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* * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * * *

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LET'S DO MATHEMATICS

BOOK 3

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A GOG/IDB Primary Education Improvement Programme
Easy Path Series
FOREWORD

One welcomes the publication of this series of textbooks as part of the Primary Education Improvement Project funded by the Inter-American Development Bank and the Government of Guyana.

This series of texts has been long in planning, writing and producing. In the process however, many Guyanese have developed skills in textbook writing and publication. This will serve Education well in the future.

We congratulate all those responsible for the production of these texts. They have done a good job. Guyanese children at the Primary level and indeed the society as a whole will be the beneficiaries of their labour.

Thanks to the Inter-American Development Bank for its financial support. Primary Education in Guyana will benefit considerably with the availability of relevant reading material.

Dale A. Bisnauth  
Senior Minister of Education and Cultural Development
PREFACE

I hear and I forget
I see and I remember
I DO and I understand

A Chinese Proverb.

Let’s Do Mathematics is part of the Easy Path series, a GOG/IDB Primary Education Improvement Project.

The success of this project hinges to a great extent on the commitment and dedication of the writing team and the committee, both of which comprise experienced Primary School teachers; lecturers of the Cyril Potter College of Education and the University of Guyana; Curriculum Writers and Officers of the Ministry of Education.

This series caters for the requirements of the Primary Schools’ Curriculum in Guyana and attempts to provide teachers and pupils with a clearer understanding of the topics/concepts listed. It comprises pupils’ books for six (6) levels, accompanied by Teachers’ Manuals and is designed to foster greater interest in Mathematics teaching and learning.

At each level the book is organized into thirty (30) units which suggest a year’s work. There are six (6) ‘Let us look back’ pages at each level. These are meant to be a revision of concepts previously taught. The results of these must therefore be carefully analyzed and used to the pupils’ advantage. Care should be taken to ensure that each concept is fully accomplished before attempting a higher level concept.

A deliberate attempt was made to present the years’ work in sequence. The emphasis throughout the course is a hands on approach. Great care has been taken to ensure that the books are simple to follow and are related to the likely experiences of the pupils.

WHY MATHEMATICS?
So that recipes may be doubled
meals may be ordered
food/money may be divided
time/plants may be estimated and measured
prices in shops and stores may be compared
graphs/charts may be interpreted
bills may be paid
change calculated
and love may be shared.

LET’S DO MATHEMATICS
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UNIT 1  NUMBERS, NUMERALS, PLACE VALUES

Numbers to 100

Exercise A

1. Count in tens.
   How many tens? How many beads?

2. Write names for:
   (a) 20
   (b) 30
   (c) 50
   (d) 80

3. Write numerals for:
   (a) ninety
   (b) seventy
   (c) forty
   (d) sixty

4. Use your bundles of ten and some single objects.
   Build numbers from ninety.

Remember

<table>
<thead>
<tr>
<th>Ones</th>
<th>1 ten</th>
</tr>
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<tr>
<td>10</td>
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<table>
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<th>Tens</th>
<th>One hundred</th>
</tr>
</thead>
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One hundred on an abacus looks like this
Skip Count

Count and find patterns.
How many patterns do you find?

Exercise B

1. Count and complete:

   ![Number Line 1]

   ![Number Line 2]

   ![Number Line 3]

2. Complete these sequences.

   (a) 12  [ ] 16  18  [ ]  [ ] 24
   (b) 23  26  [ ] 32  [ ] 44
   (c) 40  [ ] 50  70  [ ] 90  [ ]
Let Us Build Numbers

Exercise C

1. Each bundle represents one hundred sticks. How many sticks are there in a, b, and c?

(a)

(b)

(c)

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Names</th>
</tr>
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<tbody>
<tr>
<td>..........</td>
<td>...............</td>
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<tr>
<td>..........</td>
<td>...............</td>
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<tr>
<td>..........</td>
<td>...............</td>
</tr>
</tbody>
</table>

2. Complete these:

   (a) five hundred   500   (d) 700   seven hundred
   (b) eight hundred  .....   (c) 100   .................
   (c) two hundred    .....   (f) 300   .................

3. Write the ordinal number for each starting with the smallest first.

   900  200  500  300  800  400  700  600  100
Skip Counting in Hundreds

Exercise D
Let us count in hundreds

Follow the arrows to complete the jumps the frog made.

![Diagram of skip counting in hundreds]

REVIEW

1. Find the missing numbers:
   (a) 22, 24, ___, 28, 30, ___, 34, ___, 40, 42
   (b) 12, 15, ___, 21, 24, ___, 30, 33,
   (c) 60, 65, ___, 75, 80, ___, 90,
   (d) 10, 20, ___, 40, 50, ___, 34, 70
2. Match numerals with their names

(a) 300 \hspace{1cm} \text{three hundred}
(b) 600 \hspace{1cm} \text{seven hundred}
(c) 700 \hspace{1cm} \text{nine hundred}
(d) 900 \hspace{1cm} \text{six hundred}

3. Jump one step then name the number
UNIT 2 ADDITION AND SUBTRACTION

Addition Facts to 18

1. We add to find how many there are

\[
\begin{array}{c}
5 \\
3 \\
\hline
8
\end{array}
\]

Each number added is called an addend.
When all the numbers are added, we get the sum.

Here are two ways to show addition.

\[
\begin{array}{c}
\text{addend} & \rightarrow & 5 \\
\text{addend} & \rightarrow & + 3 \\
\text{sum} & \rightarrow & 8
\end{array}
\]

\[
5 + 3 = 8
\]

2. Look at the number line.
Read the number story.
Arrange the addends to show the two ways of addition.
Find the sum.

Billy wants to save money. He has none (0).
Mother gives him $500 then he gets $600 from Father.
He puts the money into the School's Thrift Society.
How much money has he saved in all?
Exercise A

1. Find the sum:
   (a) add 2
      \[
      \begin{array}{c|c}
      \hline
      7 & 9 \\
      \hline
      11 & 15 \\
      \hline
      8 & 8 \\
      \hline
      \end{array}
      \]
   (b) add 3
      \[
      \begin{array}{c|c}
      \hline
      7 & 10 \\
      \hline
      11 & 15 \\
      \hline
      8 & 8 \\
      \hline
      \end{array}
      \]
   (c) add 4
      \[
      \begin{array}{c|c}
      \hline
      7 & 11 \\
      \hline
      11 & 15 \\
      \hline
      8 & 8 \\
      \hline
      \end{array}
      \]

2. Find the sum:
   (a) \( 8 + 3 = 11 \)
   (b) \( 4 + 5 = \boxed{} \)
   (c) \( 9 + 1 = \boxed{} \)
   (d) \( 7 + 2 = \boxed{} \)
   (e) \[
   \begin{array}{c|c|c|c}
   \hline
   7 & 6 & 5 \\
   \hline
   3 & 4 & 2 \\
   \hline
   \end{array}
   \]
   (f) \[
   \begin{array}{c|c|c|c}
   \hline
   4 & 9 & 8 \\
   \hline
   8 & 1 & 1 \\
   \hline
   \end{array}
   \]

Subtraction Facts to 18

We subtract to find how many are left. What is left is called the difference.

\[
\begin{array}{c|c|c|c}
\hline
5 & - & 2 & = 3 \\
\hline
\end{array}
\]

We can show this subtraction in two ways.
Exercise B

1. Write a subtraction sentence in two ways to show Sue’s experience.

Sue is playing Snakes and Ladders. She is at zero. She moves ten spaces ahead to the snake’s head, then three spaces back to it’s tail. Where is she now?

2. Find the difference:

(a) \( 9 - 3 = \square \)  
(b) \( 8 - 5 = \square \)  
(c) \( 7 - 4 = \square \)  
(d) \( \begin{array}{ccc} 8 & 7 & 6 \\ -2 & -3 & -4 \end{array} \)  
(e) \( \begin{array}{ccc} 9 & 5 & 8 \\ -1 & -2 & -6 \end{array} \)

3. Copy and complete:

(a) Subtract 2

\[
\begin{array}{c|c}
9 & 7 \\
11 & 11 \\
15 & 15 \\
8 & 8 \\
\end{array}
\]

(b) Take 3

\[
\begin{array}{c|c}
9 & 6 \\
11 & 11 \\
15 & 15 \\
8 & 8 \\
\end{array}
\]

(c) Minus 4

\[
\begin{array}{c|c}
9 & 5 \\
11 & 11 \\
15 & 15 \\
8 & 8 \\
\end{array}
\]

Zero in Addition

Three and zero make three.

Zero and three make three.
Write to show the sum in each row.  
What can you say about each sum?  
Try this in subtraction.  
What have you found out?  

Try some more additions with zero.  
Work with a friend.  

**Adding numbers in Different Ways**  

The addition chart shows the sum of 5 and 7. Use the chart to find the sum of 7 and 5.  

```
+ 1 2 3 4 5 6 7 8 9  
1 2 3 4 5 6 7 8 9 10  
2 3 4 5 6 7 8 9 10 11  
3 4 5 6 7 8 9 10 11 12  
4 5 6 7 8 9 10 11 12 13  
5 6 7 8 9 10 11 12 13 14  
6 7 8 9 10 11 12 13 14 15  
7 8 9 10 11 12 13 14 15 16  
8 9 10 11 12 13 14 15 16 17  
9 10 11 12 13 14 15 16 17 18  
```  

Try finding the sum of other numbers in the same way.  
What have you found out?
I can add two numbers in either order. The sum is always the same.

Exercise C
Add these. Use the chart.

1. (a) 8 + 0 = □ (b) 7 + 9 = □ (c) 6 + 5 = □
   0 + 8 = □ 9 + 7 = □ 5 + 6 = □
   (d) 2 + 9 + 2 (e) 8 + 5 + 8 (f) 0 + 6 + 0

Adding Three Numbers
Anil and Ann had to find the sum of these numbers: 4, 3 and 1.

\[
(4 + 3) + 1 = □ \\
7 + 1 = 8
\]

\[
4 + (3 + 1) = □ \\
4 + 4 = 8
\]

What do you notice about the sum each time?

I can group the addends in different ways. The sum is always the same.

Try this with other sets of three numbers.
Exercise D

1. Group these to find the sum.

   (a) $8 + 1 + 4 = \boxed{}$
   (c) $5 + 3 + 0 = \boxed{}$
   (e) $7 + 3 + 1 = \boxed{}$

   (b) $3 + 6 + 2 = \boxed{}$
   (d) $1 + 4 + 2 = \boxed{}$
   (f) $3 + 0 + 5 = \boxed{}$

2. Copy and complete:

   (a) $(8 + 2) + 7$
      $\boxed{} + 7 = \boxed{}$

   (b) $5 + (5 + 4)$
      $5 + \boxed{} = \boxed{}$

   (c) $5 + (3 + 7)$
      $5 + \boxed{} = \boxed{}$

   (d) $(1 + 0) + 9$
      $\boxed{} + 9 = \boxed{}$

Adding Four Numbers

Exercise E

1. Copy and complete:

   (a) $3 + 5 + 2 + 7 = \boxed{}$
   (d) $5 + 4 + 2 + 6 = \boxed{}$

   (b) $6 + 1 + 0 + 4 = \boxed{}$
   (e) $6 + 2 + 4 + 5 = \boxed{}$

   (c) $4 + 0 + 1 + 6 = \boxed{}$
   (f) $10 + 4 + 2 + 1 = \boxed{}$

2. (a) 7  
      2
      1
      $+ 4$

(b) 6  
      4
      5
      $+ 1$

(c) 3  
      2
      8
      $+ 0$

(d) 1  
     4
     0
     $+ 7$
REVIEW

1. Use numeral cards e.g. 5 8 3

By moving around these three numeral cards, make two addition sentences and two subtraction sentences like these

(a) \( 3 + 5 = 8 \)  (b) \( 8 - 5 = 3 \)

\( 5 + 3 = 8 \)  \( 8 - 3 = 5 \)

Try this with other sets of numerals.

2. Look at the squares below.
Read the sign on each.
Add or subtract across and down.
The first one is done for you.

\[
\begin{array}{ccc}
+ & 4 & 5 \\
- & 2 & 3 \\
\hline
+ & 6 & 8 & 14 \\
\end{array}
\]

\[
\begin{array}{ccc}
+ & 9 & 2 \\
- & 7 & 1 \\
\hline
+ & 11 & 6 \\
\end{array}
\]

The numerals in the shaded parts show the answers across and down
14 is the sum of 9 and 5 (down).
It is also the sum of 6 and 8 (across).
UNIT 3  FRACTIONS

Halves, Quarters, Eights

1. Fold a piece of paper into two equal parts. Make the edges meet.
   Open it. The paper shows 2 equal parts. Name each part.

2. Fold the paper. Fold it again.
   Open it. It shows 4 equal parts. Name each part.

3. Fold the paper. Fold again. Fold again.
   Open it. It shows 8 equal parts. Name each part.

Fractions tell about fair shares. When an object is divided into equal parts, we use a fraction to describe each part.
Exercise A

1. Each fold shows a different fraction. Copy and complete.

<table>
<thead>
<tr>
<th>Shape</th>
<th>Number of folds</th>
<th>Number of equal parts</th>
<th>Fraction for each part</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>1</td>
<td>2</td>
<td>$\frac{1}{2}$ (one half)</td>
</tr>
<tr>
<td>(b)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A fraction has two parts.
The top part $\frac{1}{2}$ numerator
The bottom part $\frac{2}{2}$ denominator

The denominator tells into how many equal parts the object is divided into. The numerator tells the number of parts we are thinking of.

2. In each shape below, one part is shaded. Write a fraction to name the shaded part.

(a) ![Diagram](a)
(b) ![Diagram](b)
(c) ![Diagram](c)
(d) ![Diagram](d)
(e) ![Diagram](e)
(f) ![Diagram](f)
(g) ![Diagram](g)
3. Copy and complete:

<table>
<thead>
<tr>
<th>Fraction</th>
<th>Shaded part</th>
<th>Unshaded part</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td><img src="image1.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td><img src="image2.png" alt="Diagram" /></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td><img src="image3.png" alt="Diagram" /></td>
<td></td>
</tr>
</tbody>
</table>

**Halves, Quarters or Eights of a Set.**

Look at the set of kittens.
How many are there?
How many are black?
How many are white?
What can you say about the set of kittens?

![Diagram](image4.png)

We can use fractions to tell about the parts of a set.

