place it side by side with the number 10 card on the table.

2. The pupils take turns to look for the matching card. This is to enhance the pupils’ visual ability to form numbers that make 10 quickly without counting.

3. Pupils must be able to break up numbers (11 to 20) into ten and ones in order to use the ‘add using tens and ones’ method.

**Activity 3 (40 min): Add using tens and ones**

1. Display 13 red cubes on the display table. Next, add on 5 blue cubes. Explain to the pupils that you are going to show them how to add 13 and 5 by using tens and ones. Follow the sequence as follows:
   - Write on the board 13 + 5 as follows:
     \[ 13 + 5 \]
   - Explain to the pupils that the first step is to break up the number 13 into tens and ones. If the pupils have practiced sufficiently for **Activity 1**, they would have no problem in breaking up 13 into 10 and 3 straightaway.
   - Separate the 13 red cubes on the table into 10 and 3. Emphasize again that the 13 red cubes are now broken up into 10 cubes and 3 cubes. Combine the 3 red cubes with the 5 blue cubes to form 8 cubes. Next, add 10 and 8 to form 18.
   - Demonstrate on the board as follows:
     \[ 13 + 5 = 10 + 8 \]
     \[ = 18 \]

2. Repeat the above for other pairs of numbers but without using the cubes.

**Activity 4 (15 min): Class practice**

1. Go through the examples on pages 83–84 of the Student’s Book.

**Homework**
Ask the pupils to do Workbook 1A—Worksheet 22.

### Answers

**WORK Sheet 22**

1. (a) \[ \begin{array}{c}
10 \\
2
\end{array} + \begin{array}{c}
2 \\
4
\end{array} = 10 + 6 \\
= 16
\]

(b) \[ \begin{array}{c}
10 \\
3
\end{array} + \begin{array}{c}
3 \\
5
\end{array} = 10 + 8 \\
= 18
\]

(c) \[ \begin{array}{c}
10 \\
6
\end{array} + \begin{array}{c}
2 \\
3
\end{array} = 10 + 9 \\
= 19
\]

(d) \[ \begin{array}{c}
10 \\
8
\end{array} + \begin{array}{c}
2 \\
7
\end{array} = 10 + 10 \\
= 20
\]
Let’s Explore
Activity 5 (25 min): Work in pairs
1. Ask pupils to work in pairs on the exercise on page 85 of the Student’s Book. The pupils are to write down as many number bonds as they can think of for the numbers shown.

**ADDING THREE NUMBERS**

**Suggested Duration**
2 periods (80 min)

**Learning Outcomes**
Pupils should be able to:
- add three numbers

**Instructions**

*Let’s Learn…*

**Activity 1 (25 min): Add three numbers**
1. Write on the board an addition sentence of three numbers, each less than 10: 2 + 5 + 8. Instruct the pupils to add two of the numbers first and then add the last number as follows:
   - **Step 1:** Add 2 and 5 → 2 + 5 = 7 (use ‘counting on’ method)
   - **Step 2:** Add 7 and 8 → 7 + 8 = 15 (use ‘add by making 10’ method)

2. Write on the board an addition sentence of three numbers with one of them more than 10: 12 + 3 + 4. Lead the pupils to add two of the numbers first and then add the last number as follows:
   - **Step 1:** Add 12 and 3 → 12 + 3 = 15 (use ‘add using tens and ones’ method)
   - **Step 2:** Add 15 and 4 → 15 + 4 = 19 (use ‘add using tens and ones’ method)
OR

**Step 1:** Add 3 and 4 \( \Rightarrow 3 + 4 = 7 \) (use ‘counting on’ method)

**Step 2:** Add 7 and 12 \( \Rightarrow 12 + 7 = 19 \) (use ‘add by making 10’ method)

**Activity 2 (15 min): Class practice**

1. Go through the examples on page 86 of the Student’s Book.

**Homework**

Ask the pupils to do Workbook 1A—Worksheet 23.

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**Answers**

**Worksheet 23**

1. (b) 11, 14  (c) 11, 19  (d) 13, 17

**Let’s Think**

**Activity 3 (30 min): Challenging activity**

1. Let pupils try the challenging activity on page 87 of the Student’s Book. It is acceptable if some pupils are not able to obtain the answer. Show the pupils the answer as follows and go through with them how you do addition for each row. The important thing is to help pupils enhance their ability to do addition.

<table>
<thead>
<tr>
<th>6</th>
<th>7</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5</td>
<td>9</td>
</tr>
<tr>
<td>8</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

**Let’s Try…**

**Activity 4 (10 min): Individual practice**

1. Ask the pupils to try the exercises on page 88 of the Student’s Book.

---

<table>
<thead>
<tr>
<th>88</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. (a) 20  (b) 19  2. (a) 12  (b) 17</td>
</tr>
<tr>
<td>3. (a) 20  (b) 18  4. (a) 16  (b) 15</td>
</tr>
</tbody>
</table>
SUBTRACTING BY COUNTING BACK

Suggested Duration
1 period (40 min)

Learning Outcomes
Pupils should be able to:
• use the strategy ‘counting back’ to subtract numbers within 20

Instructions
Let’s Learn...
Activity 1 (25 min): Subtract by counting back
Things you need: a transparent container, 20 marbles
1. Put 18 marbles into the transparent container. Explain to the class that you are going to subtract 5 marbles using the ‘counting back’ method. Ask the class to repeat the words ‘counting back’. Explain to the class that ‘counting back’ means to count in decreasing order, e.g. 7 → 6 → 5 → 4 →.
2. Take out 5 marbles one at a time as you count aloud from ‘18’ like this 18 → 17 → 16 → 15 → 14 → 13. Tell the class that the container now has 13 marbles after subtracting 5 marbles from the 18 marbles. Write ‘18 – 5 = 13’.
3. Repeat steps 1 and 2 for different numbers of marbles.

Activity 2 (15 min): Class practice
1. Go through the examples on page 89 of the Student’s Book.

Homework
Ask pupils to do Workbook 1A—Worksheet 24.

Answers

Worksheet 24
1. (a) 16 (b) 12 (c) 12 (d) 4 (e) 6 (f) 14 (g) 6 (h) 9 (i) 9 (j) 15 (k) 8 (l) 6
SUBTRACTING BY USING TENS AND ONES

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• relate subtraction facts within 20 to number bonds
• use the strategy ‘using tens and ones’ to subtract numbers within 20

Instructions
Let’s Learn...

Activity 1 (40 min): Subtract by using tens and ones
1. Using number bonds, show the class that a number (up to 20) can be broken up into ten and ones as follows:
   
   For example:

   15
   /  \  
  10   5

2. Show the class how to subtract 6 from 18 as follows:
   • First, use number bonds to split 18 into 10 and 8 as follows:
     
     18 – 6 = ___
     10   8
   • Next, subtract 6 from 8 ➔ 8 – 6 = 2
   • Finally, add 10 and 2 ➔ 10 + 2 = 12

3. Show the class another example: 17 – 8 = ___
   • First, use number bonds to split 17 into 10 and 7 as follows:
     
     17 – 8 = ___
     10   7
   • Next, subtract 8 from 10 ➔ 10 – 8 = 2
     (Lead the pupils to see that instead of subtracting 8 from 7, which is smaller than 8 and therefore not possible, you have done a subtraction of 8 from 10. Remind the class to always subtract from a bigger or equal number.)
   • Finally, add 7 and 2 ➔ 7 + 2 = 9
Activity 2 (20 min): Class practice
1. Go through the examples on pages 90–92 of the Student's Book.

Homework
Ask pupils to do Workbook 1A—Worksheet 25.

**Answers**

**Worksheet 25**

1. (b) \[19 - 7 = 12\]
   \[10 - 9 = \]
   \[9 - 7 = 2\]
   \[10 + 2 = 12\]

   (c) \[15 - 2 = 13\]
   \[10 - 9 = \]
   \[5 - 2 = 3\]
   \[10 + 3 = 13\]

   (d) \[19 - 4 = 15\]
   \[10 - 9 = \]
   \[9 - 4 = 5\]
   \[10 + 5 = 15\]

2. (a) 7
   (b) \[13 - 6 = 7\]
   \[10 - 6 = 4\]
   \[3 + 4 = 7\]
   \[4 + 5 = 9\]

   (c) \[14 - 5 = 9\]
   \[10 - 5 = 5\]
   \[4 + 5 = 9\]

   (d) \[18 - 9 = 9\]
   \[10 - 9 = 1\]
   \[8 + 1 = 9\]
   \[10 - 7 = 3\]

   (e) \[16 - 7 = 9\]
   \[10 - 7 = 3\]
   \[6 + 3 = 9\]

   (f) \[15 - 8 = 7\]
   \[10 - 8 = 2\]
   \[5 + 2 = 7\]

**Let’s Try…**

Activity 3 (20 min): Individual practice
1. Ask the pupils to try the exercises on page 93 of the Student’s Book.

**Page 93**

1. (a) 15  (b) 7  (c) 15  (d) 13
2. (a) 11  (b) 12  (c) 8  (d) 9
WORD PROBLEMS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• solve one-step word problems involving addition and subtraction within 20

Instructions
Let's Learn...
Activity 1 (40 min): Solve word problems using additions or subtractions
1. Go through examples on pages 94–96 of the Student's Book with the class. For addition word problems, use number bonds and make 10 methods. For subtraction word problems, use number bonds and counting back methods.
2. Once the pupils have found the answers to the word problems using the above methods, teach them how to write the complete answers neatly in statements. Each complete answer should have either an addition or subtraction sentence and an answer statement.
3. Tell the pupils to look for clue words or phrases that point to addition or subtraction:
   For addition
   • ‘How many marbles does John have altogether?’
   • ‘What is the total number of children who attended school?’
   For subtraction
   • ‘How many fewer teddy bears than dolls...?’
   • ‘How many more books than pens...?’
4. Remind the pupils that for subtraction, they must always subtract from a bigger number and not the other way round.
5. Provide more word problems for pupils to practice.

Let's Try...
Activity 2 (20 min): Individual practice
1. Ask the pupils to try the exercises on page 97 of the Student’s Book. Ask a few pupils to share their answers on the board and then ask some other pupils to check if the answers are correct.

Homework
Ask the pupils to do Workbook 1A—Worksheet 26 and Practice 7.
Revision (20 min)

Fun With Maths

Things you need: 3 dice and counters

1. Pair up the pupils and let them play the game on page 98 of the Student’s Book.
2. Revise and go over the pupils’ homework.

Answers

page 97

1. Peter has 20 locks altogether.
2. Mother has 11 cups left.
3. The monkey has 16 bananas altogether.
4. Aidan had 9 cupcakes left.

Worksheet 26

1. 6 + 7 = 13  2. 12 – 8 = 4  3. 8 + 7 = 15  4. 20 – 13 = 7  5. 6 + 11 = 17
6. 7 + 4 = 11  7. 15 – 5 = 10  8. 8 – 3 = 5  9. 20 – 9 = 11  10. 5 + 6 = 11

Practice 7

1. 9 + 6 = 15  4 + 9 = 13  6 + 8 = 14  8 + 8 = 16  7 + 5 = 12
2. (a) 5  (b) 7  (c) 9  (d) 11  (e) 7  (f) 5  (g) 9  (h) 9
3. (a) +  (b) –  (c) –  (d) +  (e) +  (f) –  (g) +  (h) –
4. (a) 12 + 5  (b) 13 – 2  (c) 13 + 5  (d) 12 – 2  (e) 13 + 2  (f) 12 – 8
5. (a) 12  (b) 18  (c) 17
6. 7 – 3 = 4
7. 20 – 10 = 10
Unit 8: Shapes and Patterns

RECOGNIZING COMMON SHAPES

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
• identify and name the four basic shapes from 2-D and 3-D objects

Instructions
Let’s Learn…

Activity 1 (20 min): Recognize and name the common shapes
Things you need: 40 sheets of A4 coloured papers, each paper has the outline of the 4 common shapes of circle, square, triangle and rectangle printed on it. 40 pairs of art and craft scissors.

1. Give each pupil one pair of art and craft scissors and one coloured sheet with the outline of the four common shapes pre-printed. Ask every pupil to cut out the four common shapes.

2. Write the words ‘circle’, ‘square’, ‘triangle’ and ‘rectangle’ on the display board and glue one set of the cut-out shapes corresponding to the words. Ask every pupil to identify the shape as you go through the four words one at a time. Take time to explain each of the shapes as follows:
   • circle—emphasize that the edge or side is round and smooth
   • square—emphasize that there are four straight edges or sides and every side is of the same length
   • triangle—emphasize that there are three straight edges or sides and the sides may or may not be of equal length
   • rectangle—emphasize that there are four straight edges or sides, but one pair of the sides is longer than the other pair

3. As you name each of the shapes, ask the pupils to repeat the name. Lead the pupils to write the words ‘circle’, ‘square’, ‘triangle’ and ‘rectangle’ on the shapes that they have cut out.

4. When the lesson is over, ask four pupils to collect all the cut-out shapes. Each pupil is to collect one shape. These shapes will be reused in Activity 4.

Activity 2 (20 min): Identify common shapes found in things around us
1. Ask the pupils to look around for objects that have any of the four common shapes. Ask a few pupils to share what they have discovered.
Activity 3 (20 min): Class practice
1. Go through the examples on pages 100–101 of the Student’s Book.

Let’s Explore

Activity 4 (20 min): Create a picture using the common shapes
Things you need: coloured paper, drawing paper, scissors, glue sticks
1. Hand out a variety of coloured paper and drawing paper to all the pupils. Explain that they are to form the picture of the robot shown on page 102 of the Student’s Book by using the four common shapes. First, they are to draw and cut out the shapes that are needed to form the picture. The pupils can use the shapes that they have cut out earlier during Activity 1. Next, they are to glue the shapes on the drawing paper to form the picture of the robot.

Let’s Think

Activity 5 (20 min): Challenging thinking sum
1. Ask the pupils to try the challenging exercise on page 102 of the Student’s Book. Write on the board five possible answers: ‘4 triangles’, ‘6 triangles’, ‘8 triangles’, ‘10 triangles’, and ‘12 triangles’ and ask every pupil to come forward and put a tick beside the answer which they think is the correct one. Demonstrate the correct answer by tracing out all the triangles.

Let’s Try…

Activity 6 (20 min): Class practice
1. Go through the exercises on page 103 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1A—Worksheet 27.

Answers

WORK(e)heet 27
2. There are 4 triangles altogether.
3. (a) B and D (b) rectangle
8. squares: 1 triangles: 3 circles: 8 rectangles: 6

GROUPING SHAPES

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• describe and classify shapes
Instructions

Let’s Learn...

Activity 1 (40 min): Describe the different shapes

Things you need: cut-out common shapes in a bag and a handkerchief

1. Discuss the different common shapes with the pupils and describe each of them using words such as round, straight, sharp corners, equal length, edges, etc.
2. Place the shapes in a bag. Blindfold a pupil and ask him to pick a shape from the bag. He has to feel the shape, describe two features of it and guess what the shape is.
3. Repeat the steps with the rest of the pupils so that everyone has the chance to describe and identify the different common shapes.

Activity 2 (40 min): Group the four common shapes by their shapes, size and colours

1. Explain to the pupils that they can group the common shapes by their shapes, sizes and colours.
2. Go through the examples on pages 104–105 of the Student’s Book.
   (Please note that for pupils with colour-blindness, you may need to provide special assistance as they may have difficulty in identifying colours.)

Additional Activity (40 min): Fun game to reinforce learning

Things you need: 40 cut-out shapes of different colours and sizes

1. Give each pupil a shape. Instruct the pupils that in a given time of 5 minutes, they are to go around to look for other pupils who have the same shape and group together.
2. Repeat step 1 for grouping by size and colour.

Homework

Ask pupils to do Workbook 1A—Worksheet 28.

Answers

Worksheet 28

3. Triangles: A, B, E
   Circles: C, D, F
   Rectangles: G, H

RECOGNIZING PATTERNS

Suggested Duration

4 periods (160 min)

Learning Outcomes

Pupils should be able to:
• make and complete patterns with 2-d cut-outs according to one or two of the attributes: shape, size or colour
• make and complete patterns with 3-D models: cube, cuboid, cone, cylinder

Instructions

Let’s Learn...

Activity 1 (40 min): Make and complete patterns of 2-D cut-outs according to shape
Things you need: cut-outs of circles, squares, triangles and rectangles
1. Display some cut-outs of circles and squares and arrange them in a pattern as follows:

   ○ □ ○ □ ○ □ ○ □

2. Explain to the class that this is an example of a simple pattern based on shapes. Point out to the pupils that the circle and square repeat. Explain that in order to identify a pattern, they need to look for a set of items that repeat itself.

3. Show more examples of patterns according to shapes using the cut-outs:

   ○ □ △ ○ □ △ ○ □ △

   △ ○ ○ △ ○ ○ △ ○ ○

4. Arrange the same cut-outs to form a pattern. Ask a pupil to continue the pattern with four more pieces of cut-outs. Repeat this for 10 more pupils.

5. Give each pupil a set of cut-outs (4 circles, 4 rectangles and 4 triangles) and instruct them to form any pattern according to shapes using the cut-outs. Go from table to table to inspect the patterns created by the pupils.

Activity 2 (20 min): Make and complete patterns of 2-D cut-outs according to size
Things you need: cut-outs of different sizes of stars
1. Display cut-outs of two different sizes of stars as follows:

   ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

2. Explain to the class that this is another example of a simple pattern, but is based on size rather than shape. Point out to the pupils that the small and big stars repeat. Explain that in order to identify a pattern, they need to look for a set of items that repeats.

3. Show more examples of patterns based on size using the cut-outs as follows:
Activity 3 (20 min): Make and complete patterns of 2-D cut-outs according to colours
Things you need: cut-outs of different coloured triangles
1. Display cut-outs of two different coloured triangles as follows:

```
  △  ▢  △  ▢  △  ▢  △  ▢
```

2. Explain to the class that this is another example of a simple pattern, but is based on colour rather than shape or size. Point out to the pupils that the yellow and red triangles repeat. Explain that in order to identify a pattern, they need to look for a set of items that repeats.

3. Show more examples of patterns based on colours using the cut-outs as follows:

```
  △  ▢  △  ▢  △  ▢  △  ▢  □  □  □  □
```

Activity 4 (20 min): Make and complete patterns of 3-D models
1. Show the class 3-D models of cubes, cuboids, cones and cylinders. Go through the name of each of the 3-D models and have the class repeat the words after you.

2. Ask a few volunteers to form different patterns using the 3-D models. Point out to the class that forming patterns using 3-D models is exactly the same as using 2-D cut-outs.

3. Select 10 pupils to place the 3-D models one at a time to form a pattern. Do this with another group of 10 pupils.

4. Go through the examples on pages 106–108 of the Student’s Book.

Let’s Try...

Activity 5 (20 min): Class practice
1. Go through the exercises on page 109 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1A—Worksheet 29 and Practice 8.

Revision (40 min)

Fun with Maths
Things you need: make copies of page 110 of the Student’s Book
1. Give each pupil a copy of page 110 of the Student’s Book. Ask the pupils to pair up two pieces to form 1 circle, 1 square and 2 rectangles.
2. Next, ask the pupils to colour each pair with the same colour and use different colours for different pairs.

3. Revise and go over the pupils’ homework.

**Answers**

**Worksheet 29**

4. (a) B  (b) B  (c) B

6. (a) A  (b) B  (c) A

7. (a) A  (b) A

**Practice 8**

2. (b) 4

**Revision 2**

**Suggested Duration**

2 periods (80 min)

**Answers**

1. circle (coin), rectangle (book), triangle (sign)

5. (a) Set A has 3 more items than set B.  
   (b) Set C has 4 more items than set D.

6. (e) 4 files  (f) 9

7. (a) $5 + 6 = 11$  $11 - 6 = 5$  
   (b) $7 + 3 = 10$  $10 - 3 = 7$  
   (c) $4 + 8 = 12$  $12 - 8 = 4$  
   (d) $7 + 4 = 11$  $11 - 4 = 7$

8. (a) fourth  (b) first  (c) first  (d) fourth  (e) five

10. (a) 7  (b) 9  (c) 16  (e) 2
Unit 9: Numbers to 100

COUNTING

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
• count by tens to tell the number of objects in a given set
• read and write numbers in numerals and words

Instructions
Let’s Learn...

Activity 1 (15 min): Count numbers from 21 to 30
Things you need: 20 cubes

1. Revise with the class numbers up to 20. Ask the class to count from 1 to 10 and select pupils to write the numbers 1 to 10 in numerals and in words on the board. Ask the class to continue counting from 11 to 20 and encourage a few pupils to write the numbers 11 to 20 in numerals and words on the board. Recall the number 0 and its corresponding word zero.

2. Display 20 cubes on the display table. Count them starting from 1: 1 → 2 → 3… → 20. Then add one cube and count 21. Explain that 21 is made up of 20 and 1. Write on the board, ‘21, twenty-one’.

3. Repeat the above for the rest of the numbers until 30.

4. Go through all the numbers from 21 to 30 with their corresponding words.

Activity 2 (10 min): Count in tens up to 100
Things you need: 10 cubes and 10 base ten blocks

1. Scatter 10 cubes on the table and ask the class to count them together with you. Explain to the pupils that each cube represents 1 one and replace the 10 cubes with a base ten block. Tell the class that 10 ones make 1 ten. Write on the board ‘10 ones = 1 ten = 10 = ten’.

2. Put 10 more cubes on the table and ask the class to count them together with you again. Explain that this is the second ten. Replace it with a second base ten block and place it side by side with the first base ten block and ask the class ‘How many tens have we got now?’ Lead the class to see that 2 tens are made up of 20 cubes i.e. $10 + 10 = 20$ and $1\text{ ten} + 1\text{ ten} = 2\text{ tens}$. Write ‘20 ones = 2 tens = 20 = twenty’.

3. Repeat the above for 30, 40, 50, 60, 70, 80 and 90 and then introduce 100 to the class.

Activity 3 (15 min): Count in ones and tens up to 100
Things you need: transparent container, 100 cubes and 10 base ten blocks
1. Put 37 cubes into the transparent container without disclosing the number of cubes to the pupils. Ask the pupils to guess the number of cubes.

2. Ask two pupils to come forward to count the cubes. Advise them to group them in ones and tens. For every 10 cubes counted, they can exchange them with one base ten block. Once they have finished, display the cubes and base ten blocks separately on the table for all to see.

3. Count the base ten blocks and cubes together with the class as follows:
   - 10 → 20 → 30
     (read as ten → twenty → thirty and write ‘30’, ‘thirty’)
   - 1 → 2 → 3 → 4 → 5 → 6 → 7 →
     (read as one → two → three → four → five → six → seven and write ‘7’, ‘seven’)
   Then write the number 37, thirty-seven on the board.

4. Repeat No. 1 to 3 for different numbers with different pupils.

5. Emphasize that there is a hyphen joining the two words.

Activity 4 (15 min): Recognize, read and write numbers up to 100 in numerals and in words

Things you need: cards numbered 1 to 100 with their corresponding words printed on the opposite sides

1. Hold up a number card showing the number as a numeral. Ask a pupil to read out the number and write the number on the board in words. Repeat this for other numbers.

2. Hold up a number card showing the number in words. Ask a pupil to read out the number and write on the board the number as a numeral. Repeat this for other numbers.

3. Play a simple game to reinforce the pupils’ ability to recognize numbers:
   - Hold up two number cards, one on the left and one on the right, for 5 seconds before putting them down.
   - Ask a pupil to say the two numbers that he has just seen and then write them on the board, both in numerals and in words.
   - You can either show both numbers as numerals or both in words or one as a numeral and the other in words.
   - You may also repeat the game for a shorter time.

Activity 5 (10 min): Class practice

1. Go through the examples on pages 112–116 of the Student’s Book.

Let’s Explore

Activity 6 (15 min): Fun activity

1. Lead the class in playing the Let’s Explore activity on page 117 of the Student’s Book.
**Let's Think**

**Activity 7 (25 min): Activity to stimulate thinking**
1. Let the pupils try the thinking exercise on page 117 of the Student's Book. Ask the pupils to share their answers with their partners.

**Let's Try...**

**Activity 8 (15 min): Individual practice**
1. Ask pupils to do the exercises on page 118 of the Student's Book.

**Homework**
Ask pupils to do Workbook 1B—Worksheets 30 and 31.

**Answers**

**page 118**

1. (a) thirty-five  (b) forty-two
2. 57: 5 tens 7 ones  63: 6 tens 3 ones  79: 7 tens 9 ones  
   84: 8 tens 4 ones  91: 9 tens, 1 one

**WORKSHEET 30**

1. 28 towels, 33 bars of soap, 43 tubes of toothpaste, 50 toothbrushes
3. (a) 2  (b) 4  (c) 3  (d) 5

**WORKSHEET 31**

1. From top to bottom: 50, 30, 70, 40
2. (a) fifty-two  (b) seventy-five  (c) nineteen
3.  
<table>
<thead>
<tr>
<th></th>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>sixty-five</td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>forty-one</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>fifty-three</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>eighty-nine</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>one hundred</td>
<td>10</td>
<td>0</td>
</tr>
</tbody>
</table>
4. (a) 50  (b) 86  (c) 29  (d) 74  (e) 31  (f) 95
5. (a) 2, 6, 12, 14, 19, 21, 26, 29, 31, 34, 37, 42, 45, 47, 48  
   (b) 52, 53, 54, 56, 57, 60, 61, 62, 63, 66, 67, 38, 69
COMPARING AND ORDERING NUMBERS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• arrange numbers in order
• compare the number of objects in two or more sets
• compare and order numbers

Instructions

Let’s Learn...

Activity 1 (10 min): Revise the comparison phrases
1. On the board write all the comparison phrases: more than, less than, greater than, smaller than, bigger than, fewer than and as many as. Revise by asking pupils to give an example for each of the phrases.
2. Play a simple game of guessing the number, using the phrases as clues:
   • Think of a 2-digit number
   • Ask the class to guess the number
   • Give clues such as ‘It is less than that’ or ‘it is more than that’
   • Continue with guesses and clues until someone gives the right answer.

Activity 2 (15 min): Compare numbers up to 100
1. Explain to the class the two simple steps to identify which number is greater or smaller between two 2-digit numbers:
   Step 1: Compare the digit in the tens place.
   • Move to Step 2 if the digits are the same.
   • If not, the number with the bigger digit is the greater number.
   Step 2: Compare the digit in the ones place.
   • If the digits are the same, both numbers are identical.
   • If not, the number with the bigger digit is the greater number.
2. Provide examples for the class to practise.

Activity 3 (15 min): Calculate ‘1 more than’, ‘10 more than’, ‘1 less than’, and ‘10 less than’
1. Write the following questions on the board:
   • What number is 1 more than 56?
   • What number is 10 more than 73?
2. Give the answers to the above questions and ask the pupils if they notice anything common about the way the answers were obtained? Lead them to see that both questions require adding the two numbers. Hence, point out to them that when the phrase ‘more than’ is used, an addition is required.

3. Repeat No. 1 and 2 for ‘less than’ and lead the pupils to see that when the phrase ‘less than’ is used, they need to do a subtraction.

**Activity 4 (15 min): Understand the meaning of ascending and descending**

1. Recall the meaning of ascending and descending by drawing a flight of steps to represent ascending and descending as going up and going down respectively. Explain that when going up from level 1 to 100, the numbers get bigger and this is called ascending and when going down from level 100 to 1, the numbers get smaller and this is called descending.

   Ascending order—smallest number to biggest number

   Descending order—biggest number to smallest number

2. Play a game as follows:
   - Divide the class into 4 groups.
   - Give each pupil a slip of paper with a 2-digit number written on it.
   - At the start signal, pupils in each group are to arrange themselves in a straight line in ascending order of their numbers.
   - The team that correctly completes the arrangement first wins.

**Activity 5 (10 min): Class practice**

1. Go through the examples on pages 119–121 of the Student’s Book.

   **Let’s Try…**

**Activity 6 (15 min): Individual practice**

1. Ask pupils to do the exercises on page 122 of the Student's Book.

**Homework**

Ask pupils to do Workbook 1B—Worksheet 32.

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**Answers**

*Let’s Try...* page 122

(a) R  (b) Q  (c) R, P, Q

**Worksheet 32**

1. (a) smaller  (b) greater  (c) smaller  (d) greater  (e) smaller
2. 5 tens 5 ones  5 tens 3 ones
3. (a) 54  (b) 82
NUMBER PATTERNS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• recognize number patterns

Activity 1 (20 min): Write number patterns using counting on and counting back in ones and in tens
1. Explain to the class that a number pattern is a set of numbers that follows a certain pattern. The number may get bigger or smaller as it goes. Examples are:
   • 3, 4, 5, 6, 7 is a number pattern whose numbers get bigger by 1 each time
   • 20, 30, 40, 50 is a number pattern whose numbers get bigger by 10 each time
   • 9, 8, 7, 6, 5 is a number pattern whose numbers get smaller by 1 each time
   • 90, 80, 70, 60, 50 is a number pattern whose numbers get smaller by 10 each time
   • 50, 80, 40, 10, 90 is not a number pattern
   • 3, 6, 2, 8, 7 is not a pattern
2. Write on the board the following sets of number patterns:
   • 30, 31, 32, 33, _____, _____
   • 29, 39, 49, 59, _____, _____
   • 66, 56, 46, 36, _____, _____
   • 89, 88, 87, 86, _____, _____
3. Ask the class which digit in each of the number patterns changes and what is the pattern of change (whether is it more by 1 or 10 or less by 1 or 10). Lead the class to see that to obtain the next number in the number pattern, they have to either count on i.e to add or count back i.e to subtract in ones or tens.