4 flowers are in the set.
1 flower is shaded.
1 out of 4 is shaded.
\(\frac{1}{4}\) of the set of flowers is shaded.

**Exercise B**

1. Write a fraction to tell what part of each set is shaded.

(a) ![Diagram](image5.png)   (b) ![Diagram](image6.png)

(c) ![Diagram](image7.png)   (d) ![Diagram](image8.png)
2. Complete each sentence.

(a) \( \frac{1}{8} \) is shaded.  
(b) \( \frac{7}{8} \) is unshaded.

3. Draw a set and show each of these shaded parts.

(a) \( \frac{1}{2} \)  
(b) \( \frac{2}{4} \)  
(c) \( \frac{4}{8} \)  
(d) \( \frac{3}{4} \)  
(e) \( \frac{7}{8} \)

Comparing Fractions

Exercise C

1. Look at these strips.
   They are the same size.
   They show halves, quarters and eighths.

   We can see that \( \frac{1}{2} > \frac{1}{4} \); \( \frac{1}{4} > \frac{1}{8} \); \( \frac{1}{2} = \frac{2}{4} \)

2. Use the fraction chart.
   Copy and complete.

   (a) \( \frac{4}{8} \) \( \frac{2}{4} \)  
   (d) \( \frac{1}{2} > \frac{1}{4} \)

   (b) \( \frac{1}{4} \) \( \frac{3}{8} \)  
   (e) \( \frac{3}{2} = \frac{1}{4} \)

   (c) \( \frac{1}{2} \) \( \frac{2}{8} \)  
   (f) \( \frac{3}{2} < \frac{1}{4} \)

<table>
<thead>
<tr>
<th>Whole</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \frac{1}{2} )</td>
</tr>
<tr>
<td>( \frac{1}{8} )</td>
</tr>
</tbody>
</table>

REVIEW

1. Write the fraction that tells what part of each shape is shaded.

   (a)  
   (b)  
   (c)  
   (d)  

   (a)  
   (b)  
   (c)  
   (d)  

16
2. Write =, > or <.
Use diagrams or a fraction chart to help you.

(a) $\frac{2}{4}$  $\square$  $\frac{4}{8}$  
(c) $\frac{1}{4}$  $\square$  $\frac{2}{4}$  
(e) $\frac{1}{4}$  $\square$  $\frac{1}{2}$  

(b) $\frac{1}{2}$  $\square$  $\frac{6}{8}$  
(d) $\frac{3}{4}$  $\square$  $\frac{5}{8}$  
(f) $\frac{3}{8}$  $\square$  $\frac{2}{4}$  

3. Look at each set in the table.
Copy and complete.

<table>
<thead>
<tr>
<th>Set</th>
<th>Fraction</th>
<th>Shaded</th>
<th>Unshaded</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. For each draw a set to show the fraction.

(a) $\frac{6}{8}$  (b) $\frac{1}{2}$  (c) $\frac{2}{4}$  (d) $\frac{2}{8}$  (e) $\frac{3}{4}$  (f) $\frac{5}{8}$
UNIT 4 MEASUREMENT AND NUMERATION

Length — Non-Standards Units

Look at these objects. Can you name them?

Each object can be used as a unit of linear measure. We call each a non-standard unit. Use these non-standard units to measure the lengths of other objects.

Exercise A

1. Look around the classroom.
   Name some other objects that you can use as units to measure length.

2. Try measuring your textbook.
   Use any suitable unit of measure.
   Estimate how many units will line up from one end to the other.
   Measure to find out.

3. Play a game with a friend.
   Let your friend choose an object and a unit of measure in the classroom.
   You choose an object and a unit of measure.
   Ask your friend to estimate the length of your object and use your unit to measure it.
   You now estimate the length of your friend’s object and use his/her unit to measure the object.

We can also use these to measure...
4. Use a non-standard unit to measure objects. Record measures on the table like this.

<table>
<thead>
<tr>
<th>Object</th>
<th>Unit of measure</th>
<th>My estimate</th>
<th>Actual measure</th>
<th>My estimate was — unit(s) more / less</th>
</tr>
</thead>
<tbody>
<tr>
<td>match stick</td>
<td>5 units</td>
<td>4 units</td>
<td>1</td>
<td>—</td>
</tr>
<tr>
<td>hand span</td>
<td>3 units</td>
<td>5 units</td>
<td>—</td>
<td>2</td>
</tr>
<tr>
<td>hand span</td>
<td>..........</td>
<td>..........</td>
<td>..........</td>
<td>..........</td>
</tr>
</tbody>
</table>

**Ordinals To 31st**

<table>
<thead>
<tr>
<th>Sunday</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Saturday</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>9</td>
<td>10</td>
<td>11</td>
<td>12</td>
<td>13</td>
<td>14</td>
<td>15</td>
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<td>16</td>
<td>17</td>
<td>18</td>
<td>19</td>
<td>20</td>
<td>21</td>
<td>22</td>
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<td>23</td>
<td>24</td>
<td>25</td>
<td>26</td>
<td>27</td>
<td>28</td>
<td>29</td>
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<tr>
<td>30</td>
<td>31</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**AUGUST**

Read the dates on the calendar. Use these words.

- first
- 2nd
- 3rd
- 4th
Exercise B

1. Find dates for:
   (a) the third Tuesday.
   (b) the last Monday.
   (c) the first Sunday.
   (d) the fifth Wednesday.

2. Use ordinals to complete these.
   (a) 20th
   (b) ___ 11th ___ 13th ___
   (c) 31st 30th ___ 27th ___

Hundreds and Tens

Read the number
3 hundred 2 tens
= 300 + 20
= 320

Exercise C

1. Write the numerals for each.

(a) (b) (c) (d) (e) (f) (g) (h)

When we show hundreds, tens and zero on an abacus the place for the ones is without beads.

When we write the hundreds and tens we use zero to represent the ones.
Hundreds and Tens

Look at this

\[ \text{3 hundreds 2 tens} \rightarrow 320 \]

We write this number as three hundred twenty. In the old way we write it as three hundred and twenty.

Exercise D

1. Write names for these numerals

   (a) \[ \textbf{[Diagram]} \]
   (b) \[ \textbf{[Diagram]} \]
   (c) \[ \textbf{[Diagram]} \]
   (d) \[ \textbf{[Diagram]} \]

2. Write numerals for these names

   (a) one hundred forty.
   (b) three hundred twenty.
   (c) nine hundred ninety
   (d) two hundred fifty.
REVIEW

1. How many units long is each object?

Which object is longer?
By how many units?

2. Match these:
   3 hundreds 3 tens 710
   5 hundreds 2 tens 450
   7 hundreds 1 tens 520
   4 hundreds 5 tens 330

3. Now do these:
   (a) Begin at 7th, write the ordinals to 12th.
   (b) Begin at 31st, count backwards to 26th.
   (c) Which one does not fit in the order?
       Circle it.
       3rd, 2nd, 5th, 6th
   (d) After 20th comes ____.
UNIT 5  SUBTRACTION AND ADDITION

Relationships

Here we see 6 white puppies and 3 black puppies.
There are 9 puppies in all.
The addition shows:
\[ 6 + 3 = 9 \]
\[ 3 + 6 = 9 \]

Here 3 black puppies are leaving the set of 9 puppies.
The subtraction shows:
\[ 9 - 3 = 6 \]
\[ 9 - 6 = 3 \]

The four related number sentences for the addition and subtraction show that the same numbers can be used to tell different stories.

Exercise A

1. Use this picture to complete the number sentences.
   (a)
   \[
   \begin{align*}
   7 + \square &= 11 \\
   \square + 7 &= 11
   \end{align*}
   \]

   \[
   \begin{align*}
   11 - \square &= 4 \\
   \square - 4 &= 7
   \end{align*}
   \]

   (b) If \( 3 + 9 = 12 \), what is \( 12 - 9 \)?
   Make a drawing to help you.
2. Copy and complete:

(a) \(6 + 2 = \)  
(b) \(2 + 6 = \)  
(c) \(8 - 6 = \)  
(d) \(7 + 5 = \)  
(e) \(5 + 7 = \)  
(f) \(12 - 7 = \)

**Place Value**

Look at the abacus

The abacus shows 3 hundreds 2 tens and 6 ones.

3 hundreds 2 tens 6 ones. The numerals are 326.  
This is to read – three hundred and twenty-six.  
Can you write 3 hundreds 2 tens 6 ones another way?  
We can also write 3 hundreds 2 tens 6 ones, like this: \(300 + 20 + 6\).  
This is the expanded form or notation for 326.

**Exercise B**

1. Write the numeral and name for each of these.

(a)  
(b)  
(c)  
(d)

2. Copy and complete these:

(a) \(164 = 100 + 60 + 4\)  
(b) \(508 = \) + + +  
(c) \(237 = \) + + +  
(d) \(692 = \) + + +  
(e) \(345 = \) + + +  
(f) \(753 = \) + + +  

24
Look at the numeral 222, each 2 stands in a different place

The first 2 stands in the hundred’s place.
The second 2 stands in the ten’s place
The third 2 stands in the one’s place.

Exercise C

Look at this example: 454 — four hundred fifty-four
1. Make and name as many 3-digit numerals using the digits:
   1, 5, 8, 3, 6 and 9.

2. Copy and complete:
The first is done for you.

   (a) 2 8 (5) the 5 means 5 ones        (b) (6) 4 5 the 6 means __

   (b) (3) 1 4 the 3 means __        (d) 2 9 (0) the 0 means __

   (e) (1) 6 2 the 6 means __        (f) 8 (3) 6 the 3 means __

Exercise D

Write the number name for each:
(a) 235         (b) 543         (c) 713
(d) 371         (e) 602         (f) 384
REVIEW

Read the story then complete the statements below.

1. Richard sold 6 eggs on Sunday and 8 eggs on Monday. Sandra sold the same number of eggs as Richard.
   (a) Sandra sold 8 eggs on Sunday. How many did she sell on Monday?
   (b) Richard sold \[ \square + 8 = \square \] eggs.
   (c) Sandra sold \[ \square - 8 = \square \] eggs on Monday.

2. Write these numerals in the expanded form:
   (a) 157
   (b) 516
   (c) 475
   (d) 764

3. State the place value of each circled digit:
   (a) 2 4 \(\textcircled{9}\)
   (b) 3 3 \(\textcircled{6}\)
   (c) 5 1 \(\textcircled{8}\)
   (d) 1 6 \(\textcircled{3}\)
   (e) 4 \(\textcircled{2}\) 1
   (f) 7 \(\textcircled{5}\) 6

4. Copy then write the number names:
   (a) 176
   (b) 579
   (c) 433
   (d) 917

LET US LOOK BACK

1. (a) Arrange in order, smallest first.
   700, 200, 100, 900

   (b) Arrange in order, largest first.
   600, 100, 800, 300

2. Complete these:
   (a) 300, 400, \(\text{___}\), 600, \(\text{___}\).
   (b) 900, 800, \(\text{___}\), \(\text{___}\), 500.

3. Six hundred is the name for 600.
   Write names for:
   (a) 500
   (b) 80
   (c) 100
   (d) 700

26
4. \[359 = 300 + 50 + 9\]

Expand these:
(a) 512  
(b) 940  
(c) 215  
(d) 108

5. Write the value of the digits encircled.
(a) 2 \(\bigcirc\) 6  
(b) 3 \(\bigcirc\) 1 4  
(c) 7 0 \(\bigcirc\) 0

(d) 1 4 \(\bigcirc\) 7  
(e) 6 \(\bigcirc\) 2 5  
(f) 4 \(\bigcirc\) 8

6. Write >, < or =
(a) \(\frac{1}{2}\) \(\bigcirc\) \(\frac{2}{4}\)  
(c) \(\frac{3}{8}\) \(\bigcirc\) \(\frac{2}{4}\)

(b) \(\frac{1}{4}\) \(\bigcirc\) \(\frac{6}{8}\)  
(d) \(\frac{3}{4}\) \(\bigcirc\) \(\frac{1}{2}\)

7. Draw a set of 12 nuts.
Shade to show \(\frac{1}{3}\) of the set.

8. Gary was measuring a piece of wood.
Gary estimated the length to be 6 units.
He measured and found it was 8 units.
Which was greater? His estimate or the measure?
By how many units?

9. Group these to find the sum:
(a) \(3 + 2 + 5\)  
(b) \(6 + 0 + 1\)  
(c) \(5 + 3 + 7\)

10. Write the ordinals 5th to 12th in order starting with
(a) the lowest  
(b) the highest
UNIT 6 ADDITION AND TIME

Add Tens and Ones

Exercise A

1. (a) 4 (b) 3 (c) 4 (d) 2 (e) 3 (f) 5

Look at this addition problem. Use your small objects to find the answer.

\[
\begin{array}{cccc}
18 & + & 21 \\
\hline
\end{array}
\]

<table>
<thead>
<tr>
<th>Add the ones</th>
<th>Add the tens</th>
</tr>
</thead>
<tbody>
<tr>
<td>18 1 ten 8 ones</td>
<td>1 ten 8 ones</td>
</tr>
<tr>
<td>+ 21 2 tens 1 one</td>
<td>+ 2 tens 1 one</td>
</tr>
<tr>
<td>9 ones</td>
<td>3 tens 9 ones</td>
</tr>
</tbody>
</table>

We now have 3 tens 9 ones. Our new number is 39.

Exercise B

Now try these. Follow the same pattern.

1. (a) 23 (b) 12 (c) 40 (d) 12 (e) 32 (f) 21

\[
\begin{array}{cccc}
+ & 36 & + & 16 \\
\hline
\end{array}
\]

\[
\begin{array}{cccc}
+ & 31 & + & 26 \\
\hline
\end{array}
\]

\[
\begin{array}{cccc}
+ & 20 & + & 10 \\
\hline
\end{array}
\]

\[
\begin{array}{cccc}
+ & 11 & + & 15 \\
\hline
\end{array}
\]

Add Hundreds, Tens and Ones

Dan solves a problem.
He counted 214 mangoes.
His father brought 121 more mangoes.
This is how Dan found out how many mangoes there were in all.

\[
\begin{align*}
214 &= 2 \text{ hundreds } 1 \text{ ten } 4 \text{ ones} \\
+121 &= 1 \text{ hundred } 2 \text{ tens } 1 \text{ one} \\
\hline
&= 3 \text{ hundreds } 3 \text{ tens } 5 \text{ ones}
\end{align*}
\]
He added 3 hundreds 3 tens 5 ones  
This means 300 + 30 + 5 or 335 mangoes.