Activity 2 (10 min): Class practice
1. Go through the examples on page 123 of the Student’s Book.

Let’s Try…

Activity 3 (10 min): Individual practice
1. Ask pupils to do the exercises on page 124 of the Student’s Book.
Homework
Ask pupils to do Workbook 1B—Worksheet 33 and Practice 9.

(Revision (40 min

Fun with Maths
Things you need: a bag of 10 red beans and 20 black beans
1. Group the pupils into groups of 3. Ask them to play the game on page 125 of the Student's Book.
2. Revise and go over the pupils' homework.

Answers

green squares: + 1    purple squares: + 10

Problem 33
1. (a) 55    (b) 80    (c) 40    (d) 45    (e) 14, 24    (f) 80, 83

Practice 9
1. (a) 90    (b) 57    (c) 69    (d) 56    (e) 78
2. (a) 79    (b) 68    (c) 50
3. Set A: 6 tens 4 ones    Set B: 7 tens 2 ones    Set C: 7 tens 3 ones
   (a) Set C    (b) Set A    (c) Set C
Unit 10: Addition and Subtraction within 100

ADDING TENS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- add tens

Instructions

Let’s Learn...

Activity 1 (20 min): Revise with the pupils numbers up to 100

Things you need: stacks of cards numbered 1 to 100

1. Revise with the pupils numbers up to 100 by encouraging the pupils to play a simple game as follows:
   - Group the pupils into groups of 10 and give each group a stack of cards numbered 1 to 100 which is distributed equally among the 10 pupils, so that each pupil has 10 cards in his hand.
   - Call out any number from 1 to 100. Every pupil is to search through his 10 cards and if he has the card with the number that was called out, he is to quickly stand up, lift up his card and shout ‘BINGO’. The pupil who stood up first with the correct card and shouted ‘BINGO’ will have his card taken. The game continues until one group finishes all its cards and that group is the winner.
2. Instead of calling out the number, you may also write the number in words or numerals on the board.

Activity 2 (20 min): Add tens to numbers up to 100

Things you need: different coloured cubes

1. Display 40 blue cubes on the table. Arrange them in groups of 10 to show 4 tens. Next, add another 50 cubes of a different colour and arrange them in groups of 10 to show 5 tens. Ask the pupils, ‘How many tens are there altogether?’ Count with the pupils the total number of tens using count one method as follows:
   - 1 ten $\rightarrow$ 2 tens $\rightarrow$ 3 tens $\rightarrow$ 4 tens $\rightarrow$ 5 tens $\rightarrow$ 6 tens $\rightarrow$ 7 tens $\rightarrow$ 8 tens $\rightarrow$ 9 tens
   - or
   - 10 $\rightarrow$ 20 $\rightarrow$ 30 $\rightarrow$ 40 $\rightarrow$ 50 $\rightarrow$ 60 $\rightarrow$ 70 $\rightarrow$ 80 $\rightarrow$ 90
2. Show your workings on the board as follows:

\[
\begin{align*}
40 & \quad + \quad 50 \quad = \quad 90 \\
\downarrow & \quad \downarrow \quad \downarrow \\
4 \text{ tens} & \quad + \quad 5 \text{ tens} \quad = \quad 9 \text{ tens}
\end{align*}
\]

3. Write on the board, \(4 + 5 = 9\) and compare this with \(40 + 50 = 90\). Show the similarity as follows:

\[
\begin{align*}
4 & \quad + \quad 5 \quad = \quad 9 \\
\downarrow & \quad \downarrow \quad \downarrow \\
40 & \quad + \quad 50 \quad = \quad 90
\end{align*}
\]

4. Display 35 blue cubes on the display table. Add another 40 red cubes. Write on the board the addition sentence: \(35 + 40 = \_\_\_.\)

5. Show the class how to add using number bonds as follows:
   - First, use number bonds to split 35 into 30 and 5 as follows:
     \[
     \begin{align*}
     35 & \quad + \quad 40 \quad = \quad ______ \\
     \downarrow & \quad \downarrow \\
     30 & \quad 5
     \end{align*}
     \]
   - Next, add the tens \(\Rightarrow\) \(30 + 40 = 70\)
   - Finally, add 70 and 5 \(\Rightarrow\) \(70 + 5 = 75\)

6. Provide more examples for pupils to practise.

**Activity 3 (20 min): Class practice**
1. Go through the examples on page 127 of the Student’s Book.

**Let’s Try…**

**Activity 4 (20 min): Individual practice**
1. Ask the pupils to try the exercises on page 128 of the Student’s Book.

**Homework**
Ask the pupils to do Workbook 1B—Worksheet 34.

**Answers**

(a) 80  (b) 60  (c) 95  (d) 70  (e) 87  (f) 83
**Worksheet 34**

1. (a) 90  (b) 80  (c) 100  (d) 60  (e) 40  (f) 80  (g) 80  (h) 90
2. 20 + 50 = 70  60 + 20 = 80  40 + 10 = 50
   20 + 20 = 40  50 + 40 = 90  30 + 30 = 60
3. 40 + 30 = 70  30 + 10 = 40  40 + 20 = 60  20 + 10 = 30
   20 + 30 = 50  30 + 70 = 100  80 + 10 = 90
4. (a) 42  (b) 66  (c) 83  (d) 65  (e) 76  (f) 92  (g) 81
5. (a) 30 and 7, 77  (b) 10 and 4, 94  (c) 20 and 4, 54  (d) 60 and 3, 73

**ADDING ONES (1)**

**Suggested Duration**
1 period (40 min)

**Learning Outcomes**
Pupils should be able to:
- add ones without renaming

**Instructions**

*Let's Learn...*

**Activity 1 (30 min): Add ones to numbers up to 100 without renaming**

1. Show the class how to add ones to numbers using number bonds as follows:
   
   E.g. 42 + 7
   
   • First, use number bonds to split 42 into 40 and 2 as follows:
     
     \[
     42 \quad + \quad 7 \quad = \quad ____ \\
     40 \quad 2
     \]

   • Next, add the ones ➔ 2 + 7 = 9
     (Point out that since 9 is less than 10, is no need to rename into ten and ones.)
   
   • Finally, add 40 and 9 ➔ 40 + 9 = 49

2. Provide a few more examples on adding ones without renaming for pupils to practise.

**Activity 2 (10 min): Class practice**

1. Go through the examples on page 129 of the Student’s Book.
Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• add ones with renaming

Instructions
Let’s Learn…
Activity 1 (30 min): Add ones to numbers up to 100 with renaming
1. Write on the board, 56 + 7. Show how to add the ones with renaming as follows:
   • Use number bonds to split 56 into 50 and 6 as follows:
     \[
     \begin{array}{c}
     56 \quad + \quad 7 \\
     \hline
     50 \quad 6
     \end{array}
     \]
   • Use number bond again to split 7 into 4 and 3 as follows:
     \[
     \begin{array}{c}
     56 \quad + \quad 7 \\
     \hline
     4 \quad 3
     \end{array}
     \]
     (Explain to the pupils why you have chosen 4 and 3 as the number bond pattern for 7 instead of other patterns such as 5 and 2 or 6 and 1. The reason is because you want to make 10 i.e. 6 + 4 = 10)
   • Add 4 and 6 to make 10 \(\Rightarrow\) 4 + 6 = 10
   • Rename the 10 ones into 1 ten
   • Add 5 tens and 1 ten \(\Rightarrow\) 50 + 10 = 60
   • Finally, add 60 and 3 \(\Rightarrow\) 60 + 3 = 63
2. Provide more examples involving adding ones with renaming for pupils to practise.

Activity 2 (10 min): Class practice
1. Go through the examples on pages 130–131 of the Student’s Book.

Activity 3 (20 min): Work in pairs
Things you need: work in pairs
1. Pair up the pupils. Each pair is given two stacks of cards. One pupil will draw out two cards to form one 2-digit number and another card to form one 1-digit number. The other pupil will add the two numbers. The pupils take turns to draw the cards and add the numbers.
Let’s Try…
Activity 4 (20 min): Individual practice
1. Ask the pupils to try the exercises on page 132 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1B—Worksheets 35 and 36.

Answers

(a) 29  (b) 68  (c) 97  (d) 44  (e) 52  (f) 61  (g) 70

**Worksheet 35**
1. (b) 47  (c) 39  (d) 54  (e) 29  (f) 49

**Worksheet 36**
1. (b) 68 + 4 = 72  (c) 57 + 6 = 63  (d) 35 + 7 = 42
   
   68 + 4
   \[
   \begin{array}{ccc}
   60 & 8 & 2 \\
   \hline
   60 & 8 & 2 \\
   \end{array}
   \]
   \[\begin{array}{ccc}
   50 & 7 & 3 \\
   \hline
   50 & 7 & 3 \\
   \end{array}\]
   \[\begin{array}{ccc}
   30 & 5 & 5 \\
   \hline
   30 & 5 & 5 \\
   \end{array}\]

   8 + 2 = 10  7 + 3 = 10  5 + 5 = 10
   60 + 10 = 70  50 + 10 = 60  30 + 10 = 40
   70 + 2 = 72  60 + 3 = 63  40 + 2 = 42

   (e) 76 + 8 = 84  (f) 83 + 9 = 92  (g) 28 + 3 = 31
   
   76 + 8
   \[
   \begin{array}{ccc}
   70 & 6 & 4 \\
   \hline
   70 & 6 & 4 \\
   \end{array}
   \]
   \[\begin{array}{ccc}
   80 & 3 & 7 \\
   \hline
   80 & 3 & 7 \\
   \end{array}\]
   \[\begin{array}{ccc}
   20 & 8 & 2 \\
   \hline
   20 & 8 & 2 \\
   \end{array}\]

   6 + 4 = 10  3 + 7 = 10  8 + 2 = 10
   70 + 10 = 80  80 + 10 = 90  20 + 10 = 30
   80 + 4 = 84  90 + 2 = 92  30 + 1 = 31

   (h) 47 + 5 = 52  (i) 54 + 7 = 61  (j) 73 + 8 = 81
   
   47 + 5
   \[
   \begin{array}{ccc}
   40 & 7 & 3 \\
   \hline
   40 & 7 & 3 \\
   \end{array}
   \]
   \[\begin{array}{ccc}
   50 & 4 & 1 \\
   \hline
   50 & 4 & 1 \\
   \end{array}\]
   \[\begin{array}{ccc}
   70 & 3 & 7 \\
   \hline
   70 & 3 & 7 \\
   \end{array}\]

   7 + 3 = 10  4 + 6 = 10  3 + 7 = 10
   40 + 10 = 50  50 + 10 = 60  70 + 10 = 80
   50 + 2 = 52  60 + 1 = 61  80 + 1 = 81
Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• add tens and ones without renaming

Instructions
Let’s Learn...

Activity 1 (40 min): Add tens and ones to numbers up to 100 without renaming
1. Tell the pupils to remember the following two simple steps in adding numbers within 100:
   Step 1: Add the ones
   Step 2: Add the tens
2. Emphasize to the pupils that the steps must be in the order from ones to tens.
3. Write on the board the addition sentence 54 + 41 = ___. Explain that the addition sentence can also be written vertically as follows:
\[
\begin{array}{c}
5 \\
+ 4
\end{array}
\begin{array}{c}
4 \\
1
\end{array}
\]
4. Indicate ‘Tens’ and ‘Ones’ over the digits as follows:
   Tens Ones
   \[
   \begin{array}{c}
   5 \\
   + 4
   \end{array}
   \begin{array}{c}
   4 \\
   1
   \end{array}
   \]
5. Emphasize that the digits must be properly aligned so that the digits are in the right columns.
6. Go through the two steps in adding the two numbers. Point out that since 4 + 1 = 5 is less than 10, there is no need to rename ones as ten.
7. Provide more examples involving adding tens and ones without renaming for pupils to practise. Encourage the pupils to show their workings on the board.

Activity 2 (40 min): Class practice
1. Ask the pupils to turn to page 132 of the Student’s Book. Go through with the pupils Example 1 and explain the two steps slowly as you work through them on the board. Take note that this example is the simplest as there is no need to rename 10 ones into 1 ten. Let the pupils try Example 2 on page 134 of the Student’s Book.
2. As you explain, you may also draw number bonds to show how you split the number into tens and ones.

**ADDING TENS AND ONES (2)**

**Suggested Duration**

6 periods (180 min)

**Learning Outcomes**

Pupils should be able to:

- add tens and ones with renaming

**Instructions**

*Let’s Learn…*

**Activity 1 (40 min): Add tens and ones to numbers up to 100 with renaming**

1. Ask the pupils to turn to page 135 of the Student’s Book. Discuss Example 1 with the pupils and explain the two steps slowly as you work through them on the board. Take note that for this example, step 1 requires renaming of 10 ones into 1 ten. Explain the two steps giving extra attention to the renaming of 10 ones into 1 ten as follows:

   **Step 1:** Add the ones with renaming into ten and ones
   - 3 ones + 8 ones = 11 ones
   - Since 11 ones is more than 10 ones, rename 11 ones into 1 ten and 1 one.
   - Carry over the 1 ten from the ones place to the tens place.
   - Write a small 1 on top of the number 2 to denote the carry over of 1 ten.

   **Step 2:** Add the tens
   - 1 ten (carry over) + 2 tens + 2 tens = 5 tens
   - Answer: 51

2. Show the above addition again by writing the addition sentence vertically. Familiarize the pupils with doing addition using the vertical representation.

3. Let the pupils try Example 2 on page 136 of the Student’s Book. Provide more examples with renaming into ten and ones for pupils to practise. Encourage the pupils to show their working on the board.

4. As you explain, you may also draw number bonds to show how you split the number into tens and ones.

**Activity 2 (30 min): Work in pairs**

*Things you need: stacks of cards numbered 1 to 9*

1. Pair up the pupils. Each pair is given three stacks of cards. One pupil will draw four cards to form two 2-digit numbers. The other pupil will add the two numbers. The pupils take turns to draw the cards and add the numbers.
Let's Try...

Activity 3 (10 min): Individual practice

1. Ask the pupils to try the exercises on page 137 of the Student’s Book. Ask some pupils to show their working on the board.

Homework

Ask the pupils to do Workbook 1B—Worksheets 37 and 38.

Answers

Page 137

1. (a) $41 + 27 = 68$  
   
   \[
   \begin{array}{cccc}
   & & 4 & 1 \\
   + & & 2 & 7 \\
   \hline
   & 6 & 8 \\
   \end{array}
   \]

   (b) $63 + 31 = 94$

   
   \[
   \begin{array}{cccc}
   & 6 & 3 \\
   + & 3 & 1 \\
   \hline
   9 & 4 \\
   \end{array}
   \]

2. (a) 98  
   
   (b) 97

3. (a) 71  
   
   (b) 93

Worksheet 37

1. (b) $33 + 24 = 57$

   \[
   \begin{array}{cccc}
   & 3 & 3 \\
   + & 2 & 4 \\
   \hline
   5 & 7 \\
   \end{array}
   \]

   (c) $45 + 21 = 66$

   \[
   \begin{array}{cccc}
   & 4 & 5 \\
   + & 2 & 1 \\
   \hline
   6 & 6 \\
   \end{array}
   \]

   (d) $52 + 27 = 79$

   \[
   \begin{array}{cccc}
   & 5 & 2 \\
   + & 2 & 7 \\
   \hline
   7 & 9 \\
   \end{array}
   \]

   (e) $62 + 34 = 96$

   \[
   \begin{array}{cccc}
   & 6 & 2 \\
   + & 3 & 4 \\
   \hline
   9 & 6 \\
   \end{array}
   \]

   (f) $75 + 11 = 86$

   \[
   \begin{array}{cccc}
   & 7 & 5 \\
   + & 1 & 1 \\
   \hline
   8 & 6 \\
   \end{array}
   \]

2. (a) 58  
   
   (b) 29  
   
   (c) 44  
   
   (d) 48  
   
   (e) 78  
   
   (f) 98
**Worksheet 38**

1. (b) 12 + 45 = 57  
   \[\begin{array}{c}
   12 \\
   + 45 \\
   \hline
   57
   \end{array}\]  
   (c) 58 + 14 = 72  
   \[\begin{array}{c}
   58 \\
   + 14 \\
   \hline
   72
   \end{array}\]  
   (d) 25 + 37 = 62  
   \[\begin{array}{c}
   25 \\
   + 37 \\
   \hline
   62
   \end{array}\]  
   (e) 33 + 59 = 92  
   \[\begin{array}{c}
   33 \\
   + 59 \\
   \hline
   92
   \end{array}\]  
   (f) 47 + 26 = 73  
   \[\begin{array}{c}
   47 \\
   + 26 \\
   \hline
   73
   \end{array}\]

2. (a) 43  
   (b) 62  
   (c) 93  
   (d) 71  
   (e) 75  
   (f) 60  
   (g) 80  
   (h) 87  
   (i) 81

**SUBTRACTING TENS**

**Suggested Duration**

2 periods (80 min)

**Learning Outcomes**

Pupils should be able to:

- subtract tens

**Instructions**

*Let’s Learn…*

**Activity 1 (10 min): Revise with the pupils numbers up to 100**

*Things you need: stacks of cards numbered 1 to 100*

1. Revise with the pupils numbers up to 100.

**Activity 2 (30 min): Subtract tens from numbers up to 100**

*Things you need: 100 cubes*

1. Display 70 cubes on the table. Arrange them in groups of 10 to show 7 tens. Next, separate 3 tens from the 7 tens and ask the pupils, ‘How many tens are left?’ Count with the pupils.
the number of tens left using the count back method as follows.

\[ \begin{array}{cccccc}
4 \text{ tens} & 5 \text{ tens} & 6 \text{ tens} & 7 \text{ tens} & \text{ or} & 40 & 50 & 60 & 70
\end{array} \]

2. Show your workings on the board as follows:

\[
\begin{array}{ccc}
70 & - & 30 \\
\downarrow & & \downarrow \\
7 \text{ tens} & - & 3 \text{ tens} \\
\end{array}
\]

or 40

3. Write on the board, \(7 - 3 = 4\) and compare this with \(70 - 30 = 40\). Show the similarity as follows:

\[
\begin{array}{ccc}
7 & - & 3 \\
\downarrow & & \downarrow \\
70 & - & 30 \\
\end{array}
\]

\[= 40\]

4. Display 78 cubes on the table. Using a ruler, separate out 40 cubes or 4 tens. Write on the board the subtraction sentence: \(78 - 40 = \_\_\_\_\_\_\).

5. Show the class how to subtract 40 from 78 using number bonds as follows:

- First, use number bonds to split 78 into 70 and 8 as follows:

\[
\begin{array}{ccc}
78 & - & 40 \\
\downarrow & & \downarrow \\
70 & 8
\end{array}
\]

- Next, subtract 40 from 70 \(\Rightarrow 70 - 40 = 30\)
- Finally, add 30 and 8 \(\Rightarrow 30 + 8 = 38\)

6. Provide a few more examples for pupils to practise.

**Activity 3 (20 min): Class practice**

1. Go through the examples on page 138 of the Student’s Book.

**Let’s Try...**

**Activity 4 (20 min): Individual practice**

1. Ask the pupils to try the exercises on page 139 of the Student’s Book.

**Homework**

Ask the pupils to do Workbook 1B—Worksheet 39.
**Answers**

(a) 30  (b) 60  (c) 20  (d) 35  (e) 38  (f) 12

**Worksheet 39**

1. (a) 40 – 30 = 10  (b) 80 – 20 = 60
   - 4 tens – 3 tens = 1 ten
   - 8 tens – 2 tens = 6 tens
(c) 90 – 60 = 30  (d) 70 – 50 = 20
   - 9 tens – 6 tens = 3 tens
   - 7 tens – 5 tens = 2 tens

3. (a) 62  (b) 37  (c) 38

4. (a) 56 – 40 = 16  (b) 79 – 50 = 29
   - 56 – 40
   - 79 – 50
   - 50 – 40 = 10
   - 70 – 50 = 20
   - 10 + 6 = 16
   - 20 + 9 = 29
   - 56 – 40 = 16
   - 79 – 50 = 29

**SUBTRACTING ONES (1)**

**Suggested Duration**

1 period (40 min)

**Learning Outcomes**

Pupils should be able to:
- subtract ones without renaming

**Instructions**

*Let’s Learn…*

**Activity 1 (30 min): Subtract ones from numbers up to 100 without renaming**

1. Show the class how to subtract ones from numbers using number bonds as follows:
   
   **Subtract 6 from 59 (59 – 6)**
   - First, use number bonds to split 59 into 50 and 9 as follows:
     
     - 59
     - 6
     - 50
     - 9
• Next, subtract 6 from 9 \(\Rightarrow 9 - 6 = 3\)
  (Point out that since 6 can be subtracted from 9, there is no need to borrow a ten and then rename it into 10 ones.)
• Finally, add 50 and 3 \(\Rightarrow 50 + 3 = 53\)

2. Provide more examples for pupils to practise.

**Activity 2 (10 min): Class practice**

1. Go through the examples on page 140 of the Student’s Book.

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**SUBTRACTING ONES (2)**

**Suggested Duration**
2 periods (80 min)

**Learning Outcomes**
Pupils should be able to:
• subtract ones with renaming

**Instructions**

*Let’s Learn…*

**Activity 1 (30 min): Subtract ones from numbers up to 100 with renaming**

1. Write on the board, 93 – 7. Show the subtraction as follows:

   Subtract 7 from 93 (93 – 7)
   • Since 7 ones cannot be subtracted from 3 ones, one ten is borrowed from the 9 tens and is renamed as 10 ones to join the 3 ones and form 13. Use number bonds to show 93 split into 80 and 13 as follows:
   
   $\begin{array}{c}
   93 \\
   - 7 \\
   \underline{13}
   \end{array} = \begin{array}{c}
   80 \\
   13
   \end{array}$

   • Subtract 7 from 13 \(\Rightarrow 13 - 7 = 6\)
   • Finally, add 80 and 6 \(\Rightarrow 80 + 6 = 86\)

2. Provide more examples for pupils to practise.

**Activity 2 (10 min): Class practice**

1. Go through the examples on page 141 of the Student’s Book.

**Activity 3 (30 min): Work in pairs**

*Things you need: stacks of cards numbered 1 to 9*

1. Pair up the pupils. Each pair is given two stacks of cards. One pupil will draw two cards to form one 2-digit number and another card to form one 1-digit number. The other pupil
will subtract the 1-digit number from the 2-digit number. The pupils take turns to draw the cards and subtract the numbers.

Let’s Try…

Activity 4 (10 min): Individual practice
1. Ask the pupils to try the exercises on page 142 of the Student’s Book.

Homework
Ask the pupils to do Workbook 1B—Worksheets 40 and 41.

Answers

(a) 79 – 7 = 72  
(b) 47 – 6 = 41  
(c) 98 – 6 = 92

(d) 64 – 5 = 59  
(e) 36 – 9 = 27  
(f) 21 – 8 = 13

WORK Sheet 40
1. (a) 6 – 5 = 1  
(b) 29 – 3 = 26

(c) 36 – 4 = 32  
(d) 67 – 3 = 64
SUBTRACTING TENS AND ONES (1)

Suggested Duration
1 period (40 min)

Learning Outcomes
Pupils should be able to:
- subtract tens and ones without renaming
Instructions

Let’s Learn...

Activity 1 (30 min): Subtract tens and ones from numbers up to 100 without renaming

1. Explain to the pupils the following two simple steps in subtracting numbers within 100:
   - **Step 1**: Subtract the ones
   - **Step 2**: Subtract the tens

2. Emphasize that the steps must be in the order from ones to tens.

3. Write on the board the subtraction sentence 64 – 52 = ___. Explain to the pupils that just like an addition sentence, a subtraction sentence can also be written vertically as follows:

   \[
   \begin{array}{c}
   64 \\
   -52 \\
   \hline
   \end{array}
   \]

4. Indicate the ‘Tens’ and ‘Ones’ over the digits as follows:

   \[
   \begin{array}{c|c}
   \text{Tens} & \text{Ones} \\
   \hline
   6 & 4 \\
   -5 & 2 \\
   \hline
   \end{array}
   \]

5. Emphasize that the digits must be properly aligned so that the digits are in the right columns. Also remind the pupils to always subtract from a bigger number and not from a smaller number.

6. Go through the steps in subtracting the two numbers. Point out that since 2 ones can be subtracted from 4 ones, there is no need to borrow a ten from the 6 tens and rename it into 10 ones.

7. Provide more examples involving subtracting tens and ones without borrowing and renaming for pupils to practise. Ask the pupils to show their workings on the board.

Activity 2 (10 min): Class practice

1. Ask the pupils to turn to page 143 of the Student’s Book. Go through the example and explain the two steps slowly as you work through them on the board. Emphasize again that in this example there is no need to **borrow and rename**. Let the pupils out try the example on the next page. Provide more similar examples with no borrowing and renaming for pupils to practise.

2. As you explain, you may also draw number bonds to show how you split the numbers into tens and ones.
SUBTRACTING TENS AND ONES (2)

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
• subtract tens and ones with renaming

Instructions

Let’s Learn...

Activity 1 (40 min): Subtract tens and ones from numbers up to 100 with borrowing and renaming

1. Ask the pupils to turn to page 145 of the Student’s Book. Go through Example 1 and explain the two steps slowly as you work through them on the board. Note that in this example, step 1 involves having to borrow and rename in ones. Explain the two steps giving extra attention to the borrow and rename in ones as follows:

   **Step 1:** Subtract the ones with borrow and rename in ones
   • Since it is not possible to do ‘6 ones – 9 ones’, 1 ten needs to be ‘borrowed’ from the 9 tens. Show this by striking the ‘9’ tens and replacing it with ‘8’ tens.
   • Rename the 1 ten into 10 ones and add them to the 6 ones: 10 ones + 6 ones = 16 ones. Show this by replacing the ‘6’ ones with ‘16’ ones.
   • Since 16 ones is more than 9 ones, a subtraction can now take place: 16 ones – 9 ones = 7 ones.
   • Emphasize that when a larger digit is subtracted from a smaller digit, a ‘borrow’ is needed from the next column.

   **Step 2:** Subtract the tens
   • 8 tens (after the borrow) – 2 tens = 6 tens

   Answer: 67

3. Show the above subtraction again by writing the subtraction sentence vertically. Familiarize the pupils with doing subtraction using the vertical representation.

4. Let the pupils try out Example 2 on page 146 of the Student’s Book. Provide more examples involving borrowing and renaming for pupils to practise.

5. As you explain, you may also draw number bonds to show how you split the number into tens and ones.

Activity 2 (20 min): Work in pairs

**Things you need:** stacks of cards numbered 1 to 9

1. Pair up the pupils. Each pair is given three stacks of cards. One pupil will draw four cards to form two 2-digit numbers. The other pupil will subtract the smaller number from the
bigger number. The pupils take turns to draw the cards and subtract the numbers.

*Let’s Think*

**Activity 3 (20 min): Interesting activity to stimulate learning**
1. Ask the pupils to work in pairs for the *Let’s Think* exercise on page 147 of the Student’s Book. Ask some pupils to present their answers to the class.

*Let’s Try…*

**Activity 4 (10 min): Individual practice**
1. Ask the pupils to try the exercises on page 147 of the Student’s Book.

**Homework**
Ask the pupils to do Workbook 1B—Worksheets 42 and 43 and Practice 10.

**Revision (30 min)**

*Fun with Maths*
1. Let the pupils play the game on page 148 of the Student’s Book to reinforce their understanding.
2. Revise and go over the pupils’ homework.

---

### Answers

**page 147**

1. (a) \[99 - 15 = 84\]
   
   90 9 10 5

(b) \[53 - 17 = 36\]

40 13 10 7

2. (a) 45  (b) 35

**WORKSHEET 42**

1. (a) \[7 - 5 = 2\]
   
   \[80 - 30 = 50\]
   
   \[50 + 2 = 52\]

(b) \[56 - 33 = 23\]

56 6 30 3

6 - 3 = 3

50 - 30 = 20

20 + 3 = 23

(c) \[88 - 43 = 45\]

88 8 40 3

(d) \[65 - 23 = 42\]

60 5 20 3
8 - 3 = 5    5 - 3 = 2
80 - 40 = 40  60 - 20 = 40
40 + 5 = 45    40 + 2 = 42
2. (a) 27    (b) 14    (c) 46    (d) 34    (e) 63    (f) 23    (g) 54    (h) 16

WORKSHET 43

1. (a) 13 - 8 = 5
   70 - 40 = 30
   30 + 5 = 35
(b) 96 - 59 = 37
   80 - 16 = 50
   9 - 16 = 7
   80 - 50 = 30
   10 + 7 = 17
(c) 91 - 74 = 17
   80 - 11 = 69
   11 - 4 = 7
   80 - 70 = 10
   10 + 7 = 17
(d) 57 - 19 = 38
   40 - 17 = 23
   17 - 9 = 8
   40 - 10 = 30
   10 + 8 = 18
(e) 73 - 54 = 19
   60 - 13 = 47
   13 - 4 = 9
   60 - 50 = 10
   10 + 9 = 19
(f) 55 - 27 = 28
   40 - 15 = 25
   15 - 7 = 8
   40 - 20 = 20
   20 + 8 = 28
2. (a) 26    (b) 29    (c) 8    (d) 38    (e) 17    (f) 38    (g) 19    (h) 27

Practice 10

1. (a) 57 63 63    (b) 55 48 48    (c) 65 74 74
   (d) 53 45 45    (e) 98 100 100    (f) 61 59 59
2. 12 stickers
3. 57
4. 22, 20, 25, 31, 38, 46, 56, 54, 84, 75, 88, 92, 52, 67, 64, 72, 84, 22, 30
Unit 11: Length

Comparing Length

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
  • compare lengths of two or more objects in non-standard units

Instructions
Let’s Learn...