Dan always remembers to:

[Diagram: add ones then tens then hundreds]

Exercise C

Now do these. Work like Dan.

1. (a) 122 (b) 401 (c) 612 (d) 213 (e) 103 (f) 411
   +211 +302 +343 121 213 145
   _______ _______ _______ + 201 +102 +233

Add and Regroup

Dan and David played a game of marbles.
Dan won 🟢🟦🟦🟦🟦🟦 and David won 🟢🟦🟦🟦 Krishna

To find out how many marbles they had in all, this is what they did.

(i) They put the marbles together
   Dan’s marbles 🟢🟦 Krishna
   David’s marbles 🟢🟦

(ii) They counted the marbles.
    But how many tens and how many ones?

(iii) They regrouped like this:

(iv) They found out that it is really:
    1 ten + 3 ones
    = 10 + 3
    = 13 or thirteen

Exercise D

Do these additions:

(a) 6    (b) 5    (c) 8    (d) 4    (e) 9    (f) 7
    + 6    + 7    + 9    + 7    + 1    + 8
    _______ _______ _______ _______ _______ _______
Remember to trade or regroup 10 ones for 1 ten.

Let us add and regroup.

Look at this:

(a)  

<table>
<thead>
<tr>
<th>tens</th>
<th>ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>7</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>12</td>
</tr>
</tbody>
</table>

Add the ones. Think 12 ones.
Trade 10 ones for 1 ten.
Have 2 ones and 1 ten.
3 tens 2 ones
30 + 2 = 32

(b)  

Add the ones
1
2 5

Add the tens
1
2 5

12 ones
7

2 ones
7

3 2

You can use both patterns or just one. You must remember:

When you can, trade 10 ones for 1 ten

Exercise E

Now do these:

1. Trade 10 ones for 1 ten

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>35</td>
<td>46</td>
<td>15</td>
<td>39</td>
<td>14</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>14</td>
<td>65</td>
<td>12</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. (a) 325  (b) 134  (c) 173  (d) 109

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>325</td>
<td>236</td>
<td>134</td>
<td>308</td>
<td>109</td>
</tr>
<tr>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>16</td>
<td>16</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Calendar Time

Look at the calendar.
What day is today?
What day was yesterday?
What day will tomorrow be?

Name the school days in order.
Count as you name them. How many days are there in a school week?
How many days are there in one week?
Name the days that are not school days.

7 consecutive days starting with Sunday make one week.

Exercise F

1. Use a calendar to help you answer these.
   Jane and Mary are going to church. It is Sunday.
   Jane's birthday is Wednesday.
   In how many days time will it be Jane's birthday?

2. Which is the first school day of the week?

3. How many days are there between Tuesday and Thursday?

4. Copy and complete the days of the week.

   _______ Monday _______ Wednesday _______ _______ Saturday

Weeks and Months

Let us look at the calendar.
Count the days in each full week.
Group the days in the month to show weeks.
Count the number of full weeks.
How many are there?
Use your calendar.
Count the number of weeks in each month.
How many weeks make up a year?

A month has approximately 4 weeks.
A year has approximately 52 weeks.

**Months of the Year**

What year is this?
Which month is this?
Is this the first month of the year?
Use your calendar:
Count the months that have passed.
Count those that are yet to come.
How many months are there in a year? Name them in order.

There are 12 months in one year.

**Exercise G**

Use your calendar to do this exercise.

(a) Which is the first month of the year?
(b) Which is the last month of the year?
(c) It’s Christmas. Meenakshi is __ months away.
(d) Annie’s birthday is in March. It is now October.
   How many months must she wait for her next birthday?
Days of the Months

Exercise H

1. Copy and complete the table below. Use a calendar to help you. Learn the number of days in each month from your table.

<table>
<thead>
<tr>
<th>Months</th>
<th>Number of days this year</th>
</tr>
</thead>
<tbody>
<tr>
<td>February</td>
<td></td>
</tr>
<tr>
<td>April, _______, September, _________</td>
<td>30</td>
</tr>
<tr>
<td>_______ _______</td>
<td>31</td>
</tr>
</tbody>
</table>

2. (a) How many days are there in September?
(b) How many days has December?
(c) Which is the shortest month in the year?
(d) April is shorter than May by ___ days?

REVIEW

1. (a) 21 (b) 45 (c) 116 (d) 405 (e) 71
   + 35 + 32 + 132 + 132 + 22
   ______ ______ ______ ______ ______

2. (a) 154 (b) 256 (c) 433 (d) 29 (e) 512
   43 + 138 + 129 156 49
   + 2 ______ ______ + 203 + 132
   ______ ______

3. Look at the Calendar in your classroom and answer:
   (a) How many more months to complete this year?
   (b) How many days are there in October?
   (c) How many full weeks are there in August?
   (d) Use the calendar to find your birthday.
UNIT 7  SOLIDS

Families of Solids

Exercise A

1. Name the objects.

2. Name more objects for each kind of shape.

3. We can use these names to describe the shapes.

Making Solids

Exercise B

1. Do you know how to make your own die?

2. Let us try making a closed box.
   First get a box and a large piece of cardboard.
   Open the box carefully to make it flat.
   Place your opened box on the cardboard and trace around it.
   Remember to show the lines where you will have to fold.
   Cut out this shape, then fold and paste.
Exercise C

1. Look at the shapes. Make them.
   Which will make a cube? Fold to find out.

   (a)  
   (b)  
   (c)  

Surface and Edges

Exercise D

1. Look at the picture of a cube.
   Here we can see 3 faces.
   Point out these three faces to your friend.
   Another word you can use for faces is surfaces.

   Look again at the cube.
   The faces meet and form lines.
   Point out these lines to your friend.
   The line formed where two surfaces meet is called an edge.

2. Look at your model of a cube. How many surfaces are there?
   Colour each with a different colour.
   Count the edges.
   How many edges are there in the cube?
3. Do the same with other solids and complete a table like this:

<table>
<thead>
<tr>
<th>Solids</th>
<th>Names</th>
<th>Number of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cube</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Solids</th>
<th>Names</th>
<th>Number of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Flat and Curved Surfaces**

**Exercise E**

1. Try this. Place a matchbox in front of you. Now use your pencil and give it a little push. How does it move?

Now put a tin in front of you. Try to move it with your pencil. How does it move?

Turn the tin the other way. Push with your pencil again. Does it move the same way? Why? Try moving other solids by pushing with your pencil.

**Remember:**

Surfaces that slide are flat.
Surfaces that roll are curved.
2. Put these solids in their right places on the table below.

(a)  (b)  (c)  (d)  (e)

<table>
<thead>
<tr>
<th>Can roll only</th>
<th>Can slide only</th>
<th>Can roll and slide</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Try to build with shapes like these.
Which can pile up? Why?
Which can’t? Why?

(a)  (b)  (c)  (d)  (e)  (f)

REVIEW
1. Complete these:
   (a) A cube has ___ surfaces and ___ edges.
   (b) A cone has ___ surfaces and ___ edges.
   (c) Name two solids that have curved surfaces.
2. (a) I can roll and slide. What am I?
(b) I cannot slide but I can roll. What am I?
(c) I can slide only. What am I?

3. Look at the picture.
   Name each solid that makes up the picture.
UNIT 8 MEASUREMENT

Metre

Exercise A

1. Look at the picture. What is the boy doing? He is using steps to measure distance.
   Try measuring the distance from one end of your classroom to the other in the same way.
   Ask your friends to do the same.
   Record your measurements like this.
   I counted ___ steps.
   My friend counted ___ steps.
   My other friend counted ___ steps.
   Are the answers the same?
   What reason can you give for the difference?

2. Use your metre stick to measure the distance from one end of your classroom to the other.
   Let your friends use the metre stick to measure the same distance.
   Did you get the same answer? Can you tell why?

3. Measure other distances in the same way.
   Try to estimate the length before you measure.

<table>
<thead>
<tr>
<th>Distance</th>
<th>Estimate</th>
<th>Actual length</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) The cricket pitch</td>
<td>15 m</td>
<td>20 m</td>
</tr>
<tr>
<td>(b) Length of school</td>
<td>___ m</td>
<td>___ m</td>
</tr>
<tr>
<td>(c) Length of the bridge</td>
<td>___ m</td>
<td>___ m</td>
</tr>
<tr>
<td>(d) Length of the school yard</td>
<td>___ m</td>
<td>___ m</td>
</tr>
</tbody>
</table>
**Centimetre**

**Exercise B**

1. Look at the picture.

Peter is using his hand to measure across the back of a chair. How many hand spans do you think he will get? Can Peter use other body parts to measure? Name these parts.

2. Copy and complete:

<table>
<thead>
<tr>
<th>Things measured</th>
<th>What I used</th>
<th>Estimate</th>
<th>Actual Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) a desk</td>
<td>my hand</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>(b) blackboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) door</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) cupboard</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e) window</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Find out the length of your desk using your exercise book as a unit of measure.

We can call the length of the exercise book 1 unit. How many units long is your desk?

4. Match stick, your eraser, a paper clip, can also be used as units. Now use these to measure:
   (a) the length of your book.
   (b) across the back of a chair.
Look at the things you measured.
Is it easy to measure their lengths using the metre stick?
The metre stick is too long.
We need a unit of length which is small.
We need a unit of length which is the same for everyone.

The unit we will use is the centimetre.
Some short lengths are measured in centimetres.
Longer distances or lengths are measured in metres or kilometres.

Look at your centimetre ruler.

5. Draw lines using these lengths.
The first is done for you.
(a) 6 cm ____________________________ (d) 5 cm
(b) 4 cm ____________________________ (e) 12 cm
(c) 8 cm ____________________________ (f) 7 cm

6. Use your ruler to measure these objects.

(a) __________ cm
(b) __________ cm
(c) __________ cm
(d) __________ cm
Metre or Centimetre

Remember!
Some small lengths are measured in centimetres.
Longer lengths or distances are measured in metres or kilometres.

Exercise C
Measure these, taking care to choose the unit best suited for the length.
(a) The length of your pencil.
(b) The length of a matchbox.
(c) The length of your school.
(d) The length of the schoolgarden.
(e) The distance between two villages.

Metre and Centimetre

Exercise D
1. We are going to measure our blackboard again.
   This time we will use two units together.
   First use the metre stick.
   How many whole units did you get?
   For the part that is less than one metre, use your centimetre ruler.
   How many centimetres is this part?

   So our blackboard is ____ m and ____ cm long.

   We can use the metre and centimetre
to measure the lengths of some objects.

2. Measure the following objects. Record your answers in metres and centimetres.
   (a) The length of the class.
   (b) The length of two desks.
   (c) The height of your friend.
   (d) The length of the door.
   (e) The length of the cupboard.
   (f) Your own height.
REVIEWS

1. Measure this desk. Record its measurement in centimetres.

2. Draw lines to show:
   (a) 6 cm          (b) 12 cm          (c) 8 cm

3. Choose either metres or centimetres to measure the length of the following:
   (a) a new pencil   (b) your house    (c) a match stick (d) around the school yard

4. Measure these:
   (a) The length of a small envelope.
   (b) The length of three desks put together.
UNIT 9  SUBTRACTION AND SETS

Let us Subtract

Look at this

Read this.
A hen sat on 9 eggs.
If 5 of the eggs hatched, how many eggs
were not hatched?

Find the answer.
Say 9 take away 5 or 9 minus 5
Write 9 \( \begin{array}{c} 5 \\ \hline 4 \end{array} \)

Exercise A

1. Subtract these:
   (a) \( 9 - 5 = \boxed{4} \)  
   (b) \( 6 - 4 = \boxed{} \)  
   (c) \( 7 - 0 = \boxed{} \)  
   (d) \( 4 - 2 = \boxed{} \)  
   (e) \( 8 - 8 = \boxed{} \)  
   (f) \( 5 - 3 = \boxed{} \)  

2. Find the difference:
   (a) \( \begin{array}{c} 7 \\ \hline 4 \end{array} \)  
   (b) \( \begin{array}{c} 6 \\ \hline 6 \end{array} \)  
   (c) \( \begin{array}{c} 9 \\ \hline 0 \end{array} \)  
   (d) \( \begin{array}{c} 16 \\ \hline 6 \end{array} \)  
   (e) \( \begin{array}{c} 18 \\ \hline 12 \end{array} \)  
   (f) \( \begin{array}{c} 15 \\ \hline 10 \end{array} \)  

Use a place value chart to subtract:

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>111</td>
<td>111</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>111</td>
<td>111</td>
<td>=</td>
<td>3</td>
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</table>

Use a place value chart to subtract:

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<th>Hundreds</th>
<th>Tens</th>
<th>Ones</th>
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</thead>
<tbody>
<tr>
<td>11$ $</td>
<td>1$</td>
<td>1$</td>
</tr>
<tr>
<td>11$ $</td>
<td>1$</td>
<td>1$</td>
</tr>
<tr>
<td>11$ $</td>
<td>1$</td>
<td>1$</td>
</tr>
<tr>
<td>11$ $</td>
<td>1$</td>
<td>1$</td>
</tr>
</tbody>
</table>

Use a place value chart to subtract:

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>=</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

Use a place value chart to subtract:

<table>
<thead>
<tr>
<th>H</th>
<th>T</th>
<th>O</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>
3. (a) \[ \begin{array}{c} 56 \\ - 42 \\ \hline \end{array} \] (b) \[ \begin{array}{c} 27 \\ - 16 \\ \hline \end{array} \] (c) \[ \begin{array}{c} 80 \\ - 60 \\ \hline \end{array} \] (d) \[ \begin{array}{c} 43 \\ - 20 \\ \hline \end{array} \] (e) \[ \begin{array}{c} 75 \\ - 45 \\ \hline \end{array} \]

4. (a) \[ \begin{array}{c} 572 \\ - 141 \\ \hline \end{array} \] (b) \[ \begin{array}{c} 400 \\ - 300 \\ \hline \end{array} \] (c) \[ \begin{array}{c} 463 \\ - 132 \\ \hline \end{array} \] (d) \[ \begin{array}{c} 730 \\ - 210 \\ \hline \end{array} \] (e) \[ \begin{array}{c} 681 \\ - 140 \\ \hline \end{array} \]

Remember!
Subtract the ones first, the tens next and then the hundreds.

**Exercise B**

Solve these problems:
(a) From 84 take away 21.
(b) Take away 30 from 50.
(c) Subtract 145 from 275.
(d) Find the difference between 342 and 100.
(e) 460 - 254.
(f) Mother bought 12 bananas. She gave 7 of them to her children. How many bananas were left?
(g) A seller had 45 baskets to sell. She sold 23 of them. How many baskets were yet to be sold?
(h) 538 people attended a show. 236 were men. How many women attended the show?

**Subtract and Regroup**

**Exercise C**

1. (a) \[
\begin{array}{|c|c|}
\hline
\text{Tens} & \text{Ones} \\
\hline
\text{\includegraphics[width=2cm]{image}} & \text{\includegraphics[width=1cm]{image}} \\
\hline
\end{array}
\]

\[ \begin{array}{c} \text{3} \\ \text{3} \\ \hline \end{array} \]

\[ \begin{array}{c} \text{1} \\ \text{4} \\ \hline \end{array} \]

Subtract the ones.
Take away 4 ones from 3 ones.
I cannot.
Take 1 ten from 3 tens.
2 tens are left.
Exchange 1 ten for 10 ones.
You have 1 less tens and ten more ones

Now subtract the ones.
Subtract the tens.

We write the subtraction like this

\[
\begin{array}{c}
3 & 3 \\
- & 1 & 4 \\
\hline
1 & 9
\end{array}
\]

Remember!
10 ones make 1 ten.
Each time you take 1 ten, exchange it for 10 ones and add them to the ones.

2. More subtractions to work:

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
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<td>a</td>
<td>T</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>b</td>
<td>T</td>
<td>O</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>c</td>
<td>H</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>d</td>
<td>H</td>
<td>T</td>
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<td></td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td>e</td>
<td>H</td>
<td>T</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

<p>| | | |</p>
<table>
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</thead>
<tbody>
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<td></td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>

Sets

Exercise D

Sets Sunil made.

A. cards
   ball
   die

B. cup
   bucket

C. eraser
   crayons
1. Describe each set Sunil made on page 46. Why did he put the things together like this?

2. Count the number of things in each set. Name the things in each set.

3. Name some things that you would find in a set of footwear. Would a hat belong in that set? Why not?

   We often put things together for a reason. Such a grouping or collection is called a set. The things in a set are the members of the set.

4. Name some sets of things you know. Say what the members of each set have in common.

5. What do you expect to find in a set of:
   (a) fruit with one seed
   (b) months of the year
   (c) days of the week
   (d) persons in your family

   Each set has a name. The name helps you to identify the members of the set. The members help you to find the name for the set.

Exercise E

1. Name the members of each set.

   (a)  
   (b)  
   (c)  

2. List the members of each set:
   (a) Odd numbers to 21.  
   (b) School days of the week.  
   (c) Colours of the flag of Guyana.  
   (d) Months of the year with thirty days.

   How many members are there in each set?
3. Look at these sets:
   A.
   ![Image of set A with fruits and a book]
   B.
   ![Image of set B with fruits]

   Answer these:
   (a) To which set does 🍊 belong?
   (b) Is 📚 a member of set B?
   (c) 🍌 is a member of set B, is it also a member of set A? Why?

4. Name the sets in column A.
   Answer the questions in column B.

   A.  
   (i) 40
   10 70
   90
   (ii) 3
   11 7 5
   9 1

   B.  
   (a) Which of these belong to the set in column A (i) 30, 10, 40, 60, 70?
   (b) Which of these belong to the set in column A (ii) 90, 3, 10, 9, 11?

   Remember!
   1. A set is a collection of things.
   2. The things are called members.
   3. The members have something in common.
   4. Each set has a name.

REVIEW

1. Copy and work:
   (a) 8  (b) 16  (c) 40 (d) 482 (e) 600
   4  14   10  130  200

48
2.  (a) \[ \begin{array}{c} 25 \\ - 16 \end{array} \] (b) \[ \begin{array}{c} 80 \\ - 27 \end{array} \] (c) \[ \begin{array}{c} 96 \\ - 49 \end{array} \] (d) \[ \begin{array}{c} 502 \\ - 143 \end{array} \] (e) \[ \begin{array}{c} 327 \\ - 132 \end{array} \]

3. Solve these problems:
   (a) 225 pupils visited the zoo. 182 of them wore uniforms. How many pupils did not wear their uniforms?
   
   (b) There were 85 pencils in a box. 43 of them had erasers. How many pencils did not have erasers?

4. Match the sets with the names.

   - Fractions
     - \[ \frac{1}{2} \]
     - \[ \frac{1}{6} \]
     - \[ \frac{1}{4} \]
   - Ordinals
     - 31
     - 37
     - 39
     - 35
     - 33
   - Odd numbers
     - 30th
     - 13th
     - 6th
     - 25th
   - Shapes
     - \[ \frac{1}{8} \]
     - \[ \frac{1}{3} \]
     - \[ \frac{1}{12} \]
UNIT 10  CAPACITY, MASS AND TIME

Capacity

Let us measure.
You will need two containers like these:

Are they the same size? Which is bigger?

Exercise A

1. (a) Asif must use the cup to fill the bucket with water.
   How many cups of water will he need to fill the bucket?

   (b) Use a cup to fill your bucket. How many cups of water did you use?
   Have your friend use the same cup to empty the bucket?
   Count the number of cups of water he gets.
   Is it the same as the number you used to fill the bucket?

2. Work with your friend.
   Use other pairs of containers — big and small.
   Before measuring, take turns to estimate how many of the smaller containers will
   fill the bigger, then measure to find out.

3. Copy and complete:
   Estimate then measure and record.

<table>
<thead>
<tr>
<th>Containers</th>
<th>My estimate</th>
<th>Actual measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Bucket/Bowl</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>(b) Jar/Cup</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>(c) Cup/Spoon</td>
<td>_______</td>
<td>_______</td>
</tr>
<tr>
<td>(d) Tin/Cup</td>
<td>_______</td>
<td>_______</td>
</tr>
</tbody>
</table>
Mass

You will need a plastic bag of sand and small stones.
Find out which of the two is heavier/lighter.
Hold them – one in each hand.
Which is heavier? Which is lighter?

Exercise R

1. Use other objects e.g. pencil, pen, seeds, chalk box, fruits.
   Group them in twos e.g. a fruit and a seed.
   Which is heavier? Which is lighter?
   Hold them in your hand. Were you correct?

2. Copy and complete:
   Estimate then measure to find which is heavier.

<table>
<thead>
<tr>
<th>Objects</th>
<th>My estimate</th>
<th>Actual measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Book/pencil</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed/stone</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chalk/eraser</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

24-Hour Time Notation

Talk about the pictures.
Both clocks show 8 o’clock. What do you do at 8 o’clock?
One shows daytime. One shows nighttime.
Now let us find another way of telling time.
How many hours in a day? — 24 hours.
So, instead of counting 1 to 12 twice we count 1 to 24.
DARKNESS | SUNLIGHT | DARKNESS
--- | --- | ---
O’clock | 1 2 3 4 5 6 7 | 8 9 10 11 12 1 2 3 4 5 | 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
Hours | 1 2 3 4 5 6 7 | 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

The first hour is at 1 and the last is at 24.
Sunlight at 8 o’clock is 08:00 h. Darkness at 8 o’clock is 20:00 h.

Exercise C

1. Use these clocks below to write the time:

   | (a) | (b) | (c) | (d) |
   --- | --- | --- | --- |
   [Clock images]

   Darkness at _h  Sunlight at _h  Sunlight at _h  Darkness at _h

Reading 24-Hour Time Notation

2. Do these:

   | (a) | (b) | (c) | (d) |
   --- | --- | --- | --- |
   [Clock images]

   Sunlight at _h  Darkness at _h  Sunlight at _h  Darkness at _h

3. Draw the clocks below and show the time on each clock.

   | (a) | (b) | (c) | (d) |
   --- | --- | --- | --- |
   [Clock images]

   12:00 h  22:00 h  15:00 h  17:00 h

Remember! 1 day has 24 hours.
4. How many hours are there from 08:00 h to 12:00 h?

5. Father left home at 10:00 h and returned at 18:00 h. How long was he away from home?

**REVIEW**

1. Which holds more/less?
   - (a)  
   - (b)  
   - (c)  

2. Which is heavier/lighter?
   - (a)  
   - (b)  
   - (c)  

3. Copy and draw in the hands to show time as written below each clock:
   - (a) Darkness at 19:00 h
   - (b) Sunlight at 14:00 h
   - (c) Darkness at 05:00 h
LET US LOOK BACK

1. (a) 4 6  (b) 173  (c) 358  (d) 591
   + 2 3       + 204       + 426       + 238
   _______     _______     _______     _______

2. (a) Today is Tuesday. In two days time, End-of-Term Test will begin. On what day will the Test begin?
   (b) Mark’s birthday is on the 14th July. Lester’s birthday is three days later. On which date will Lester’s birthday be?
   (c) School was closed for three weeks’ vacation on Friday 9th December. What is the date of the Monday on which school will be re-opened?

3. (a) From 765 take 312  (b) Subtract 473 from 951  (c) 806 – 554
   (d) Use your ruler to draw these lines:
       (i) 3 cm  (ii) 11 cm  (iii) 7 cm  (iv) 15 cm
   (e) Sita’s photo frame is 30 cm long. Troy’s is 9 cm longer. How long is Troy’s photo frame?

4. Look at the set.

   2  3
   7  5  11
   13

   (a) How many members are there in the set?
   (b) Which member does not belong to the set of odd numbers?

5. Write these as 24-hour times:
   (a) 10 o’clock in the morning.
   (b) 4 o’clock in the morning.
   (c) 5 o’clock in the afternoon.
   (d) 7 o’clock in the evening.
   (e) Mother left for the market at 06:00 h and returned at 09:00 h. How long was she away from home?
6. (a) Which of these will make a box without a top?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?

(i)  

(ii)  

(iii)  

(b) Which of these shapes has 12 edges and 6 surfaces?
UNIT 11 NUMBERS to 999

Compare and Order

Let us count.
Copy and write the missing numbers.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<td></td>
</tr>
<tr>
<td>5</td>
<td>52</td>
<td>54</td>
<td>57</td>
<td>58</td>
<td>60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>61</td>
<td>63</td>
<td>65</td>
<td>68</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>72</td>
<td>74</td>
<td>76</td>
<td>79</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>81</td>
<td>83</td>
<td>85</td>
<td>87</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exercise A

1. Copy and complete the sequence.
   (a) 100, 101, 102, ..., ..., ...
   (b) 123, 125, 127, ..., ..., ...
   (c) 150, 154, 158, ..., ..., ...
   (d) 184, 194, 204, ..., ..., ...
   (e) 216, 218, 220, ..., ..., ...
   (f) 352, 362, 372, ..., ..., ...

2. There are four baskets with mangoes.
   The first one has 164, the second has 187, the third has 315 and the fourth has 286.
   How many mangoes are there in:
   (a) the 1st basket?
   (b) the 2nd basket?
   (c) the 3rd basket?
   (d) the 4th basket?

Now arrange the numbers from largest to smallest, then smallest to largest.

Look at Ann’s cards.
Ann’s cards show fifty-two.
Whose cards show the greater number?

Look at Shawn’s cards.
Shawn’s cards show fifty-three.
Shawn’s cards show the greater number.
When counting, 52 comes before 53.  \( 53 > 52 \)
52 is 1 less than 53 \( 52 < 53 \)

**Comparing Numbers**

<table>
<thead>
<tr>
<th>h</th>
<th>t</th>
<th>o</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>
1 hundred 4 tens 2 ones

<table>
<thead>
<tr>
<th>h</th>
<th>t</th>
<th>o</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
<td>4</td>
</tr>
</tbody>
</table>
1 hundred 6 tens 4 ones

Look at the digits from left to right.
The hundred in each is the same.
We have 4 tens and 6 tens.
4 tens \(<\) 6 tens
142 \(<\) 164

We can compare numbers in two ways:
1. We can compare from largest to smallest or smallest to largest; or
2. We can check the digits from the left.

**Exercise B**

1. Use \(<\), \(\geq\), or \(=\) to compare these.
   (a) 37 \(\square\) 46
   (b) 693 \(\square\) 639
   (c) 125 \(\square\) 152
   (d) 248 \(\square\) 234
   (e) 363 \(\square\) 363
   (f) 471 \(\square\) 491

2. Write these numbers from smallest to largest.
   (a) 32, 27, 45, 53, 60
   (b) 270, 254, 318, 307, 346
   (c) 105, 135, 544, 298, 426
   (d) 316, 283, 425, 177, 500
3. Write these numbers beginning from largest to smallest:
   (a) 163, 240, 176, 138, 273
   (b) 537, 292, 348, 422, 609
   (c) 420, 376, 582, 246, 154
   (d) 619, 734, 536, 873, 481

**Odd and Even Numbers**

Look at the set of ice cream cones.
We can put these cones into two equal rows like this.

![Ice cream cones](image)

Try to put these into two equal rows.
Use your small objects to help you.
(a) 8 match sticks
(b) 4 pebbles
(c) 10 bottle caps
(d) 2 books

When sets of objects can be put into two equal rows, the number of objects in the set is an even number.

Now put this set of marbles into two equal rows.

What did you find out?
Is 7 an even number?
Try making two equal rows using 3, 5, 7, 9, 1 objects.

When sets of objects cannot be put into two equal rows, the number of objects in the set is an odd number.

**Exercise C**

1. Count the number of objects in each set.
   Draw each set to show two equal rows.
   Write a number sentence below each to say if the number is odd or even.
   (a) ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣ ♣
   (b) ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧ ✧
2. Read the numbers.  
Copy them.  
Circle the even numbers and underline the odd numbers.  
(a) 4 7 9 10 13 21 24 29  
(b) 15 8 12 19 26 11 28 20 
3. Draw a number line like this.  
Circle the even numbers; put a triangle around the odd numbers. 

We notice that:  
Numbers which have 0, 2, 4, 6, 8 in the ones place are even numbers.  
Numbers which have 1, 3, 5, 7, 9 in the ones place are odd numbers.  