Activity 1 (40 min): Compare the lengths of 2 objects using ‘longer’, ‘shorter’, ‘taller’, ‘higher’ and ‘lower’

Things you need: a piece of string and a vase

1. Draw a line on the board and explain to the class the concept of length as the distance between the two ends of the line. Show them the string and explain to the class the concept of length as the distance between the 2 ends of the string. Explain that the length of an object tells us ‘how long’ the object is.

2. Ask a pupil to stand in front of the class and explain the concept of length as the distance from his feet to his head. Tell the class that in this case, the length is known as the ‘height’.

3. Display a vase on the table and explain the concept of length as the distance from the base of the vase to the top of the vase. Explain that in this case, the length is also known as the ‘height’.

4. Point out to the class that the word ‘length’ is used when we want to measure ‘how long’ an object is whereas the word ‘height’ is used when we want to measure ‘how tall’ or ‘how high’ an object is.

5. Display two objects and compare their lengths using the terms ‘long’ and ‘longer’:
   
<table>
<thead>
<tr>
<th>Object 1</th>
<th>Object 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>long</td>
<td>longer</td>
</tr>
</tbody>
</table>

6. Display two other objects and compare their lengths using the terms ‘short’ and ‘shorter’:

<table>
<thead>
<tr>
<th>Object 1</th>
<th>Object 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>short</td>
<td>shorter</td>
</tr>
</tbody>
</table>

7. Ask the pupils to each pull out an item from his/her pencil case and compare its length
with that of their partner’s item. The pupils are to use the terms ‘longer’ and ‘shorter’ to describe the comparison.

8. Ask two pupils to stand in front of the class and compare their heights using the terms ‘tall’ and ‘taller’:

<table>
<thead>
<tr>
<th>Pupil A</th>
<th>Pupil B</th>
</tr>
</thead>
<tbody>
<tr>
<td>tall</td>
<td>taller</td>
</tr>
</tbody>
</table>

9. Ask two other pupils to stand in front of the class and compare their heights using the terms ‘short’ and ‘shorter’:

<table>
<thead>
<tr>
<th>Pupil A</th>
<th>Pupil B</th>
</tr>
</thead>
<tbody>
<tr>
<td>short</td>
<td>shorter</td>
</tr>
</tbody>
</table>

10. Ask the pupils to stand up and compare their heights with their partners. The pupils are to use the terms ‘taller’ and ‘shorter’ to describe the comparison.

11. Place an object on a chair and another object on a table. Compare their heights using the terms ‘high’ and ‘higher’:

<table>
<thead>
<tr>
<th>Object on the chair</th>
<th>Object on the table</th>
</tr>
</thead>
<tbody>
<tr>
<td>high</td>
<td>higher</td>
</tr>
</tbody>
</table>

12. Place an object on a chair and another object on the floor. Compare their heights using the terms ‘low’ and ‘lower’:

<table>
<thead>
<tr>
<th>Object on the chair</th>
<th>Object on the floor</th>
</tr>
</thead>
<tbody>
<tr>
<td>low</td>
<td>lower</td>
</tr>
</tbody>
</table>

13. Show two balloons and by shifting the heights of the balloons, ask the pupils ‘Which is higher?’ and ‘Which is lower?’

**Activity 2 (10 min): Compare the lengths and heights of more than 2 objects using ‘the longest’, ‘the shortest’, ‘the tallest’, ‘the highest’, and ‘the lowest’**

1. Display three objects on the table and ask the class, ‘Which object is the longest?’ and ‘Which object is the shortest?’ Teach the class to use the terms ‘the longest’ and ‘the shortest’ when comparing the lengths of more than two objects.

2. Ask three pupils to come to the front and ask the rest of the pupils ‘Who is the tallest?’ and ‘Who is the shortest?’ Teach the class to use the terms ‘the tallest’ and ‘the shortest’ when comparing the heights of more than two objects.

3. Place one object on the floor, one object on the chair and one object on the table. Ask the class, ‘Which object is in the highest position?’ and ‘Which object is in the lowest position?’ Teach the class to use the terms ‘the highest’ and ‘the lowest’ when comparing the vertical positions of more than two objects.

**Activity 3 (10 min): Compare lengths using the strategy of a common starting point**

1. Show 4 pencils of slightly different lengths to the pupils. Label the pencils to differentiate them. Place the pencils without aligning them. Ask the class to guess which is the longest pencil and which is the shortest pencil. Teach the class the strategy of a common starting
point to compare lengths by using a ruler and then lining up the pencils against the ruler as follows:

![Ruler diagram](image)

Common starting point

2. Pair up the pupils and give each pair six strips of paper of different colours and different lengths. Ask the pupils to work in pairs to find out the longest and shortest strips using the common starting point strategy.

Activity 4 (10 min): Class practice
1. Go through the examples on pages 150–152 of the Student’s Book.

Let’s Try…

Activity 5 (10 min): Individual practice
1. Ask the pupils to try the exercises on pages 153–154 of the Student’s Book.

Homework
1. Ask the pupils to do Workbook 1B—Worksheet 44.

Answers

page 153
1. (a) bus   (b) car   (c) motorcycle   (d) ship
2. (a) A    (b) B     (c) Romana      (d) Tom

WORK Sheet 44
4. (a) Dina, Kate, Sarah   (b) balloon, bird, kite
8. (a) book   (b) shoe    (c) pen
9. (a) C      (b) B      (c) C
10. (a) Yes    (b) No

MEASURING LENGTH

Suggested Duration
3 periods (120 min)
Learning Outcomes

Pupils should be able to:

- measure lengths in non-standard units

Instructions

Let’s Learn…

Activity 1 (30 min): Use small identical objects as non-standard units to measure the length of a longer object

Things you need: 20 ice cream sticks

1. Line up paper clips end-to-end in a straight line along the length of a notebook. Count the number of paper clips. Say to the class ‘The length of the notebook is about the same as the length of (number) paper clips combined.’

2. Explain to the pupils that you have just used paper clips to measure the length of the notebook.

3. Point out to the class that in order to use an object to measure another object, the measuring object must be smaller than the object to be measured and there must be enough of the measuring objects.

4. Ask the class what other objects could be used to measure another object. Give some examples as follows:
   - using handspans to measure the length of the board
   - using feet to measure the length of the classroom
   - using coins to measure the length of a book

Activity 2 (10 min): Use the term ‘unit’ to measure length

1. Refer the pupils to the example of using paper clips to measure the length of the notebook. Suggest that the class calls each paper clip ‘1 unit’. Ask the class to state the length of the notebook in terms of ‘units’ instead of paper clips. Use the phrase ‘The length of the notebook is about (number) units.’

2. Give more examples for the pupils to try using ice cream sticks, footprints, handspans, strides, etc. to measure different objects and then asking them to state their lengths in ‘units’.

Activity 3 (10 min): Class practice

1. Go through the examples on pages 155–157 of the Student’s Book. Ask a few pupils to share their answers with the class.

Let’s Explore

Activity 4 (15 min): Work in pairs

1. Let the pupils work in pairs on the activities on page 158 of the Student’s Book. Ask the pupils to share their answers with their partners.
**Let’s Think**

**Activity 5 (15 min): Group activity to reinforce learning**
1. Ask the pupils to discuss in groups of 6 the activities on page 159 of the Student’s Book. Ask each group to have a representative to present their answers to the class.

**Let’s Try…**

**Activity 6 (10 min): Individual practice**
1. Ask the pupils to try the exercises on page 160 of the Student’s Book. Go around and check the pupils’ work and guide them individually if necessary.

**Homework**
1. Ask the pupils to do Workbook 1B—Worksheet 45 and Practice 11.

**Revision (30 min)**

**Fun with Maths**
1. Let the pupils try the fun activity on page 161 of the Student’s Book. Lead the class to see that the shortest way is one that does not go in the opposite direction but always moves towards Wriggly’s Home.
2. Revise and go over the pupils’ homework.

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**Answers**

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**Let’s Try**

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**Worksheet 45**

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**Practice 11**

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(p) 12  (b) 7  (c) paintbrush  (d) toy bat  (e) comb

---

2. (a) higher  (b) the highest  (c) as high as
3. (a) 7  (b) 6  (c) shorter
4. B, A, C
5. (a) C  (b) A  (c) Pencil B is longer than Pencil A but shorter than Pencil C.
Unit 12: Mass

COMPARING MASS

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- compare mass of two or more objects in non-standard units

Instructions
Let's Learn...

Activity 1 (40 min): Compare the masses of 2 objects using ‘heavier’, ‘lighter’, ‘as heavy as’ and ‘as light as’

Things you need: a balance

1. Place the teacher’s chair and a pupil’s chair side by side in front of the class. Ask a few pupils to try lifting up the chairs and then ask the following questions:
   ‘Which chair is harder to lift?’
   ‘Which chair is easier to lift?’
   ‘Which chair is heavier?’
   ‘Which chair is lighter?’

2. Lead the class to see that the teacher’s chair is heavier and requires more strength to lift and therefore is harder to lift. Comparatively the pupil’s chair is lighter and requires less strength to lift and therefore is easier to lift.

3. Show two objects in your hands and ask the class to guess which is heavier. Select objects that have a great difference in size and a corresponding difference in mass. Let the pupils hold the objects in their hands to judge which is heavier or lighter. You can use the following examples:
   - a stapler and an eraser
   - a pair of scissors and a pen
   - a full water bottle and a half-filled or empty water bottle
   - a textbook and a notebook

4. Check whether the pupils have guessed correctly by putting the objects on a balance. Tell the class that a balance can be used to check if an object is heavier or lighter than another object. Explain to the pupils that if the balance is not level, one of the objects is heavier. The heavier object will be in the lower pan while the lighter object will be in the higher pan.
5. Provide more objects for pupils to compare the masses of, using the balance. This time round, select objects that are about the same mass.

6. Ask the pupils to indicate by a show of hands if they agree that a bigger object is always heavier than a smaller object. Show the class a small metal spoon and a big plastic spoon. Ask the class which is heavier. Put them on the balance to show that the smaller spoon is heavier than the bigger spoon. Point out to the class that a bigger object may not always be heavier than a smaller object and sometimes, a smaller object can be heavier than a bigger object. Ask the class to think of examples of a bigger object that is lighter than a smaller object.

7. Put two objects on the balance and compare their masses using the terms ‘heavy’ and ‘heavier’. Tell the class that if we say the object on the higher point is heavy, then the object on the lower pan is heavier:

heavy

object 1

heavier

object 2

8. Take two other objects and compare their masses using the terms ‘light’ and ‘lighter’. Tell the class that if we say the one on the lower pan is light, then the object on the higher pan is lighter.

light

object 4

lighter

object 3

9. Take two other objects that are of the same mass and compare their masses using the terms ‘as heavy as’ and ‘as light as’. Point out to the class that if the balance is level, then the two objects are the same mass. We say that ‘object A is as heavy as object B.’ or ‘object A is as light as ‘object B.’ Explain that the phrase ‘as heavy as’ or ‘as light as’ is used to refer to objects that are of the same mass.

Activity 2 (15 min): Compare the masses of more than 2 objects using ‘the heaviest’, ‘the lightest’ and ‘as heavy as’

1. Display four objects on the table and ask the class, ‘Which object is the heaviest?’ and ‘Which object is the lightest?’ Let the pupils hold the objects to help them make their
guesses. Next, show the class how to find out the heaviest and lightest objects by using the balance and an elimination method as follows:

- **To find the heaviest object**
  
  Put any two objects on the balance. Remove the lighter and put in the third object. Do this for the fourth object. The one which is in the lower pan is the heaviest of the 4 objects. This method of elimination can be used for any number of objects.

- **To find the lightest object**
  
  Repeat the same steps as above, but this time round, instead of removing the lighter object, remove the heavier object. Do this until all the objects have been tested and the one in the higher pan is the lightest of all the objects.

2. Display six objects on the table and let some pupils practise finding the heaviest and lightest object by the elimination method.

**Activity 3 (10 min): Class practice**

1. Go through the examples on pages 163–164 of the Student’s Book.

**Additional activity (15 min): Game to enhance learning**

1. Pair up the pupils to play a simple game of guessing an object by comparing its mass as follows:
   
   - Pupil A will take out one stationery item from his/her pencil box and hide it under the table without letting Pupil B know what that object is.
   
   - Pupil B is to guess the object by asking ‘Is it heavier than the pencil?’ or ‘Is it lighter than a sharpener’ or ’Is it as heavy as an eraser?’ and Pupil A can only answer ’Yes’ or ’No’. Pupil B continues to ask and once she is confident of the answer, she can make a guess. Remind the pupils that they can only make one guess.
   
   - Acknowledge the pupils who guess correctly.

**Let’s Explore**

**Activity 4 (15 min): Work in pairs to explore finding the masses of objects**

_Things you need: marbles and a balance_

1. Let the pupils work in pairs to try the *Let’s Explore* activity on page 165 of the Student’s Book. Ask the pupils to make as many sentences comparing the masses of the objects. For example, ‘The watch is lighter than the book.’ Select a few pupils to share their answers with the class.

**Activity 5 (15 min): Class activity to enhance learning**

1. Group the pupils into groups of 5. Have them try lifting one another's bags to find out which bag is the heaviest and which bag is the lightest. Ask the pupils to arrange the bags in order from the heaviest to the lightest.

**Let’s Think**

**Activity 6 (15 min): Individual activity to stimulate thinking**

1. Ask the pupils to think and work on the exercise on page 166 of the Student’s Book. Give
the clue that they should use the elimination method and moving from one balance to another to arrive at the answer.

Let’s Try…
Activity 7 (10 min): Individual practice
1. Ask the pupils to try the exercises on page 167 of the Student’s Book.

Homework
1. Ask the pupils to do Workbook 1B—Worksheet 46.

Answers

1. (a) sharpener (b) paper clip
2. (a) plastic cup (b) stapler

WORK S H E E T 46
1. (a) a bag of sand (b) a bucket of water (c) piano (d) radio
2. (a) as heavy as (b) heavier (c) lighter than
3. (a) B (b) A (c) A (d) C
4. (a) heavier (b) lighter (c) heavier (d) lighter

MEASURING MASS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• measure mass in non-standard units

Instructions
Let’s Learn…
Activity 1 (15 min): Use small identical objects as non-standard units to measure the mass of a heavier object

Things you need: 30 marbles
1. Place a textbook on one pan of the balance and add one marble at a time to the other pan until they balance. Count the number of marbles and say the comparing statement, ‘The textbook is as heavy as 20 marbles.’ Write the statement on the board and ask the
class to repeat this statement. Explain to the pupils that you have just measured the mass of an object using a marble as a unit of measurement. Bring to their attention that every marble must be of the same mass in order to be used as a unit to measure mass.