4. Make two columns like this.  
Say whether the numbers are odd or even.  
Write them in their correct places.  

<table>
<thead>
<tr>
<th>Even</th>
<th>Odd</th>
</tr>
</thead>
<tbody>
<tr>
<td>35, 14, 128, 83, 91, 57, 130, 187, 22, 109, 76, 145, 99, 62</td>
<td></td>
</tr>
</tbody>
</table>
Money

Dollars

Do you know these coins?

Exercise D

1. Write these amounts in words:

   Example: $75 — Seventy-five dollars:
   (a) $5       (b) $28       (c) $87
   (d) $60      (e) $54       (f) $96

Look at these.
These are the notes used in Guyana.
What is the colour of each note?
What other difference is there between them?
Equivalent Value of Money

Five 1-dollar coins equal 5 dollars.
Two 5-dollar coins equal 10 dollars.
Two 10-dollar coins equal 20 dollars.
Five 20-dollar note equal 100 dollars.

Exercise E

1. Use these symbols =, > or < to compare these values.
   (a) $1 $1 $1 □ □ $5
   (b) $5 $5 □ □ $10
   (c) $5 $20 □ □ $5 $5 $5
   (d) $100 □ □ $10 $20
   (e) $10 $20 □ □ $20 $10 $5
   (f) $20 $10 $10 □ □ $20 $10 $5

2. Use your notes to find how many:
   1-dollar coins make twenty-five dollars.
   5-dollar coins make twenty-five dollars.
   10-dollar coins make one hundred dollars.
   20-dollar coins make one hundred dollars.

REVIEW

1. Compare these using =, < or >.
   (a) 207 □ 207
   (b) 345 □ 305
   (c) 570 □ 570
   (d) 641 □ 614
   (e) 125 □ 105
   (f) 726 □ 762

2. Arrange from smallest to largest:
   (a) 121, 97, 185, 157, 114.
   (b) 205, 245, 215, 230, 250.
   (c) 317, 307, 347, 327, 367.
   (d) 431, 631, 331, 531, 931.
3. Copy and complete the table below:

<table>
<thead>
<tr>
<th>Amount</th>
<th>Number of Coins</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 dollar</td>
</tr>
<tr>
<td>$10</td>
<td></td>
</tr>
<tr>
<td>$20</td>
<td></td>
</tr>
<tr>
<td>$50</td>
<td></td>
</tr>
<tr>
<td>$100</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Amount</th>
<th>Number of Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>20 dollar</td>
</tr>
<tr>
<td>$100</td>
<td></td>
</tr>
<tr>
<td>$500</td>
<td></td>
</tr>
<tr>
<td>$700</td>
<td></td>
</tr>
<tr>
<td>$1000</td>
<td></td>
</tr>
</tbody>
</table>
UNIT 12 FRACTIONS

Thirds, Sixths, Twelfths

This sheet of paper shows two equal parts. Each part is called one half.

We write the fraction like this \( \frac{1}{2} \).

1. Fold your paper to show three equal parts. Name each part. Remember the numerator and denominator.

Write the fraction \( \frac{1}{3} \). We read one third.

2. Fold into three equal parts. Fold again. Open it. Count and name the equal parts.

We write \( \frac{1}{6} \). We read one sixth.

3. Fold to show sixths. Fold again. Open it. Count and name the equal parts.

One out of twelve equal parts \( \frac{1}{12} \). We read one twelfth.

Exercise A

1. Look at the three chocolate bars:
   Which bar shows thirds?
   Which shows sixths?
   Which shows twelfths?
   If I offer you a piece of any one bar, which would you take? Say why?

(a) \hspace{1cm} (b) \hspace{1cm} (c)
2. Is it true to say:

(a) \(\frac{1}{3}\) is shaded?

(b) \(\frac{1}{6}\) is shaded?

(c) \(\frac{1}{12}\) is shaded?

In each case say why.

3. Write a fraction to name:
   (a) the shaded part in each strip.
   (b) the unshaded part in each strip below.

   (i)

   (ii)

   (iii)

   (iv)

4. Copy and compete:

(a) \(\frac{\square}{6}\) is shaded?

(b) \(\frac{\square}{12}\) is shaded?

\(\square\) is unshaded?

\(\square\) is unshaded?
Thirds, Sixths, Twelfths of a Set

Use 6 small objects to make a set.
Share the objects equally between two of your friends.
How many does each child get?
Use a fraction to name each share.

Suppose you share the 6 objects, one to each friend.
How many friends will get one each?
What fraction of the set is this?

Exercise B

1. Copy and colour to show:
   
   (a) \[
   \frac{1}{3}
   \]
   (b) \[
   \frac{1}{6}
   \]
   (c) \[
   \frac{1}{12}
   \]

2. Write a fraction to tell what part of each set is shaded.
   
   (a)
   (b)
   (c)
   (d)

Comparing Thirds, Sixths, Twelfths

On the number line below, the parts are named in fractions.
A Fraction names a number.
Such a number is called a \textbf{fractional number}.

\[
\begin{array}{cccccccccc}
\text{0} & \text{1} & \text{2} & \text{3} & \text{4} & \text{5} & \text{6} & \text{6} \\
\text{\(\frac{0}{6}\)} & \text{\(\frac{1}{6}\)} & \text{\(\frac{2}{6}\)} & \text{\(\frac{3}{6}\)} & \text{\(\frac{4}{6}\)} & \text{\(\frac{5}{6}\)} & \text{\(\frac{6}{6}\)} & \text{\(\frac{6}{6}\)} \\
\end{array}
\]

From this number line we see that
\[
\frac{1}{6} < \frac{3}{6} \text{ and } \frac{3}{6} > \frac{1}{6}
\]
Use the line on page 65 to make other comparisons.  
Note that as we move to the right, the numbers are greater.  
e.g. 3 is to the right of 1  

so \[ 3 > 1 \]  

therefore \[ \frac{3}{6} > \frac{1}{6} \]  

Exercise C  
1. Copy and complete:  
The fraction chart will help you.  
Write =, < or >  

(a) \( \frac{4}{12} \) \[ \square \] \( \frac{2}{12} \)  
(b) \( \frac{5}{6} \) \[ \square \] \( \frac{4}{6} \)  
(c) \( \frac{2}{3} \) \[ \square \] \( \frac{2}{3} \)  

(d) \( \frac{6}{12} \) \[ \square \] \( \frac{6}{12} \)  
(e) \( \frac{3}{6} \) \[ \square \] \( \frac{6}{3} \)  
(f) \( \frac{3}{3} \) \[ \square \] \( \frac{2}{3} \)  

Add And Regroup Ones And Tens  
Look at the chart below.  
Count and group the numbers.  
Find the sum.  

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Tens" /></td>
<td><img src="image2" alt="Ones" /></td>
</tr>
</tbody>
</table>

When the ones are grouped,  
ten ones must be exchanged  
for one ten.  

Then the sum of 14 and 8 is \[ \square \]  
Read this number.
Let us use number strips to find the sum of 14 and 8.

Place the strip with the numerals in front of you.
Find your 14 strip.
Select an 8 strip.
Place it at the end of the first strip so that it starts at 15.
Check where it ends.
What then is the sum of 14 and 8?
Keep the strip with the numerals.
Exchange the 8 strip.
Take a 6 strip below 15.
Place the 6 strip at the end of the 6 strip.
Where does it end?
What is the sum of 14, 6 and 2?
Why did we use a 6 and a 2 strip?
Write the addition sentence.

We can group like this in tens also.
Read the numbers on the chart.
Add the ones.
Group the tens then add to find the sum.

When the tens are grouped,
10 tens must be exchanged
for one hundred.

The sum of 146 and 2 is
Exercise D

1. Use your objects and bundles.
   Find the sum of each.

   (a) Hundreds  Tens  Ones
       □□□□□  □□□□  □□□□

   (b) Hundreds  Tens  Ones
       □□□□□  □□□□  □□□□

   (c) Hundreds  Tens  Ones
       □□□□□  □□□□  □□□□

   (d) Hundreds  Tens  Ones
       □□□□□  □□□□  □□□□

2. Copy and complete.
   The first one is done for you

   add the ones               take the ten to the tens

   (a) 78 + 14 = 1 ten 2 ones

   (b) 33 + 17 = 40

   (c) 15 + 11 = 26

   (d) 8 + 10 = 18

   (c) 24

3. Add the ones     Add the tens     Add the hundreds

   (a) 173 + 151 = 1 1 hundred 2 tens 173

   (b) 173 + 151 = 24

   (c) 173 + 151 = 324
4. Try these.
Regroup ones and tens.

(a) 76
(b) 128
(c) 246
(d) 164

23
72
93
46

+ 7
+ 31
+ 5
+ 121

**REVIEW**

1. Copy and complete:

<table>
<thead>
<tr>
<th>Shape</th>
<th>Shaded Fraction</th>
<th>Unshaded Fraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(e)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2. Use >, <, or = to complete these:

(a) \(\frac{2}{6} \square \frac{4}{12}\)
(b) \(\frac{5}{6} \square \frac{2}{3}\)

(c) \(\frac{1}{3} \square \frac{5}{6}\)
(d) \(\frac{3}{12} \square \frac{4}{6}\)
3. Read these problems:
   Write to show how you found the answers.
   (a) A market vendor has 125 oranges, 47 pears and 21 limes.
   (b) Joe buys a drink for 75 dollars, a bun for 55 dollars and a cake for 120 dollars.
   (c) At a concert, there were 137 men, 182 women and 324 children. How many persons were at the concert?

4. Find the sum.

(a) \[ 57 + 24 \]
(b) \[ 36 + 48 \]
(c) \[ 67 + 19 \]
(d) \[ 73 + 18 \]

---

(e) \[ 163 + 142 + 34 \]
(f) \[ 250 + 186 + 412 \]
(g) \[ 172 + 254 + 130 \]
(h) \[ 185 + 161 + 122 \]
UNIT 13   SUBTRACTION

Subtract

\[
\begin{align*}
9 - 5 &= 4 \\
9 - 5 &= 4 \\
9 - 4 &= 5
\end{align*}
\]

Exercise A

1. Find the answers:
   (a) \( 9 - 2 = \)
   (b) \( 8 - 6 = \)
   (c) \( 5 - 2 = \)
   (d) \( 7 - 4 = \)
   (e) \( 9 - 7 = \)
   (f) \( 3 - 1 = \)

Subtract Tens

Exercise B

\[
\begin{align*}
6 \text{ tens} - 2 \text{ tens} &= 4 \text{ tens} \\
60 - 20 &= 40
\end{align*}
\]

1. Now work these:
   (a) \( 3 \text{ tens} - 1 \text{ ten} = \)
   (b) \( 6 \text{ tens} - 3 \text{ tens} = \)
   (c) \( 9 \text{ tens} - 4 \text{ tens} = \)
   (d) \( 7 \text{ tens} - 4 \text{ tens} = \)
   \[30 - 10 = \]
   \[60 - 30 = \]
   \[90 - 40 = \]
   \[70 - 40 = \]
2. (a) $17 - 3 = 14$
(b) $35 - 22 = 13$

Find these differences:
(c) $15 - 3 = 12$
(d) $28 - 8 = 20$
(e) $59 - 22 = 37$
(f) $46 - 23 = 23$

3. Pam had to complete these:
(a) $474 - 102 = 372$
(b) $563 - 140 = 423$

This is what she did:

\[
\begin{array}{c c c}
472 & 563 \\
-102 & -140 \\
\hline
370 & 423 \\
\end{array}
\]

Has Pam worked her subtractions correctly?
Follow Pam’s pattern.
Do these subtractions:
(c) $249 - 140 = 109$
(d) $395 - 75 = 320$
(e) $476 - 205 = 271$
(f) $546 - 23 = 523$

Point to remember when subtracting from, take away, minus or difference:
How many is less/more? How much is left?
How much more/less?
What must be added.
4. Solve these problems
   (a) Take 15 from 38.
   (b) What is the difference between 492 and 261?
   (c) What must be added to 16 to make 26?
   (d) How much more than 14 is 17?
   (e) How much less than 36 is 24?
   (f) By how much is 54 less than 86?

Subtract and Regroup

Study this.
Pam had 42 drink corks.
If 17 of them were Orange corks and the rest were Grape corks, how many Grape corks were there?
This is how Pam found out.

(i) \[ \begin{array}{c}
42 \\
- 17 \\
\hline
\end{array} \]
To subtract, Pam needs more ones.

She trades 1 ten. She has 1 less ten and 10 more ones. She subtracts.

\[ \begin{array}{c}
\text{2 tens } 5 \text{ ones} \\
= 25 \\
\end{array} \]

(ii) She tried another way.

<table>
<thead>
<tr>
<th>Tens</th>
<th>Ones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pam had</td>
<td>3 ( \overline{\text{4}} )</td>
</tr>
<tr>
<td>Oranges</td>
<td>1</td>
</tr>
<tr>
<td>Grapes</td>
<td>2</td>
</tr>
</tbody>
</table>

She needs more ones. She trades 1 ten. She has 1 less ten and 10 more ones. 2 tens and 5 ones = 25 Grapes
Exercise C

1. Try Pam’s pattern. Copy and work

   \[
   \begin{array}{cccccccc}
   (a) & 30 & (b) & 31 & (c) & 45 & (d) & 52 & (e) & 66 \\
   - & 24 & - & 12 & - & 28 & - & 32 & - & 40 \\
   \end{array}
   \]

   We subtract hundreds, tens and ones in the same way. Study these

   \[
   \begin{array}{cccccccc}
   \text{A} & H & T & O & \text{B} & H & T & O \\
   & 3 & 12 & & 3 & 17 & \\
   & 3 & 42 & \times & \times & \times & 9 \\
   - & 1 & 37 & - & 1 & 81 & \\
   \hline
   2 & 05 & 2 & 98 &
   \end{array}
   \]

   Remember to trade a hundred for ten.

2. Work these:

   \[
   \begin{array}{cccccccc}
   (a) & 326 & (b) & 238 & (c) & 309 & (d) & 702 \\
   - & 165 & - & 43 & - & 276 & - & 421 \\
   \end{array}
   \]

3. \[
   \begin{array}{cccccccc}
   (a) & 220 & (b) & 530 & (c) & 420 & (d) & 948 \\
   - & 185 & - & 174 & - & 37 & - & 338 \\
   \end{array}
   \]

Money

When working with money, write dollars under dollars and cents under cents.