2. Let the pupils practise measuring different objects using the marbles and write on the board the comparing statements.

3. Ask the class what other identical objects could be used as a unit to measure the mass of another object. Give some examples as follows:
   - paper clips
   - ice cream sticks
   - identical cubes
   - coins of the same denomination

4. Emphasize to the class that anything identical and having the same mass can be used as a unit to measure mass.

**Activity 2 (10 min): Class practice**

1. Go through the examples on pages 168–169 of the Student’s Book. Ask a few pupils to share their answers with the class.

**Activity 3 (15 min): Play a group game to enhance learning**

1. Play a group game as follows:
   - Prior to the activity, ask each pupil to bring a mystery object to class. They are to place it in a sealed envelope without telling anyone what it is. The object has to be an item of stationery.
   - Group the pupils into groups of 5. Have them exchange the mystery objects by passing the sealed envelopes around. Make sure that no one opens the envelopes.
   - Ask the pupils to measure the mass of their mystery object by using the marbles as a non-standard unit of measurement. Then, have them write on the envelope the statement, ‘My mystery gift is as heavy as _____ marbles.’
   - Once everyone has measured the mass of his/her mystery object, they should guess what it is. Each pupil has two guesses. Open the envelopes to see if their guesses are correct.
   - Acknowledge the pupils who have guessed correctly.

**Let’s Try…**

**Activity 4 (15 min): Individual practice**

1. Ask the pupils to try out the exercises on page 170 of the Student’s Book.

**Homework**

1. Ask the pupils to do Workbook 1B—Worksheet 47 and Practice 12.
Revision (25 min)

**Fun with Maths**

*Things you need: drawing pins and metre rulers*

1. Group the pupils into groups of 4. Prior to the activity, ask each group to bring the following items to class for the next lesson:
   - Pupil A—1 clothes hanger
   - Pupil B—2 identical paper plates
   - Pupil C—a ball of string
   - Pupil D—a styrofoam box

2. Give each group a metre ruler and a drawing pin. Go through the steps in making the balance as described in the activity on page 171 of the Student’s Book.

3. Have every group display their balances in front of the class. Test each of the balances and acknowledge the group that made the best balance.

4. Revise and go over the pupils’ homework.

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**Answers**

(page 170)

(a) 5 units  
(b) canned drink  
(c) milk, orange juice, drink

**Worksheet 47**

1. (a) 5  
   (b) 10

2. (a) False  
   (b) True

3. (a) 6  
   (b) 12  
   (c) 8  
   (d) watermelon  
   (e) fish

4. (a) 6  
   (b) 11  
   (c) 5  
   (d) C  
   (e) B

**Practice 12**

1. (a) 4 more marbles to be added  
   (b) 5 more marbles to be added

2. (a) watermelon, papaya, grapefruit  
   (b) Z, X, Y

3. (a) 5  
   (b) 5  
   (c) 7

4. (a) 13  
   (b) 5

5. (a) 8  
   (b) 4
Suggested Duration
2 periods (80 min)

Answers

1.

<table>
<thead>
<tr>
<th></th>
<th>Tens</th>
<th>Ones</th>
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<tbody>
<tr>
<td>(a)</td>
<td>1</td>
<td>8</td>
</tr>
<tr>
<td>(b)</td>
<td>2</td>
<td>8</td>
</tr>
<tr>
<td>(c)</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>(d)</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>(e)</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

2. (a) 67, 68, 70, 72, 73, 75, 76, 79, 80, 82
   (b) 93, 92, 90, 89, 87, 85, 81, 80

3. (a) 7 (b) 10 (c) 4 (d) 6 (e) textbook (f) telephone directory

4. (a) 12, 17, 36, 43 (b) 52, 50, 38, 29 (c) 93, 84, 68, 38
   12, 43 29, 52 38, 93

5. (a) 2 tens 1 one 2 tens 4 ones
    (b) 4 tens 6 ones 4 tens 2 ones
    (c) 6 tens 4 ones 6 tens 0 ones

6. (a) 55 (b) 69 (c) 75 (d) 66 (e) 74 (f) 26 (g) 84 (h) 44

7. (a) 41 (b) 39 (c) 52 (d) 37 (e) 23 (f) 39

8. (a) papaya and bananas (b) 7 (c) grapefruit

9. 69, 68, 58, 57, 47, 48, 49, 50, 40, 41, 51, 52, 62, 61, 71, 70, 80

10. The missing numbers are 67, 72, 76, 78, 81, 83, 87, 92
    (a) 78 (b) 87 (c) 81 (d) 92 (e) 78 (f) 76 (g) 92
Unit 13: Multiplication

ADDING EQUAL GROUPS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• understand that multiplication is repeated addition

Instructions
Let’s Learn...

Activity 1 (20 min): Grasp the concept of multiplication as repeated addition
Things you need: 6 transparent containers and 12 ping-pong balls
1. Put three transparent containers on the table and ask a pupil to drop two ping-pong balls into each container. Ask the class ‘How many ping-pong balls are there altogether?’ Count the number of ping-pong balls to arrive at the number 6. Lead the class to see that the number 2 is added three times to arrive at 6.
2. Repeat the above using different number of transparent containers and ping-pong balls to show multiplication as repeated addition.

Activity 2 (20 min): Write multiplication statements to represent multiplication
1. Explain that there are four types of multiplication statements to represent multiplication as follows:
   • Write: $2 + 2 + 2 = 6$ and read it as ‘2 plus 2 plus 2 is equal to 6’
   • Write: 3 groups of 2 = 6 and read it as ‘3 groups of 2 is equal to 6’
   • Write: 3 twos = 6 and read it as ‘3 twos is equal to 6’
   • Write: $3 \times 2 = 6$ and read it as ‘3 times 2 is equal to 6’
2. Repeat the above using different numbers of transparent containers and ping-pong balls to show the following:
   $2 + 2 + 2 + 2 = 8 \implies 4$ groups of 2 = 8 \implies 4 twos = 8 \implies 4 \times 2 = 8$
   $2 + 2 + 2 + 2 + 2 = 10 \implies 5$ groups of 2 = 10 \implies 5 twos = 10 \implies 5 \times 2 = 10$
   $2 + 2 + 2 + 2 + 2 + 2 = 12 \implies 6$ groups of 2 = 12 \implies 6 twos = 12 \implies 6 \times 2 = 12$
3. Please note that at this stage, the pupils have not yet learnt the multiplication tables, so use adding by counting on to arrive at the answer.
Activity 3 (20 min): Class practice
1. Go through the examples on page 173 of the Student's Book.
2. Refer the pupils to page 172 of the Student’s Book and ask the pupils to work in pairs and find the answer to the question about cupcakes.

Let’s Try…

Activity 4 (20 min): Individual practice
1. Ask the pupils to try the exercises on page 174 of the Student’s Book.

Homework
1. Ask the pupils to do Workbook 1B—Worksheet 48.

Answers

page 174
1. 6, 3, 6, 6
2. There are 4 packets.
   There are 6 batteries in each packet.
   There are 24 batteries altogether.
3. There are 4 plates.
   There are 5 doughnuts on each plate.
   There are 20 doughnuts altogether.

WORK CHECK 48
1. (a) 3 groups, 4 aeroplanes in each group, 4 + 4 + 4 = 12
   (b) 6 groups, 2 kites in each group, 2 + 2 + 2 + 2 + 2 + 2 = 12
   (c) 7 fish bowls, 3 fish in each bowl, 3 + 3 + 3 + 3 + 3 + 3 + 3 = 21
   (d) 3 groups, 6 tops in each group, 6 + 6 + 6 = 18
   (e) 4 groups, 5 rubber ducks in each group, 5 + 5 + 5 + 5 = 20
2. 5 twos = 2 + 2 + 2 + 2 + 2 = 10
   3 fours = 4 + 4 + 4 = 12
   4 threes = 3 + 3 + 3 + 3 = 12
   3 sevens = 7 + 7 + 7 = 21
   2 eights = 8 + 8 = 16
   5 fives = 5 + 5 + 5 + 5 + 5 = 25
MAKING MULTIPLICATION STORIES

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- use the multiplication symbol to write a mathematical statement for a given situation

Instructions
Let’s Learn…

Activity 1 (40 min): Make multiplication stories based on pictures, write multiplication statements and solve them

Things you need: colourful pictures of groups of animals or objects to tell multiplication stories

1. Show pictures of groups of animals or objects to the pupils and tell multiplication stories, write multiplication statements and then solve them as follows:

   Example 1
   Show a picture of four cages of birds with three birds in each cage.
   Say: ‘There are four groups of birds. Each group has three birds. How many birds are there altogether?’
   Write: \[3 + 3 + 3 + 3 = 12\]
   \[4 \text{ groups of } 3 = 12\]
   \[4 \text{ threes } = 12\]
   \[4 \times 3 = 12\]
   There are 12 birds altogether.

   (Remember to use the add by counting on method to arrive at the answer 12 since the pupils have not yet learnt the multiplication tables at this stage.)

   Example 2
   Show a picture of 6 baskets of mangoes with 5 mangoes in each basket.
   Say ‘There are 6 groups of mangoes. Each group has 5 mangoes. How many mangoes are there altogether?’
   Write: \[5 + 5 + 5 + 5 + 5 + 5 = 30\]
   \[6 \text{ groups of } 5 = 30\]
   \[6 \text{ fives } = 30\]
   \[6 \times 5 = 30\]
   There are 30 mangoes altogether.
Introduce the multiplication tables of 2, 5 and 10 at this stage. Explain to them that multiples of 5 or 10 can be identified by checking the digit in the ones place.

**Activity 2 (25 min): Make multiplication stories based on situations**

1. Using pupils and items in the classroom, tell multiplication stories, write multiplication statements and then solve them as follows:

   **Example 1**
   
   Select 5 pupils to stand in front of the class.
   
   Say: ‘There are 5 pupils. Each pupil has 2 hands. How many hands are there altogether?’
   
   Write: \[2 + 2 + 2 + 2 + 2 = 10\]
   
   - 5 groups of 2 = 10
   - 5 twos = 10
   - 5 x 2 = 10
   
   There are 10 hands altogether.

   Use the add by counting on method to arrive at the answer. Try to encourage pupils to use the three tables taught above if the numbers correspond to them.

   **Example 2**
   
   Put 6 pupils’ chairs in front of the class.
   
   Say: ‘There are 6 chairs. Each chair has 4 legs. How many legs are there altogether?’
   
   Write: \[4 + 4 + 4 + 4 + 4 + 4 = 24\]
   
   - 6 groups of 4 = 24
   - 6 fours = 24
   - 6 x 4 = 24
   
   There are 24 legs altogether.

   (Use the add by counting on method to arrive at the answer.)

**Activity 3 (15 min): Class practice**

1. Go through the examples on pages 175–179 of the Student's Book.

**Let's Explore**

**Activity 4 (30 min): Work in pairs to enhance learning**

1. Let the pupils work in pairs to make as many multiplication stories as they can from the picture shown on page 180 of the Student's Book. Provide paper for them to write down all the multiplication stories. Remind the pupils to write down the four multiplication statements for each story. Acknowledge the pair who has the most multiplication stories with the correct sets of multiplication statements.
Let's Try…

Activity 5 (10 min): Individual practice

1. Ask the pupils to try the exercises on page 181 of the Student’s Book. Ask the pupils to share their stories with the class.

Homework

1. Ask the pupils to do Workbook 1B—Worksheet 49.

Answers

page 181

(a) There are 3 clowns.
   Each clown has 6 balloons.
   There are 18 balloons altogether.
(b) There are 6 plates.
   Each plate has 2 sandwiches.
   There are 12 sandwiches altogether.
   There are four trays.
   Each tray has 3 glasses of orange juice.
   There are 12 glasses of orange juice altogether.

Worksheet 49

1. (a) There are 2 groups.
   Each group has 6 trees.
   2 sixes = 12
   2 x 6 = 12
   7 threes = 21
   7 x 3 = 21
(b) There are 7 groups.
   Each group has 3 jugs.
   9 fours = 36
   9 x 4 = 36
(c) There are 8 groups.
   Each group has 5 birds.
   8 fives = 40
   8 x 5 = 40
(d) There are 9 groups.
   Each group has 4 pencils.
   9 fours = 36
   9 x 4 = 36

2. (a) 3 x 5 = 15
   There are 15 doves altogether.
(b) 4 x 4 = 16
   They have 16 balloons altogether.
(c) 6 x 6 = 36
   There are 36 biscuits altogether.
(d) 5 x 8 = 40
   There are 40 sausages altogether.

WORD PROBLEMS

Suggested Duration

2 periods (80 min)
Learning Outcomes
Pupils should be able to:
- write multiplication sentence from word problems and solve them by repeated addition
- solve one-step word problems

Instructions
Let’s Learn...
Activity 1 (30 min): Write multiplication sentences from word problems and solve them by repeated addition
1. Revise with the pupils the concept of multiplication as repeated addition as follows:
   - Display four rows of cubes on the table. Each row has seven cubes. Ask a pupil to come forward to count the total number of cubes by adding the seven cubes repeatedly four times.
   - Ask some pupils to come forward to form 5 groups, each of 4 pupils. Ask the class how many pupils there are altogether. Ask another pupil to add the number of pupils repeatedly until all five groups are added.
2. Go through the examples on pages 182–183 of the Student’s Book. For each example, use repeated addition to find the answer. Ask the pupils to work on some of the examples on the board. Remind the pupils to write the four different types of multiplication statements.

Let’s Try...
Activity 2 (10 min): Individual practice
1. Ask the pupils to work out the word problems on page 184 of the Student’s Book. Ask some pupils to show their workings on the board.

Homework
Ask the pupils to do Workbook 1B—Worksheet 50 and Practice 13.

Fun with Maths
Activity 3 (20 min): Fun game to enhance learning
Things you need: set of cards as shown on page 185 of the Student’s Book.
1. Pair up the pupils and ask them to play the game on page 184 of the Student’s Book.

Revision (20 min)
Revise and go over the pupils’ homework.
Answers

Romana has 28 fish altogether.
2. There are 25 buttons altogether.
3. Mother bought 30 cupcakes altogether.

Worksheet 50

1. (a) $5 \times 3 = 15$  
    (b) $4 \times 8 = 32$  
    (c) $5 \times 4 = 20$  
    (d) $9 \times 3 = 27$  
    (e) $6 \times 5 = 30$  
    (f) $5 \times 5 = 25$

Practice 13

1. $3 \times 5 = 15$
2. $3 + 3 + 3 = 9$  
   $3 \times 3 = 9$
4. $6 \times 3 = 18$  
   $3 \times 4 = 12$  
   $5 \times 4 = 20$  
   $4 \times 2 = 8$
Unit 14: Division

SHARING

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
  • use the concept of sharing to divide a quantity into equal sets

Instructions
Let's Learn...