4. \[
   \begin{array}{cccccccc}
   (a) & $350 & (b) & $680 & (c) & $721 & (d) & $875 \\
   - & $245 & - & $264 & - & $450 & - & $595 \\
   \end{array}
   \]

74
Mother bought these toys for Dan and David. Find the total cost of the two toys and change from $10.

$230  $230
Toy aeroplane

$423
Toy car

Total Cost $653

To find the total cost:

To find the change:

Toy aeroplane $230 I had $100
Toy car + $423 I spent + $65
Total Cost $653 My change $35

Exercise D

Find the total cost of these:

(a)

$215  $175  $325

(b)

$340

$150

(c) Pat has $50 in her piggy bank. She puts in $32 more. How much money has she in her piggy bank now?
(d) Carol spent $432, $110 and $264 to repair her cycle. How much did she spend in all?

(e) Cookies cost $160, patties $325 and buns $75. What is the total cost of the three snack items?

Buy these items. Pay with $500. Find your change.

First find the total cost:

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>crayons</td>
<td>$175</td>
</tr>
<tr>
<td>ruler</td>
<td>+ $125</td>
</tr>
<tr>
<td>total cost</td>
<td>$300</td>
</tr>
</tbody>
</table>

Now to find the change from $5, subtract the total cost:

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Had</td>
<td>$500</td>
</tr>
<tr>
<td>I Spent</td>
<td>− $300</td>
</tr>
<tr>
<td>My change</td>
<td>$200</td>
</tr>
</tbody>
</table>

Exercise E

Solve these money problems.

1.

Find the change from $500 after buying one of each fruit.

2. Lall got $200 after helping Mr. Singh. He bought a cone for $50 and a pine tart for $120. How much of this money was left?
3. Three sisters wanted to buy their mother a gift which costs $20. They had $6.15, $2.20 and $3. How much more money do they need to buy the gift?

**REVIEW**

1. Work these in your books.

   (a) \[ 39 \]  
   \[ \underline{- 3} \]  
   \[ \underline{36} \]  

   (b) \[ 326 \]  
   \[ \underline{- 104} \]  
   \[ \underline{222} \]  

   (c) \[ 280 \]  
   \[ \underline{- 100} \]  
   \[ \underline{180} \]  

   (d) \[ 84 \]  
   \[ \underline{- 36} \]  
   \[ \underline{48} \]  

2. (a) \[ \$ 495 \]  
   \[ \underline{- \$ 70} \]  
   \[ \underline{\$ 425} \]  

   (b) \[ \$ 500 \]  
   \[ \underline{- \$ 145} \]  
   \[ \underline{\$ 355} \]  

   (c) \[ \$ 405 \]  
   \[ \underline{- \$ 25} \]  
   \[ \underline{\$ 380} \]  

   (d) \[ \$ 775 \]  
   \[ \underline{- \$ 380} \]  

   \[ \underline{\$ 395} \]  

3. Find the change from $100 after buying limes for $40 and cherries for $30.

4. Each child in a family got pocket money from their father. Pat got $220, Marie got $145 and Janet got $329. How much money did father give to them?
UNIT 14  CAPACITY; ROMAN NUMERALS

Litres And Half Litres

Let us measure.
Use a bottle and an empty bucket like these.
Have another bucket the same size as the first one.
Fill the second bucket with water.

Look at the bottle.
How many filled bottles of water will fill the empty bucket?

Use the bottle and the water to fill the empty bucket.
Be sure to fill the bottle each time.
Count as you pour into the bucket.
How many times did you have to fill the bottle?

Now keep the bucket of water.
Use a smaller bottle.
How many times can you fill this bottle from the bucket of water?
Measure to find out.

Exercise A

1. Estimate the measure.

<table>
<thead>
<tr>
<th>Containers</th>
<th>What I used to measure</th>
<th>Estimate</th>
<th>Actual Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) bucket</td>
<td>bottle</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>(b) bowlglass</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) pot cup</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Compare your estimates and the measurements.

3. Use other such containers, estimate, then measure to verify. Compare the estimates and measurement each time.

Exercise B

1. Let us measure in litres and half litres. Here are two bottles of different sizes.
   One holds 1 litre, the other holds \( \frac{1}{2} \) litre.
   How many \( \frac{1}{2} \) litre bottles can we fill from the water in the 1 litre bottle? Measure to find out.
   Two \( \frac{1}{2} \) litres equal 1 litre.
   1 litre equals two \( \frac{1}{2} \) litres.

2. Use two other containers of the same size. Fill one with water. Use a 1 litre container to fill the other. How many litres does it hold? How many litres will the other container hold?

3. Use the 1 litre container and other containers. Measure to find out which holds:
   (a) 1 litre.
   (b) less than 1 litre.
   (c) more than 1 litre.
   (d) \( \frac{1}{2} \) litre.
   (e) less than \( \frac{1}{2} \) litre.
   (f) more than \( \frac{1}{2} \) litre.
4. Measure these in litres.
Copy and complete the table.

<table>
<thead>
<tr>
<th>Container</th>
<th>Litres</th>
<th>Litres</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) a water bottle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(b) a tin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(c) a bucket</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d) a pot</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Roman Numerals**

Here are two clock faces.

A. [Clock with Hindu-Arabic numerals]
B. [Clock with Roman numerals]

Look at the numerals on the clock faces.
Can you read them?
Which clock face is easier for you to read?
Why is this so?
Do you think the two clocks can tell the same time?
Each clock has a different group of numerals but they tell the same time.

Clock A shows Hindu-Arabic Numerals.
Clock B shows Roman Numerals.

**Exercise C**

1. Take two clock faces like ones above.
Match the numerals on the clock faces.
Build up a table to show the numerals that match.

<table>
<thead>
<tr>
<th>A</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>i</td>
<td>ii</td>
<td>iii</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>...</td>
</tr>
</tbody>
</table>
The Romans used their fingers to form their number system. Let us look at their pattern.

Roman numerals: i, ii, iii, iii, v, x
Hindu-Arabic Numerals: 1, 2, 3, 4, 5, 5 + 5 = 10

As time went by, the iii was changed to iv or one less than five. Now look at this.

Roman: vi, vii, viii, ix, x
Arabic: 6, 7, 8, 9, 10

2. Read the Roman Numerals
   - v = 5
   - x = 10
   - vi = 1 more than 5 - 6
   - iv = 1 less than 5 - 4
   - ix = 1 less than 10 - 9
   - xi = 1 more than 10 - 11

Exercise D

1. Write in Roman Numerals
   - two, four, six, eight, eleven

2. Write Hindu-Arabic Numerals for:
   - ix, v, iv, iii, xii, viii

3. Copy this clock face and write the missing numerals in Roman.
REVIEW

1. Do these:

   (a) How many $\frac{1}{2}$ litres are there in 1 litre?

   (b) A bucket has 8 litres of water.
       How many $\frac{1}{2}$ litre bottles can we fill from it?

   (c) Sarika used her $\frac{1}{2}$ litre measure to fill a tub. She counted 18 times.
       She says 18 half litres filled this tub.
       How many times will she count if she used her 1 litre measure?

2. Play this game with a friend.
   You will need

   (a) a clock face like this.

   (b) numeral cards for i to xii.

   To play: Take turns to name a numeral, select and place it correctly on the clock face.
   Score 2 points each time you are correct.
   When all numerals are in their correct places on the clock face, the player who has the highest score is the winner.
UNIT 15  FRACTIONS; TIME INTERVALS

Add Unit Fractions

This shape shows three equal parts.

1 part is dotted.
1 part is shaded black.
In all, 2 out of the 3 equal parts are shaded.

The black part and the dotted part together can be shown as an addition.

\[
\frac{1}{3} + \frac{1}{3} = \frac{2}{3}
\]

Let us look now at the frog as it hops along on the number line.

He hops to \( \frac{2}{12} \) then makes another hop of \( \frac{1}{12} \)

He is now at \( \frac{3}{12} \)

So \( \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \frac{3}{12} \)

If he goes back \( \frac{1}{12} \) then another \( \frac{1}{12} \). How many twelfths is this?
Exercise A

1. Look at each shape. Count the equal parts. Count the shaded parts. Complete the addition.

   (a) \[ \frac{1}{8} + \frac{1}{8} = \square \]

   (b) \[ \frac{1}{3} + \frac{1}{3} = \square \]

   (c) \[ \frac{1}{4} + \frac{1}{4} = \square \]

   (d) \[ \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \square \]

   (e) \[ \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \square \]

   (f) \[ \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \square \]

2. We can show addition of fractions on a number line. Use the line to solve this problem.

   \[ \scalebox{1.5}{\begin{tikzpicture}
   \draw[black, thick] (-0.5,0) -- (10.5,0);
   \foreach \x in {0,1,2,3,4,5,6,7,8,9,10}
   \draw[black, thin] (\x,0.1) -- (\x,-0.1) node[below] {\x/10};
   \end{tikzpicture}} \]

   (a) Molly likes to drink milk. She drinks \( \frac{1}{10} \) of a litre in the morning, \( \frac{1}{10} \) at lunch time and \( \frac{1}{10} \) at night. What fraction of a litre does she drink for the day?

   (b) Ron drinks \( \frac{1}{8} \) of a litre of milk in the morning, \( \frac{1}{8} \) at lunch time, in the afternoon \( \frac{1}{8} \) and \( \frac{1}{8} \) at night. What fraction of a litre of milk does he drink each day?
3. Find each sum:
   (a) $\frac{1}{6} + \frac{1}{6} = \square$
   (b) $\frac{1}{3} + \frac{1}{3} = \square$
   (c) $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \square$
   (d) $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \square$

**Exercise B**

Solve these problems.

Remember!
What the problem tells you.
What the question asks, then decide what to do to answer the question.

1. Look at the fudge in this pan.
   It is cut into twelfths.
   Ron ate $\frac{1}{12}$ of the fudge. Sue ate $\frac{1}{12}$ also.
   How much of the fudge did they eat altogether?

2. Mother gave $\frac{1}{4}$ of a cake to Anil and $\frac{1}{4}$ to his sister.
   What fraction of the cake did the two children get?

3. Rawle had a strip of cardboard.
   He coloured $\frac{1}{6}$ blue, $\frac{1}{6}$ red and $\frac{1}{6}$ yellow.
   What fraction of the strip did he colour?
Time Interval of Hours

Here are two clocks.
Read the time on each.
Read what happens at these times.

This clock shows the time when Ron’s mother goes to the market.

My mother starts to cook one hour after Ron's mother goes to the market.

This clock shows the time when Sue’s mother starts to cook.

My mother goes to the market one hour before Sue's mother starts to cook.

Exercise C

1. Use your clock faces to show:
   (a) the time school starts.
   (b) one hour before school starts.
   (c) one hour after school starts.

2. Read the times you show. Tell what you do at these times.
   Check with your friend.

3. Read the time shown on each clock face below.
   Set the hands on your clock face to show 1 hour before, then 1 hour after each.
4. Copy and complete:

<table>
<thead>
<tr>
<th>The time 1 hour earlier</th>
<th>The time now</th>
<th>The time 1 hour later</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a)</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>(b)</td>
<td>☑</td>
<td></td>
</tr>
<tr>
<td>(c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(d)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Use your clock faces, show the times and solve these problems.

(a) Sue went to the cinema. The show started at 10:00 hours and ended at 12:00 hours. How many hours did this show last?

(b) Father goes to work at 08:00 hours and returns at 17:00 hours. How many hours is he away from home each day?

(c) A bus leaves the park at 13:00 hours and arrives at the airport one hour later. At what time did it arrive there?

(d) It is now 07:00 hours. It is news time on the radio. The Breakfast Show started one hour ago. At what time did the Breakfast Show start?
LET US LOOK BACK

1. Write the missing number to complete these.
   (a) 93, 83, 73, ...., ....
   (b) 35, ...., ...., 44, 47, 50.

2. Place the correct sign =, < or > to complete these.
   (a) 103 □ 47
   (b) 603 □ 603
   (c) 217 □ 271
   (d) 89 □ 98

3. Write the numbers in order of size:
   (a) Start with the largest.
   (b) Start with the smallest.
   348, 104, 500, 279, 82, 222

4. Subtract
   (a) 7 tens – 2 tens = tens.
   (b) 70 – =

5. Do these:
   (a) \(5 7\) + \(1 2\)
   (b) \(4 3\) + \(2 5\)
   (c) \(3 0 5\) + \(1 3 7\)
   (d) \(3 4 8\) – \(1 2 5\)
   (e) \(5 .00\) – \(2 .16\)

6. Underline the odd numbers and draw a circle around the even ones:
   (a) 111
   (b) 53
   (c) 26
   (d) 147
   (e) 120
   (f) 478

7. Write Hindu-Arabic numerals for:
   (a) xx
   (b) viii
   (c) iii
   (d) ix

Write Roman numerals for:
   (a) 9
   (b) 4
   (c) 15
   (d) 6
8. What fraction of each is shaded?
   (i) 
   (ii)

9. (a) \( \frac{1}{8} + \frac{1}{8} = \) 

   (b) \( \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \)

   (c) \( \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \)

10. Write the total value of the coins in each row.

    (a) 

    (b) 

    (c) 

11. We left home for Timehri Airport at 08:15 hours.
    We arrived there 1 hour later. At what time did we arrive?

12. The teacher has 6 litres of pineapple juice to serve to the class. If each child gets \( \frac{1}{2} \) litre, how many children can be served with drinks?
UNIT 16  MULTIPLICATION

Tables For 2 and 3

Look at this.

<table>
<thead>
<tr>
<th>5 sets of 2</th>
<th>4 sets of 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>= 10</td>
<td>= 12</td>
</tr>
<tr>
<td>5 twos</td>
<td>4 threes</td>
</tr>
<tr>
<td>= 10</td>
<td>= 12</td>
</tr>
<tr>
<td>5 times 2</td>
<td>4 times 3</td>
</tr>
<tr>
<td>= 10</td>
<td>= 12</td>
</tr>
<tr>
<td>5 x 2</td>
<td>4 x 3</td>
</tr>
<tr>
<td>= 10</td>
<td>= 12</td>
</tr>
</tbody>
</table>

\[
\begin{array}{c}
5 \\
\times 2 \\
\hline
10
\end{array}
\quad
\begin{array}{c}
4 \\
\times 3 \\
\hline
12
\end{array}

Exercise A

1. Copy and complete:
   Mark drawings to help you.
   (a) 2 sets of 2 = □
   (b) 3 sets of 3 = □
   (c) 8 sets of 2 = □
   (d) 5 sets of 3 = □
   (e) 6 sets of 2 = □
   (f) 9 sets of 3 = □

2. Do these without drawings:
   (a) 3 twos = □
   (b) 7 threes = □
   (c) 4 threes = □
   (d) 5 threes = □
   (e) 5 twos = □
   (f) 4 threes = □

3. Write the missing numbers only:
   (a) 2 x 2 = □
   (b) 5 x 3 = □
   (c) 9 x 2 = □
   (d) 3 x □ = 9
   (e) 4 x 2 = □
   (f) 9 x 3 = □
   (g) 5 x 2 = □
   (h) □ x 3 = 24
Exercise B

1. Find these products:

   (a) \[ \begin{array}{c} 9 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (b) \[ \begin{array}{c} 5 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (c) \[ \begin{array}{c} 6 \\ \times \ 3 \end{array} \]
   \[ \hline \]

   (d) \[ \begin{array}{c} 7 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (e) \[ \begin{array}{c} 6 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (f) \[ \begin{array}{c} 5 \\ \times \ 3 \end{array} \]
   \[ \hline \]

   (g) \[ \begin{array}{c} 9 \\ \times \ 3 \end{array} \]
   \[ \hline \]

   (h) \[ \begin{array}{c} 7 \\ \times \ 3 \end{array} \]
   \[ \hline \]

The product of zero and any number is 0. The product of 1 and any other number is always the number itself.

2. Write these products:

   (a) \[ \begin{array}{c} 0 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (b) \[ \begin{array}{c} 1 \\ \times \ 2 \end{array} \]
   \[ \hline \]

   (c) \[ \begin{array}{c} 0 \\ \times \ 3 \end{array} \]
   \[ \hline \]

   (d) \[ \begin{array}{c} 1 \\ \times \ 3 \end{array} \]
   \[ \hline \]

Hints for solving problems.
(i) Look to see what the problem tells you.
(ii) Look for the question and estimate the answer.
(iii) Decide what to do (add, subtract, multiply, or divide).
(iv) Work to find the answer.
(v) Look over your work. Check each step.
Here are two boxes of crayons.
6 crayons are in each box.
How many crayons are there in the 2 boxes?

Let us solve this problem.

1 box has : 6 crayons
2 boxes have : 6 crayons x 2 boxes

\[
\frac{6}{2} = \frac{12}{2} = 6
\]

Exercise C

1. Solve these problems.
   (a) An ice tray holds 12 small cubes of ice.
       Lyn bought 2 trays of ice. How many cubes of ice did she get?

   (b) Father took 14 mangoes each for his 2 children.
       How many mangoes did he take home?

   (c) 3 children are making party invitations.
       If each child makes 20 invitations, how many will they make in all?

   (d) If each shelf has 81 books.
       How many books are there on the 3 shelves?

Tables For 4

Look at the sets.
Count the number of tables in each set.
Count the number of sets.
Find the number of tables in all.

3 sets of 4 = 12
3 fours = 12 x 4
3 times 4 = 12
3 x 4 = 12

92
Exercise D

1. Complete the number sentence below each.

□ sets of 4 = □

□ x □ = □

2. Copy and complete:
   (a) 3 x 4 = □
   (b) 9 fours = □
   (c) 2 fours = □
   (d) 5 fours = □
   (e) □ x 4 = 16

3. Multiply these:
   (a) 3 x 4 = □
   (b) 9 x 4 = □
   (c) 4 x 4 = □
   (d) 0 x 4 = □
   (e) 6 x 4 = □

4. (a) 5 x 4 = □
   (b) 2 x 4 = □
   (c) 1 x 4 = □
   (d) 7 x 4 = □
   (e) 8 x 4 = □

Let us multiply on the number line.

This number line shows tables for 3 and 4.
What table is shown with the top answer?
What table does the bottom answer show?
5. Copy these.
   Fill in the answers.
   Draw number lines to help you.
   (a) $4 \times 2 = \square$
       $2 \times 4 = \square$
   (b) $1 \times 4 = \square$
       $4 \times 1 = \square$
   (c) $4 \times 0 = \square$
       $0 \times 4 = \square$
   (d) $3 \times 4 = \square$
       $\square \times 3 = 12$
   (e) $4 \times 5 = \square$
       $5 \times 4 = \square$
   (f) $\square \times 6 = 24$
       $6 \times \square = \square$

Multiplying by 2, 3 and 4.

<table>
<thead>
<tr>
<th>24</th>
<th>41</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>48</td>
<td>123</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>110</th>
<th>201</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

Exercise E

1. Use the tables to help you find these products.
   (a) $21 \times 2$
   (b) $20 \times 2$
   (c) $30 \times 3$
   (d) $61 \times 3$

2. (a) $13 \times 2$
    (b) $33 \times 2$
    (c) $41 \times 3$
    (d) $22 \times 2$

To find the product multiply the ones, then multiply the tens, then multiply the hundreds.
3. (a) 102 \hspace{1cm} (b) 212 \hspace{1cm} (c) 101 \hspace{1cm} (d) 112
   \hspace{1cm} \times 2 \hspace{1cm} \times 3 \hspace{1cm} \times 4 \hspace{1cm} \times 3
   \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}}

4. (a) 110 \hspace{1cm} (b) 120 \hspace{1cm} (c) 231 \hspace{1cm} (d) 221
   \hspace{1cm} \times 4 \hspace{1cm} \times 3 \hspace{1cm} \times 2 \hspace{1cm} \times 3
   \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}}

5. Work these problems.
   Remember to use the “Hints for solving problems”
   (a) Farmer James planted 54 fruit trees in one row. How many fruit trees did he plant in 2 rows?
   (b) A tray holds 30 eggs. How many eggs will hold on 3 similar trays?
   (c) In a shop there are 4 shelves. If there are 12 bottles on each shelf, how many bottles are there on the 4 shelves together?

REVIEW

1. Draw this wheel. Multiply each numeral by the 2.
   Write your answers in the outer circle. One is done for you.

   Draw wheels for multiplication tables 3 and 4.

2. (a) 32 \hspace{1cm} (b) 80 \hspace{1cm} (c) 124 \hspace{1cm} (d) 212 \hspace{1cm} (e) 102
   \hspace{1cm} \times 4 \hspace{1cm} \times 2 \hspace{1cm} \times 3 \hspace{1cm} \times 3 \hspace{1cm} \times 4
   \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}} \hspace{1cm} \underline{\hspace{1cm}}
2.  (a) 132 \* 2  (b) 111 \* 4  (c) 100 \* 3  (d) 63 \* 3  (e) 52 \* 4

4. Solve these:
   (a) A shopkeeper has 4 cases of fruit drink bottles. Each case has 20 bottles. How many bottles are there in all the cases together?

   (b) 3 boys were picking coconuts. Each boy picked 13 coconuts. How many coconuts were picked in all?

   (c) A parent gave 2 boxes of books to the school. Each box contained 84 books. How many books were given to the school?
UNIT 17  MULTIPLICATION; FRACTIONS

Multiplication

Look at the set of bottles.

To find out how many bottles are on the shelf. This is what two children did.

Sunil

\[ 3 + 3 + 3 + 3 = 12 \]

Anil

\[ 4 \times 3 = 12 \]

Which way is shorter?

Let us multiply.

\[
\begin{array}{c|c|c|c}
& \text{Multiply the ones} & \text{Multiply the tens} \\
\hline
23 & 4 \times 3 \text{ ones} & 4 \times 2 \text{ tens} \\
\times 4 & 1 \text{ tens} 2 \text{ ones} & = 8 \text{ tens} \\
\hline
92 & 8 \text{ tens} + 1 \text{ ten} & = 9 \text{ tens}
\end{array}
\]

Here are two more examples:

(a) \[ 24 \times 3 \]

\[ 72 \]

(b) \[ 15 \times 4 \]

\[ 60 \]
Exercise A
Try these:

1. (a) 16 (b) 38 (c) 27 (d) 16
   \[ \times 2 \quad \times 2 \quad \times 3 \quad \times 4 \]

2. (a) 27 (b) 45 (c) 14 (d) 23
   \[ \times 2 \quad \times 2 \quad \times 3 \quad \times 4 \]

3. (a) 49 (b) 16 (c) 25 (d) 18
   \[ \times 2 \quad \times 3 \quad \times 3 \quad \times 4 \]

4. (a) 19 (b) 27 (c) 28 (d) 17
   \[ \times 2 \quad \times 3 \quad \times 3 \quad \times 4 \]

Here is another example.

\[
\begin{array}{ccc}
H & T & O \\
2 & 3 & 7 \\
\times & 4 & \\
\hline
9 & 4 & 8 \\
\end{array}
\quad
\begin{array}{ccc}
H & T & O \\
2 & 8 & \\
+ & 1 & 2 \\
\hline
1 & 4 & \\
+ & 8 & \\
\hline
9 & & \\
\end{array}
\]

Remember to regroup if you have 10 or more ones; 10 or more tens.
1. Now try these.
   (a) 167  (b) 178  (c) 146  (d) 186  (e) 199
   \[x \times 2 \quad x \times 3 \quad x \times 3 \quad x \times 2 \quad x \times 4\]
   2. (a) 198  (b) 268  (c) 228  (d) 355  (e) 275
   \[x \times 2 \quad x \times 3 \quad x \times 4 \quad x \times 2 \quad x \times 3\]

3. Make up and work some more multiplication on your own.
   Share what you have made up with your friends.
   Check each other’s work.

**Exercise C**

Solve these problems.

1. Our Library Corner has 3 shelves.
   Each shelf has 45 books.
   How many books are on the shelves in the Library Corner?

2. Cherries are sold at $15 a cup.
   If I buy 4 cups, how much money must I pay?

3. Mr. Singh, the milkman, buys 36 litres of milk from the milk plant each day.
   How many litres of milk does he buy in 4 days?

4. If a hospital uses 128 litres of milk each day, how many litres will the hospital need for 2 days?

5. Dad spends 130 minutes each week at games. How many minutes is this in 4 weeks?
Subtraction of Fractions
Fractions with Like Denominators

Exercise D

1. Let us subtract fractions

Take a strip of paper.
Fold it into 8 equal parts.
Remember, the edges must meet each time you fold.
Open the strip.
Draw lines on the folds.

Do you remember the name for each part?
Complete this:

2. (a) 1 part = \( \frac{1}{8} \)
   (b) 2 parts = \( \frac{2}{8} \)
   (c) 3 parts = \( \frac{3}{8} \)
   (d) 4 parts = \( \frac{4}{8} \)

3. (a) 5 parts = \( \frac{5}{8} \)
   (b) 6 parts = \( \frac{6}{8} \)
   (c) 7 parts = \( \frac{7}{8} \)
   (d) 8 parts = \( \frac{8}{8} \)

Cut along the lines to show the 8 equal parts.

3. Use the parts to solve the following problems.

   (a) \( \frac{5}{8} - \frac{2}{8} = \) \( \frac{3}{8} \)

100
(b) \( \frac{7}{8} - \frac{2}{8} = \) 

Look at this \( \frac{5}{6} - \frac{2}{6} = \) 

How many parts must you divide your strip to do this subtraction? Use the parts to solve the problem.

We can write it like this \( \frac{5}{6} - \frac{1}{6} = \frac{4}{6} \)

4. Try these:
   (a) \( \frac{5}{9} - \frac{4}{9} = \frac{1}{9} \)  
   (b) \( \frac{3}{4} - \frac{1}{4} = \) 
   (c) \( \frac{7}{8} - \frac{6}{8} = \) 
   (d) \( \frac{6}{7} - \frac{3}{7} = \) 
   (e) \( \frac{7}{10} - \frac{3}{10} = \) 
   (f) \( \frac{4}{5} - \frac{1}{5} = \)

Try to subtract on a number line.

![Number Line Diagram]

This line is divided into 7 equal parts.

\( \frac{5}{7} - \frac{3}{7} = \)

5. Draw number lines to show these:
   (a) \( \frac{5}{10} - \frac{1}{10} = \) 
   (b) \( \frac{6}{11} - \frac{4}{11} = \) 
   (c) \( \frac{12}{13} - \frac{4}{13} = \) 
   (d) \( \frac{9}{14} - \frac{3}{14} = \) 
   (e) \( \frac{8}{15} - \frac{7}{15} = \) 
   (f) \( \frac{9}{12} - \frac{3}{12} = \)
REVIEW

1. (a) \[ \frac{18}{2} \]  (b) \[ \frac{26}{3} \]  (c) \[ \frac{236}{4} \]  (d) \[ \frac{225}{4} \]

2. Use a number line to complete these:

(a) \[ \frac{7}{8} - \frac{3}{8} = \] 

(b) \[ \frac{5}{12} - \frac{1}{12} = \] 

3. Write the number sentence for each.

(a) 

(b) 

102
UNIT 18 MASS

Kilogram and Half Kilogram

This bag has 1 kg of sand.
Try to estimate its mass with your hands.

Now get another bag of sand with the same mass.
Use your balance to check the mass of each.

Exercise A

1. Estimate and measure which weighs 1 kg.

(a)  (b)  (c)

2. Now do these.
Use your balance to make two equal parcels of sand from 1 kg.

Each bag has \( \frac{1}{2} \) kg of sand. Two halves make 1 whole.
Get your 1 kg measure of sand.
Here are pictures of some objects you can find.

(a)  (b)  (c)

Estimate the mass of each object.
Say whether it is less than, more than or equal to 1 kg.
Use your 1 kg measure and your balance to find out.
Record your findings.
Remember!
1 kg = two \( \frac{1}{2} \) kgs

Now use your \( \frac{1}{2} \) kg measure and your balance to find:

(a) \( \frac{1}{2} \) kg of soil  
(b) \( \frac{1}{2} \) kg of sand  
(c) \( \frac{1}{2} \) kg of pebbles

Use other objects around you. See how many small objects weigh \( \frac{1}{2} \) kg. Record your findings.

The Half Kilogram

Here are pictures of some objects you may use.

(a)  
(b)  
(c)  

Estimate the mass of each.

Say if each is greater than/less than or equal to \( \frac{1}{2} \) kg.

Use your balance and your \( \frac{1}{2} \) kg measure to find out.

Record your findings.

Look for some object around you, e.g. a ball, a book.
Group your objects according to their mass.
Record on a table like this.