Activity 1 (40 min): Understand the concept of division as in sharing a set of items equally among a group of people

Things you need: marbles

1. Have the pupils sit in groups of 4 around the table. Put a bowl containing 12 marbles in front of each group. Ask the pupils to share the 12 marbles equally among the group by each taking one marble at a time until there are no more marbles left.

2. Ask the pupils to count the number of marbles in their hands. Then ask, ‘How many marbles do you have?’ Ask the pupils to check with one another to ensure that everyone in the group has 3 marbles. Explain that by sharing the 12 marbles equally among the 4 pupils, a division has taken place. Write the sentence ‘Division means to share a set of items equally among a group of people’ on the board and ask the pupils to repeat the sentence after you.

3. Ask the pupils to put the marbles back in the bowl. Add more marbles to make 16. Repeat steps 1 and 2 to demonstrate again the concept of division as sharing a set of items equally among a group of people.

4. You may continue the above for different numbers of pupils in the group until the pupils are sure of the concept of division as sharing.

Activity 2 (30 min): Understand the concept of dividing as dividing a set of items into equal groups

Things you need: 5 transparent containers and a bag of 20 ping-pong balls

1. Arrange 5 transparent containers in front of the class. Show the class a bag of 20 ping-pong balls and explain that you want to put the 20 ping-pong balls into the 5 transparent containers with each container containing an equal number of ping-pong balls. Ask a volunteer to put the 20 ping-pong balls into the containers, one ball at a time.
2. Ask some volunteers to count the number of ping-pong balls in each container. Lead the class to see that there is an equal number of 4 ping-pong balls in each container. Explain that by separating the 20 ping-pong balls into 5 containers with 4 ping-pong balls in each container, a division has taken place. Write the sentence ‘Division means to divide a set of items into equal groups’ and ask the pupils to repeat the sentence after you.

3. Repeat the above for different numbers of transparent containers and ping-pong balls to ensure that the pupils understand the concept of division as dividing a set of items into equal groups.

**Activity 3 (10 min): Class practice**

1. Ask the pupils to turn to page 186 of the Student's Book. Ask the pupils to work in pairs to find answers to the question ‘How should the 2 children share the things on the floor equally?’

2. Go through the examples on pages 187–188 of the Student's Book.

**Let’s Think**

**Activity 4 (25 min): Challenging exercise to stimulate thinking**

1. Ask the pupils to try out the exercise on page 188 of the Student's Book.

**Let’s Try…**

**Activity 5 (15 min): Individual practice**

1. Ask the pupils to try the exercises on page 189 of the Student’s Book. Ask a few pupils to share their answers with the class.

**Homework**

1. Ask the pupils to do Workbook 1B—Worksheet 51.

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**Answers**

1. (a) 6  (b) 6  (c) 4  (d) 2  (e) 3

2. 5 eggs in each basket

3. 4 cherries for each muffin

4. 3 doughnuts for each plate

5. 4 biscuits for each jar

6. 3 tins

7. 10 paper clips
8. (a) There are 6 toys altogether.
   There are 3 shelves of toys.
   There are 2 toys on each shelf.
(b) There are 12 bananas altogether.
    There are 3 bunches of bananas.
    There are 4 bananas in each bunch.
(c) There are 30 buns altogether.
    The buns are put equally on 6 plates.
    There are 5 buns on each plate.
9. (a) 20 storybooks, 4 storybooks on each shelf
(b) 3 boys, 6 lollipops each
(c) 4 plates, 5 tarts on each plate

**GROUPING**

**Suggested Duration**
3 periods (120 min)

**Learning Outcomes**
Pupils should be able to:

- use the concept of grouping to divide a quantity into equal sets

**Instructions**

_Let's Learn…_

**Activity 1 (40 min): Understand the concept of division as grouping a set of items into equal groups**

1. Ask 16 volunteers to come forward and stand in front of the class. Ask the 16 pupils to pair up by holding the hands of their partners to form groups of 2. Get the rest of the class to count the number of pairs. Lead the class to see that there are 8 groups of 2. Write on the board ‘8 groups of 2’ and get the whole class to repeat the phrase. Explain that grouping a set of items into equal groups is also a form of division.
2. Repeat the above to show 4 groups of 4 and 2 groups of 8.

**Activity 2 (20 min): Class practice**

1. Go through the examples on pages 190–191 of the Student’s Book.

_Let's Try…_

**Activity 3 (20 min): Individual practice**

1. Ask the pupils to try the exercises on page 192 of the Student’s Book. Ask a few pupils to share their answers with the class.
Homework
1. Ask the pupils to do Workbook 1B—Worksheet 52 and Practice 14.

(Revision (40 min

Fun with Maths
1. Pair up the pupils to play the game on page 193 of the Student's Book. Lead the pupils to see that with a greater number of beans, more beans will be put into each cup. You may also get the pupils to play the game again using fewer cups and lead them to see that with fewer cups, more beans will be put into each cup.
2. Revise and go over the pupils' homework.

Answers

page 192
1. There are 5 groups.
2. There are 8 children.
3. There are 9 cakes

Worksheet 52
1. (a) 9  (b) 2  (c) 4  (d) 4
2. 4 boxes
3. 9 baskets 4. 5 vases
5. 3 plates 6. 2 boxes
7. 2 shelves

Practice 14
1. 3 pets each
2. (a) 4  (b) 3  (c) 6  (d) 2
3. (a) 6 roses in each vase  (b) 6 vases, 3 roses in each vase
4. (a) 4  (b) 5  (c) one more group
5. 2 more groups
Unit 15: Fractions

RECOGNIZING FRACTIONS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• recognize unit fractions

Instructions
Let’s Learn
Activity 1 (40 min): Know the concept of fractions as equal parts of a whole
Things you need: a circle, a rectangular strip, square and a marker

1. Show the class a big circle. Fold the circle into 2 equal parts. Unfold it and then tell the class that you have created ‘two equal parts of a whole’.

2. Next, shade one of the equal parts and tell the class ‘1 out of 2 equal parts’ is shaded. Ask the class to repeat ‘1 out of 2 equal parts is shaded’.

3. Introduce the concept of fraction by writing the fraction corresponding to ‘1 out of 2 equal parts’ as follows:

\[
\frac{1}{2}
\]
1 out of 2 equal parts

4. Read the fraction as one half. Ask the class to repeat after you.

5. Show \(\frac{1}{4}\) (one quarter) using a square as follows:

\[
\begin{array}{|c|c|}
\hline
\frac{1}{4} & \hline
\end{array}
\]
1 out of 4 equal parts is shaded

6. Emphasize that the parts divided must be equal in order to form fractions.

7. Explain to the pupils that the bottom number tells how many equal parts something has while the top number tells how many equal parts are being talked about. The bottom number is known as the denominator and the top number is known as the numerator.
Write on the board:

1 numerator, it tells how many equal parts are being talked about
2 denominator, it tells how many equal parts something has

8. Ask the class to repeat the words ‘denominator’ and ‘numerator’.

**Activity 2 (20 min): Identify and write fractions from a given shape with equal parts**

**Things you need:** 12 rectangular strips

1. Explain the following steps used in writing fractions from a given shape with equal parts shaded:
   - Check that parts divided are equal or stated as equal.
   - Count the total number of equal parts: this forms the denominator.
   - Count the number of shaded equal parts: this forms the numerator.
   - Combine the denominator and numerator to form a fraction.

For example: Find the fraction represented by the shaded equal parts in the shape shown below.

```
      
     Total number of equal parts is 4.
    Number of equal parts shaded is 3.

   The fraction represented by the shaded parts is \( \frac{3}{4} \).
```

2. Provide more examples of shapes with equal parts shaded for the pupils to practise.

**Activity 3 (10 min): Class practice**

1. Go through the examples on pages 195–196 of the Student's Book.

*Let’s Try...*

**Activity 4 (10 min): Individual practice**

1. Ask pupils to do the exercises on page 197 of the Student's Book.

**Homework**

Ask pupils to do Workbook 1B—Worksheet 53.

**Answers**

*Let’s Try...* page 197

1. The second and third shapes are \( \frac{1}{2} \) shaded.
2. The first and third shapes are \( \frac{1}{4} \) shaded.
3. (a) \( \frac{1}{4} \)  (b) \( \frac{1}{2} \)  (c) \( \frac{1}{2} \)

**Worksheet 53**

4. (a) \( \frac{1}{2} \)  (b) \( \frac{1}{4} \)  (c) \( \frac{1}{4} \)  (d) \( \frac{1}{2} \)  (e) \( \frac{1}{2} \)  (f) \( \frac{1}{4} \)
Unit 16: Time

TELLING THE TIME

Suggested Duration
5 periods (200 min)

Learning Outcomes
Pupils should be able to:
• tell and write the time to the hour
• tell and write the time to the half hour

Instructions
Let’s Learn

Activity 1 (40 min): Learn about the clock and time
Things you need: a clock face with movable hour and minute hands
1. Show the pupils the clock and ask the following questions to teach them about the clock and time:
   • ‘What is the clock used for?’
     (It is used for telling or showing the time.)
   • ‘What do you find on the face of the clock?’
     (There are numbers and two hands on the face of the clock.)
   • ‘What are the two hands called?’
     (The shorter hand is the hour hand and the longer hand is the minute hand.)
   • ‘What are the numbers shown on the face of the clock?’
     (The numbers are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.)
2. Introduce the word ‘o’clock’ to the class. Write the word on the board and ask the pupils to repeat it.
3. Move the minute hand to the number 12 and the hour hand to the number 1 and explain that the time shown is ‘1 o’clock’. Write on the board, ‘1 o’clock’. Emphasize that when the word ‘o’clock’ is used, the minute hand, which is the longer hand, is always at the number 12. Repeat this for other times from 2 o’clock to 12 o’clock. For 12 o’clock, point out that both the hour and minute hands are together at the number 12.

Activity 2 (40 min): Tell and write time to the hour using ‘o’clock’
Things you need: a clock face with movable hour and minute hands and a real clock
1. Ask three pupils to come forward. One pupil will adjust the hands to show a time to the hour, another pupil will read out loud the time shown and the third pupil will write the
time using ‘o’clock’ on the board. Ask the rest of the class to check if the time is correctly shown and written. The three pupils take turns in each other’s roles. Repeat this with other groups of pupils.

2. Go through the examples on pages 199–200 of the Student’s Book.

3. Help pupils to understand further the concept of time by asking the pupils to write down on a piece of paper what they do on Sunday by the hour, starting from the time they wake up. For example:
   6 o’clock—Wake up, brush teeth and eat breakfast
   8 o’clock—Watch TV programme
   4 o’clock—Play with toys
   Ask the pupils to share with their partner what they have written.

4. Show the real clock and adjust the hands to show 3 o’clock. Show how the time changes from 3 o’clock to 4 o’clock when you move the minute hand one round. Point out that as the minute hand moves one round, the hour hand also moves from 3 to 4. Explain that one round by the minute hand is equivalent to a time of 1 hour. Let the pupils try adjusting the minute hand to see how the hour and minute hands move in tandem.

Activity 3 (40 min): Tell and write time to the half hour using ‘half past’

Things you need: a clock face with movable hour and minute hands and a real clock

1. Set the clock at 9 o’clock and revise with the pupils the concept of o’clock. Move the minute hand to the number 6 and the hour hand halfway between the number 9 and 10. Tell the class that the time shown is ‘half past 9’. Show a few more examples to demonstrate how to use half past.

2. Ask three pupils to come forward. One pupil will adjust the hands to show a time to the half hour, another pupil will read out loud the time shown and the third pupil will write the time using ‘half past’ on the board. Ask the rest of the class to check if the time is correctly shown and written. The pupils take turns in each other’s roles. Repeat this with other groups of pupils.

3. Go through the examples on pages 201–202 of the Student’s Book.

4. Show the real clock and adjust the hands to show 10 o’clock. Show how the time changes from 10 o’clock to half past 10 when you move the minute hand to the number 6. Point out that as the minute hand moves to the number 6 which is half a round, the hour hand also moves at the same time to the midway mark between 10 and 11. Explain that half a round by the minute hand is equivalent to a time of half an hour. Let the pupils try adjusting the minute hand to see how the hour and minute hands move in tandem.

Let’s Try…

Activity 4 (20 min): Individual practice

1. Ask the pupils to try the exercises on page 203 of the Student’s Book.

Homework

Ask the pupils to do Workbook 1B—Worksheets 54, 55 and Practice 15.
Answers

(a) half past 9    (b) 3 o’clock    (c) half past 4    (d) half past 7

**WORK Sheet 54**

1. (a) half past 10    (b) 3 o’clock    (c) 7 o’clock
   (d) half past 2    (e) half past 6    (f) 4 o’clock
4. (a) half past 6    (b) 1 o’clock    (c) half past 4

**WORK Sheet 55**

1. (a) 5 o’clock    (b) half past 7    (c) 8 o’clock    (d) half past 9
2. (a) 7 o’clock    (b) half past 7    (c) half past 12    (d) 1 o’clock
3. (a) 2 o’clock    (b) half past 2    (c) 4 o’clock    (d) 5 o’clock

**Practice 15**

1. (a) half past 2    (b) 4 o’clock    (c) half past 4
3. (a) half past 4    (b) 8 o’clock    (c) 2 o’clock
   (d) half past 10    (e) 10 o’clock    (f) half past 11

**Let’s Think**

**Activity 5 (20 min): Interesting exercise to enhance learning**

1. Let the pupils work individually on the exercise on page 204 of the Student’s Book. Ask them to share their answers with their partners.

**Revision (40 min)**

**Fun with Maths**

*Things you need: paper plate, coloured paper, scissors, markers and paper fastener*

1. Ask the pupils to use the paper clocks that they have made to show time to the hour and to the half hour. You may say out a time and the pupils have to show the time on their clocks.
2. Display the pupils’ paper clocks in the classroom.
3. Revise and go over the pupils’ homework.
Unit 17: Money

RECOGNIZING OUR COINS AND NOTES

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
• identify coins and notes of different denominations

Instructions

Let’s Learn...

Activity 1 (20 min): Recognize the different denominations of coins and notes of the Pakistani currency
Things you need: real coins and notes
1. Show real coins to the pupils and read out their values one at a time. Ask the pupils to repeat them. Flip over the coins to show the other side. Introduce the word ‘paisa’. Inform the pupils that the 5-paise coins and 10-paise coins are produced by the State Bank of Pakistan even today. However, they are not used in the market any more.
2. Show real notes to the pupils and read out their values one at a time. Ask the pupils to repeat them. Flip over the notes to show the other side. Introduce the word ‘rupee/rupees’ and the corresponding symbol ‘Re/Rs’.
3. Go through the set of coins and notes on page 207 of the Student’s Book.

Activity 2 (20 min): Write the values of coins and notes in words and numerals
1. Show a coin to the class and ask a pupil to write its value on the board in words and numerals. Do this for other coins and notes.

Additional activity (15 min): Game to enhance recognition of coins and notes
Things you need: set of cards, each card showing a picture of a coin or a note or the value of a coin or a note
1. Pair up the pupils. Give each pair a set of the cards. Shuffle the cards and have them placed facedown on the table. Pupils take turns to turn over two cards and if they match (i.e. the picture matches the value), he keeps them, if not, the cards are placed back face down on the table. The pupil with the most cards wins.

Let’s Explore

Activity 3 (25 min): Examine the coins and notes in details
1. Refer the pupils to page 208 of the Student’s Book. Ask the class, ‘Whose picture is on the notes?’ Tell them that the picture is that of Quaid-e-Azam Mohammad Ali Jinnah,
the founder of Pakistan. He was also the first Governor General of Pakistan when Pakistan gained independence on 14 August 1947.

2. Show the pupils some old coins and notes used in Pakistan.
3. Show the latest notes being used in the country. Ask them to hold the note against the light to reveal the watermarks.

Let's Try...

Activity 5 (15 min): Individual practice
1. Ask pupils to do the exercise on page 209 of the Student’s Book

Homework
Ask pupils to do Workbook 1B—Worksheet 56.

Answers

page 209

25-paise coin: 4
50-paise coin: 4
one-rupee coin: 3
two-rupee coin: 4
two-rupee coin: 4
five-rupee coin: 2
five-rupee note: 3
ten-rupee note: 2
twenty-rupee note: 2
fifty-rupee note: 1
hundred-rupee note: 1

EXCHANGING MONEY

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:

- match a coin/note of one denomination to an equivalent set of coins/note of another denomination
Instructions

Let’s Learn…

Activity 1 (20 min): Exchange a coin for other coins of lower value
Things you need: a one-rupee coin, two 50-paise coins, and four 25-paise coins
1. Show a one-rupee coin and ask a pupil to exchange the one-rupee coin for other coins of lower value. Guide the class to exchange the one-rupee coin for 50-paise coins, and 25-paise coins.

Activity 2 (20 min): Exchange a note for other notes of lower value
Things you need: play notes—Rs 100 note, Rs 50 notes, Rs 20 notes, Rs 10 notes Rs 5 notes and Rs 2 coins
1. Show a Rs 100 note and ask a pupil to exchange the note for other notes of lower value. Guide the class to exchange the Rs 100 note for Rs 50 notes, Rs 20 notes, Rs 10 notes, Rs 5 notes and Rs 2 coins.

Activity 3 (20 min): Exchange a note for other coins
Things you need: Rs 10 note, Rs 5 note, Rs 2 coins and ten one-rupee coins and twenty 50-paise coins
1. Show a Rs 10 note and ask a pupil to pick out the correct number of one-rupee coins to exchange for it. Do this for a Rs 5 note and a Rs 2 coin.
2. Repeat the above for exchanging with 50-paise coins instead.

Activity 4 (10 min): Class exercise
1. Go through the examples on pages 210–212 of the Student’s Book.

Let’s Try…

Activity 5 (10 min): Individual practice
1. Ask the pupils to do the exercises on page 213 of the Student’s Book. Ask some pupils to share their answers with the class.

Homework
Ask pupils to do Workbook 1B—Worksheet 57.

Answers

page 213
(a) Rs 10  (b) Rs 5  (c) Rs 50  (d) Rs 15  (e) Rs 100
COUNTING THE AMOUNT OF MONEY

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- count the amount of money count
- use the symbols Re and Rs correctly

Instructions

Let’s Learn…

Activity 1 (30 min): Count the amount of money from coins and notes
Things you need: real coins and notes
1. Show three coins of different denominations and ask the class, ‘How much money is here?’
   Lead the class to do some simple counting in paise. Repeat for other examples.
2. Show three notes of different denominations and ask the class, ‘How much money is here?’
   Lead the class to do some simple counting in rupees. Repeat for other examples.

Activity 2 (10 min): Use the Re/Rs correctly
1. Explain that the short form for rupees is ‘Rs’. The short form for one rupee is ‘Re’. Write
   them on the board.
2. Say amounts of money and ask pupils to come forward to write them on the board.

Activity 3 (20 min): Associate the amount of money with items
1. Ask the class what they can buy with the following amounts of money:
   - 50 paise
   - Rs 8
   - Rs 50
   - Rs 25
   - Rs 70
   - Rs 100
2. Go through the examples on page 214 of the Student’s Book.

Let’s Try…

Activity 4 (20 min): Individual practice
1. Ask the pupils to do the exercises on page 215 of the Student’s Book. Ask some pupils to
   share their answers with the class.

Homework
Assign pupils to do Workbook 1B—Worksheet 58.
Answers

Andy: Rs 8
Mohsin: Rs 13
Kelly: Rs 34
Natasha: Rs 40
Tracy: Rs 22

Natasha saved the most money.

Worksheet 58

1. (a) 50 paise  (b) Rs 2  (c) 75 paise  (d) Rs 4  (e) Rs 10  (f) Rs 3
2. (a) Meg: 75 paise  Greg: 50 paise  Parveen: Rs 4  Sarah: Rs 3
   Anis: Rs 15  Rabia: Rs 11
   (b) Anis
3. Accept reasonable answers.

WORD PROBLEMS

Suggested Duration

3 periods (120 min)

Learning Outcomes

Pupils should be able to:

- solve word problems involving addition and subtraction of money in rupees only

Instructions

Let’s Learn...

Activity 1 (40 min): Solve simple addition and subtraction of money in word problems

1. Go through the examples on pages 216–217 of the Student’s Book.
2. Ask two pupils to come forward. Each pupil is to say a word problem on the food that they bought during recess and the prices of the food. Lead the pupils as follows:
   Pupil A might say ‘I bought a chicken sandwich for Rs 12 and one drink for 15. How much did I spend altogether?’
   Pupil B will add up the two amounts and then answer, ‘You spent Rs 27 altogether.’
3. Repeat step 2 for subtraction by different pupils as follows:
   Pupil A might say, ‘I bought a packet of juice for Rs 16. I gave Rs 20 to the seller. How much change did I get back?’
Pupil B will do a subtraction and then answer, ‘You got back Rs 4 change.’

4. Repeat the above for other examples.

**Let’s Think**

**Activity 2 (30 min): Challenging problems to enhance learning**

1. Read out the challenging problems on page 218 of the Student’s Book and ask the pupils to try them out on their own before showing them the answers on the board.

**Let’s Try…**

**Activity 3 (10 min): Individual practice**

1. How much money is here the pupils to do the exercises on page 219 of the Student’s Book. Ask some pupils to share their answers with the class.

**Homework**

How much money is here pupils to do Workbook 1B—Worksheet 59 and Practice 16.

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**Answers**

*Let’s Try* page 219

(a) Rs 5   (b) Rs 40 – Rs 6 = Rs 34  (c) Rs 55 – Rs 50 = Rs 5

**Worksheet 59**

1. (b) Rs 11  (c) Rs 22
2. (a) Rs 24 + Rs 5 = Rs 29  (b) Rs 12 – Rs 5 = Rs 7
3. (a) Rs 56 + Rs 30 = Rs 86  (b) Rs 25 – Rs 2 = Rs 20

**Practice 16**

2. Rs 2, Rs 2, Rs 3, Rs 2
3. Rs 2, Rs 3, Rs 20, Rs 3
4. (a) Rs 59  (b) Rs 12

**Revision (40 min)**

**Fun with Maths**

1. Pair up the pupils to play the fun game on page 220 of the Student’s Book.
2. Revise and go over the pupils’ homework.
Unit 18: Picture Graphs

READING PICTURE GRAPHS

Suggested Duration
2 periods (80 min)

Learning Outcomes
Pupils should be able to:
- collect and organize data
- read and interpret picture graphs in both horizontal and vertical forms

Instructions

Let’s Learn…

Activity 1 (40 min): Organize data in a picture graph and interpret it

Things you need: different numbers of cut-outs of star, circle, square and triangle

1. Give every pupil a cut-out shape randomly. On the board, draw four broad columns and write ‘star’, ‘circle’, ‘square’ and ‘triangle’ at the bottom of the columns. Instruct the pupils to draw the shape of the cut-out that each is holding in the correct column. Once everyone has finished, explain that they have just created a ‘picture graph’ that shows the number of cut-outs grouped by shape. Write the words ‘picture graph’ on the board and ask the pupils to repeat the words.

2. Ask four pupils to count the shapes in the columns and then write the numbers at the ends of the columns. Lead the class to form sentences to describe the picture graph as follows:
   - There are ____ stars.
   - There are ____ circles.
   - There are ____ squares.
   - There are ____ triangles.
   - There are more _____ than _____.
   - There are fewer _____ than _____.
   - There are ____ more ____ than _____.
   - There are ____ fewer _____ than _____.
   - The ____ is the most common shape.

3. Draw on the board five rows corresponding to five different types of fruits: banana, orange, mango, apple, and apricot. Stick the pictures of the fruits at the beginning of each row. Ask the pupils which of the five fruits they like to eat most and to draw a cross in
the row that shows their favourite fruit. Once everyone has finished, explain that they have just created another picture graph showing their favourite fruits.

4. Ask five pupils to count the crosses in the five rows and write the numbers at the ends of the rows. Lead the class to form sentences to describe the picture graph such as:

- There are ____ children who like bananas.
- There are ____ children who like oranges.
- There are ____ children who like mangoes.
- There are ____ children who like apples.
- There are ____ children who like apricots.
- There are more children who like _____ than _____.
- There are fewer children who like _____ than _____.
- Most children like _____.
- ____ more children prefer ____ to _____.
- ____ fewer children prefer _____ to _____.

5. Point out to the pupils that a picture graph can either be drawn vertically in columns or horizontally in rows.

6. You may create more picture graphs on other topics such as their favourite animals, their favourite TV programme, their favourite colours, etc.

**Activity 2 (20 min): Class practice**

1. Go through with the pupils the examples on pages 222–226 of the Student’s Book.

**Additional Activity (40 min): Group game to enhance learning**

*Things you need: a dice, copies of the table shown below*

1. Divide the class into groups of 4 or 5. Give each group a dice and a copy of the table.

<table>
<thead>
<tr>
<th>(name)</th>
<th>(name)</th>
<th>(name)</th>
<th>(name)</th>
<th>(name)</th>
</tr>
</thead>
</table>

2. Ask pupils to write their names at the bottom of the columns.

3. The pupils take turns to roll the dice. Whoever gets 1 or 6 on the dice, gets to draw a star in his/her column. If he/she gets a 6, he/she also gets another chance to roll the dice again. The winner is the one who has the most stars.

*Let’s Try…*

**Activity 3 (20 min): Individual practice**

1. Ask the pupils to try the exercises on pages 227 and 228 of the Student’s Book.
Homework
Ask the pupils to do Workbook 1B—Worksheet 60.

Answers

Page 227

1. (a) 2  (b) 4  (c) 1 more  (d) 1  (e) 10
2. (a) 6  (b) 3 more  (c) 3  (d) chocolate

Worksheet 60

1. (a) 5 birds, 4 snakes, 2 lions, 3 tigers  (b) 3  (c) 1
2. (a) 17  (b) 3  (c) 2  (d) 11
3. (a) 4 carrots, 5 tomatoes, 7 potatoes, 8 chilies
   (b) 2  (c) 3  (d) 3
4. (a) Test 1  (b) 6  (c) 2
5. (a) 19  (b) 2  (c) burgers and fruits  (d) 1

Making Picture Graphs

Suggested Duration
3 periods (120 min)

Learning Outcomes
Pupils should be able to:
- make picture graphs
- use a symbol/picture to represent one object

Instructions
Let’s Learn...

Activity 1 (10 min): Make picture graphs and use symbols/pictures to represent one object
1. Go through the examples on pages 229 and 230 of the Student’s Book.

Activity 2 (30 min): Fun game
Things you need: 40 letter cards; each printed with one of the letters, A, B, C, D, E and F
1. Draw a horizontal picture graph on the board showing 6 rows to represent, the letters, A, B, C, D, E & F. Give each pupil a letter card randomly.
2. Ask the pupils that in a given time of 3 minutes, they are to go around to look for other pupils who have the same letter cards and assemble together. Once they are together, they are to count the letter cards. The group will appoint a leader who will come forward to draw the number of symbols in the correct column of the picture graph using the symbol of a smiling face.

3. The group who completes the task first and accurately are the winners.

4. Using the picture graph, ask some pupils to describe the organized data.

Let's Explore

Activity 3 (20 min): Group activity to enhance learning

Things you need: blank paper

1. Divide the class into 3 groups and ask them to work on the activity on page 231 of the Student’s Book. Each pupil takes turns to say one thing about the picture graph.

2. Draw a big chart on the board to show all the months, January to December. Ask one pupil from each group to come forward to transfer their data on to the whiteboard.

3. Ask the pupils questions about the picture graphs.

Let’s Try...

Activity 4 (20 min): Individual practice

1. Ask the pupils to try the exercise on page 232 of the Student’s Book.

Homework

Ask pupils to do Workbook 1B—Worksheet 61 and Practice 17.

Revision (40 min)

1. Revise and go over the pupils’ homework.

WORKSHEET 61

1. (a) 4 muffins, 6 doughnuts, 5 cakes

Practice 17

1. (a) Sam  (b) Joyce  (c) Joyce
Suggested Duration
2 periods (80 min)

Answers

1. (a) 4 frogs, 8 water snails, 7 fish, 5 tortoises  (b) 11  (c) 13
2. (a) 18  (b) 16  (c) 20  (d) 28  (e) 24
3. (a) $5 \times 7 = 35$  35 ducks are grouped into 5 tubs.
   There are 7 ducks in each tub.
   (b) $6 \times 6 = 36$  36 sweets are shared among 6 children.
      Each child gets 6 sweets.
4. (a) 11  (b) English and Mathematics  (c) Science  (d) History
5. (a) Rs 50 – Rs 42 = Rs 8  (b) Rs 18 + Rs 42 + Rs 40 = Rs 100
6. (a) 2  (b) 2  (c) 2  (d) 1  (e) 24
7. (a) Mr Lee  (b) Mr Lee and Mr Smith
8. (a) 3  (b) 4  (c) 2
9. (a) 16, 17, 18  (b) 35, 33, 32  (c) 20, 60, 80
10. (a) 12 o’clock  (b) half past 6
11. (a) 5 + 8 = 13, 13 boys  (b) 8 + 4 = 12, 12 runners
12. (a) 3 x 3  (b) 3 x 5  (c) 6 x 1  (d) 5 x 2
13. 4 oranges
14. 9 boys
15. (a) 2, 4, 6  (b) 6, 12  (c) heavier
16. (a) D  (b) C  (c) half past 11
17. (a) 18 – 5 = 13  13 bulbs
18. 9 + 8 = 17  17 mangoes
19. 11 + 8 = 19  19 stickers
20. 20 – 14 = 6  6 sweets