<table>
<thead>
<tr>
<th>( \frac{1}{2} ) kg</th>
<th>&gt; ( \frac{1}{2} ) kg</th>
<th>&lt; ( \frac{1}{2} ) kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Comparing Mass

Use your balance to weigh 1 kg of sand.
Here are pictures of some objects.

(a)  
(b)  
(c)  

Find objects such as these.
Estimate their mass.
Say if they are greater than/less than or equal to 1 kg.
Use your balance and your 1 kg measure to find out.
Record your findings.

REVIEW

1. You will need 1 kg and $\frac{1}{2}$ kg measures.
   Choose objects around you such as:
   
   (a)  
   (b)  
   (c)  

   Use your 1 kg measure to find their mass.
   Record as greater/less than, or equal to 1 kg.

2. Choose objects around you with less mass than them.
   
   (a)  
   (b)  
   (c)  

   Use your $\frac{1}{2}$ kg measure to find their mass as greater than/less than, or equal to $\frac{1}{2}$ kg.
UNIT 19    PLANE SHAPES; SETS

Triangles

What are those things?

They are shapes called triangles.

Look at the triangles.
They have names – BIG and JIG
BI is one side.
IG is one side.
What is the other side?
How many sides are there in triangle BIG?

Exercise A

1. Look at triangle BIG again.
   Each side meets another side at a point.
   The point where the sides meet is a vertex.
   B is a vertex.
   I is also a vertex.
   Name the other vertex for triangle BIG.
   How many corners are there on triangle BIG?

   A triangle has 3 sides and 3 vertices.

2. Look at triangle JIG.
   (a) Name all its sides.
   (b) Name all its vertices.
**Rectangle**

1. Look at this shape.
   This is a rectangle.
   Look at rectangle JUMP.
   The sides are JU, UM, MP and PJ.
   Name the vertices.
   (a) How many sides are there in a rectangle?
   (b) How many vertices are there in a rectangle?

2. Look at rectangle JUMP again.
   Find sides UM and PJ. They are opposite sides.
   Name two more opposite sides on rectangle JUMP.
   What do you notice about the opposite sides of a rectangle?

   **A Rectangle has 4 sides and 4 vertices.**
   The opposite sides of a rectangle are equal.

**Exercise B**

1. Draw a rectangle WALK.
   (a) Name all its sides.
   (b) Name all its vertices.
   (c) Name the four opposite sides.

**Square**

We call this shape a square.
Look at square LAMB
What do you notice about the length of the sides?
How many sides does a square have?
How many corners does a square have?

A square has 4 equal sides and 4 vertices.

2. Draw a square RAIN.
   (a) Name all its sides.                (b) Name all its vertices.

Circle

We call this shape a circle.
Are there sides on a circle?
Are there vertices?
A circle has one curved side.
It has no vertex.

3. Copy and complete:

<table>
<thead>
<tr>
<th>Shape</th>
<th>Number of</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Name</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Equal and Equivalent Sets

Look at the sets:
1. Are the members of Set A the same as the members of Set B?
2. Is the number of members of Set A equal to the number of members of Set B?
3. Is any member of either set left over?

Two sets whose members match one-to-one, Are called equivalent sets. Equivalent sets have the same number of members.

Look at the sets:

1. Are the members in Set A different from the members in Set B?
2. Are the number of members in Set A the same as the number of members in Set B?

Two sets whose members are the same or identical are equal sets. Equal sets also have the same number of members.
Exercise C

1. Which pairs of sets are equivalent? Which are equal?

(a) [Apple] [Ball] (b) [5, 6] [5, 7]
[7, 9] [6, 9]

(c) [△ △ △] [△ △ △] (d) [Carrots] [Carrots]

(e) [Tree] [Bottle] [Mug] (f) [Stars] [Stars]

2. Make these pairs of sets equal.

(a) [★ ★ ★] [★ ★ ★] (b) [★] [★]

(c) [a, b, c] [c] (d) [Square] [Triangle, Hexagon, Square]

(e) [△] [□] (f) [Butterflies] [Butterflies]
UNIT 20  GRAPHS; MASS

Look at the pictures.
Name the animals.

Make them your pets.
Draw them on a grid like the one below.

<table>
<thead>
<tr>
<th></th>
<th>dog</th>
<th>cat</th>
<th>parrot</th>
<th>rabbit</th>
<th>monkey</th>
</tr>
</thead>
<tbody>
<tr>
<td>12</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Exercise A

1. Now use the pictograph. Answer these questions:
   (a) How many children like:
       (i) dogs  (ii) rabbits  (iii) monkeys  (iv) cats  (v) parrots
   (b) How many children like dogs and monkeys?
   (c) How many children are there in all?
   (d) How many animals are in the picture?
   (e) Which is the favourite pet of the class? How can you tell?
   (f) Which is the least favoured pet? How can you tell?
2. The children in Grade 1 made a pictograph to show the number of children who play certain outdoor games.

Look at the pictograph. Answer the questions.

<table>
<thead>
<tr>
<th>Games We Play</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cricket</td>
</tr>
<tr>
<td>Rounders</td>
</tr>
<tr>
<td>Skipping</td>
</tr>
<tr>
<td>Marbles</td>
</tr>
</tbody>
</table>

(a) How many outdoor games are played?
(b) What does each picture represent?
(c) How many children play:
   (i) cricket? (ii) rounders? (iii) skipping? (iv) marbles?
(d) Which game do most children play? How can you tell?

3. Look at your pictograph again, make up 5 questions about it. Ask your friend to answer them.

Let us show ‘Games We Play’ on another graph. Use two different colours of cardboard squares to show boys and girls. Let us say boys use blue; girls use green. Select your card and your game. Paste your square on the grid to show the game you like to play.
Read the graph. Take turns to ask and answer questions about it.

In this block graph, one square means one child who likes the game.

**Exercise B**

Work with the children in your class.

1. Find out their favourite drink from these:
   Orange, Grapefruit, Banana, Guava.

   Make a pictograph and a block graph to show your findings.
   You may use a grid like this.

2. Find out how your friends get to school — by car, bus, bicycle, walking.
   Make a block graph and a pictograph to show your findings.
Kilogram and Half Kilogram

Exercise C

1. Use a balance to find out which is:

<table>
<thead>
<tr>
<th>Heavier Than</th>
<th>Lighter Than</th>
<th>or</th>
<th>Equal To</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 kg</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 g</td>
<td>500 g</td>
<td></td>
<td></td>
</tr>
<tr>
<td>500 g</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 kilogram is equal to two half kilograms.
1/2 kilogram is equal to 500 grammes.
2. Copy and put $>$, $<$ or $=$ in the circle.

(a) \( \begin{array}{ccc} & 1 \text{ kg} & 1 \text{ kg} & 1 \text{ kg} \\ & \text{circle} & & \end{array} \) \( \begin{array}{cc} & 1 \text{ kg} & 1 \text{ kg} \\ \end{array} \) 

(b) \( \begin{array}{ccc} & 1 \text{ kg} & \frac{1}{2} \text{ kg} \\ & \text{circle} & \end{array} \) \( \begin{array}{cc} & 1 \text{ kg} & 1 \text{ kg} \\ \end{array} \) 

(c) \( \begin{array}{ccc} & 550 \text{ g} & 550 \text{ g} & 1 \text{ kg} \\ & \text{circle} & \end{array} \) \( \begin{array}{ccc} & 1 \text{ kg} & 1 \text{ kg} & \frac{1}{2} \text{ kg} \\ \end{array} \) 

(d) \( \begin{array}{ccc} & 550 \text{ g} & 550 \text{ g} & \frac{1}{2} \text{ kg} \\ & \text{circle} & \end{array} \) \( \begin{array}{cc} & 1 \text{ kg} & 1 \text{ kg} \\ \end{array} \)
REVIEW

The pictograph below represents information on the causes of fires in houses over a month.
One picture like this 🔥 represents one fire.

<table>
<thead>
<tr>
<th>Electricity</th>
<th>🔥 🔥</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oil stoves</td>
<td>🔥 🔥</td>
</tr>
<tr>
<td>Children playing with matches</td>
<td>🔥 🔥 🔥 🔥</td>
</tr>
<tr>
<td>Unknown</td>
<td>🔥 🔥 🔥</td>
</tr>
</tbody>
</table>

1. Study the graph then answer these questions.
   (a) How many fires were caused by oil stoves?
   (b) How many more fires were caused by oil stoves than by electricity
   (c) What was the total number of fires in the month?

2. Use the information on the pictograph and make a block graph.

3. Copy and complete:
   Use >, < or =

   (a) 1 kg 1 kg ○ 1 kg
   (b) 550 g 550 g 1 kg
       550 g ½ kg ½ kg
LET US LOOK BACK

1. Multiply each number by 2, 3 and 4.
   (a) 501  (b) 920  (c) 105  (d) 422
   (e) 110  (f) 224  (g) 29  (h) 310

2. Use number lines to work these:
   (a) \(\frac{5}{8} - \frac{1}{8} = \) \(\square\)  (b) \(\frac{2}{3} - \frac{1}{3} = \) \(\square\)
   (c) \(\frac{7}{12} - \frac{6}{12} = \) \(\square\)  (d) \(\frac{2}{6} - \frac{3}{6} = \) \(\square\)
   (e) \(\frac{3}{5} - \frac{1}{5} = \) \(\square\)  (f) \(\frac{2}{5} - \frac{1}{5} + \frac{1}{5} = \) \(\square\)
   (g) \(\frac{4}{6} - \frac{3}{6} = \) \(\square\)  (h) \(\frac{1}{8} - \frac{2}{8} + \frac{3}{8} = \) \(\square\)

3. (a) Copy and complete:

<table>
<thead>
<tr>
<th>Object</th>
<th>More than (\frac{1}{2}) kg</th>
<th>Less than (\frac{1}{2}) kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>A lunch kit</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A box of chalk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A textbook</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(b) Make up a table to show the mass of the objects above.
Use 1 kg instead of \(\frac{1}{2}\) kg
4. Match these:
   Equal sets
   (a) \[ \begin{array}{ccc} 1 & 5 & 9 \\ 3 & 7 \end{array} \]
   (b) \[ \begin{array}{ccc} 1 & 5 & 9 \\ 3 & 7 \end{array} \]
   (c) \[ \begin{array}{ccc} \text{apple} & \text{apple} \end{array} \]

5. Equivalent sets
   (a) \[ \begin{array}{ccc} \text{apple} & \text{apple} & \text{apple} \end{array} \]
   (b) \[ \begin{array}{ccc} \text{apple} & \text{apple} & \text{apple} \end{array} \]
   (c) \[ \begin{array}{ccc} 2 & 6 & 0 \\ 4 & 8 \end{array} \]
   (d) \[ \begin{array}{ccc} \text{square} & \text{triangle} & \text{circle} \end{array} \]

6. The children in a Grade 3 class were asked to choose a fruit from this set.
   \[ \begin{array}{ccc} \text{orange} & \text{banana} & \text{orange} \end{array} \]
The graph shows their choices.

(a) Which fruit was chosen by:
   (i) most children?  
   (ii) the least number of children?

(b) Which choices show:
   (i) odd numbers?  
   (ii) even numbers?

(c) Which choices show:
   (i) less than pineapples?  
   (ii) half as many as pineapples?
UNIT 21  MULTIPLICATION

Multiplication By 5

Look at the pictures.
There are 4 hands with 5 fingers on each.
There are 20 fingers in all.

The 4 groups of 5 fingers give us 20.
We write it like this: 4 \times 5 = 20

Here we have 3 strings of 5 beads each.
We have 15 beads in all.
3 groups of 5 give us 15.
We write it like this: 3 \times 5 = 15

Exercise A

1. Complete these:
   (a) \[\begin{array}{c}
   \spadesuit \spadesuit \\
   \spadesuit \spadesuit \\
   \spadesuit \spadesuit \\
   \end{array}\] \[\times 5 = \Box\]
   (b) \[\begin{array}{c}
   \bullet \bullet \\
   \bullet \bullet \\
   \bullet \bullet \\
   \bullet \bullet \\
   \bullet \bullet \\
   \end{array}\] \[\times 5 = \Box\]

2. Draw pictures to show these, then complete the number sentences.
   (a) \[9 \times 5 = \Box\]
   (b) \[8 \times 5 = \Box\]
   (c) \[6 \times 5 = \Box\]
   (d) \[7 \times 5 = \Box\]
3. Try these:

(a) $9 \times 5 = \square$  
(b) $8 \times 5 = \square$  
(c) $6 \times 5 = \square$

(d) $5 \times 5 = \square$  
(e) $6 \times 5 = \square$  
(f) $7 \times 5 = \square$

(g) $8 \times 5 = \square$  
(h) $9 \times 5 = \square$  
(i) $1 \times 5 = \square$

Look at this picture, we have 5 boxes with one ball in each.
We have 5 balls in all.

![Picture of 5 boxes with one ball each]

We have 5 groups of one  
$5 \times 1 = 5$

Now we have the five boxes with nothing inside.

![Picture of 5 empty boxes]

We have no balls  
$5 \times 0 = 0$

When we multiply a number by one the answer is the same.
$15 \times 1 = 15$,  $25 \times 1 = 25$.

When we multiply a number by 0 the answer is 0.
$15 \times 0 = 0$,  $25 \times 0 = 0$

![Picture of 3 groups of 5 cards]

3 groups of 5 is 15

$3 \times 5 = 15$
5 groups of 3 is 15
\[ 5 \times 3 = 15 \]

4 groups of 5 is 20
\[ 4 \times 5 = 20 \]

4 groups of 4 is 20
\[ 5 \times 4 = 20 \]

When the two numbers that are multiplied exchange places, the answer remains the same.

\[ 3 \times 5 = 15 \quad 4 \times 5 = 20 \]
\[ 5 \times 3 = 15 \quad 5 \times 4 = 20 \]

Exercise B

1. Do these:
   (a) \[ 9 \times 5 = \_ \_ \_ \_
   \]
   \[ 5 \times 3 = \_ \_ \_ \_
   \]
   \[ 5 \times 0 = \_ \_ \_ \_
   \]
   \[ 7 \times 5 = \_ \_ \_ \_
   \]

   (b) \[ 8 \times 5 = \_ \_ \_ \_
   \]
   \[ 5 \times 0 = \_ \_ \_ \_
   \]

   (c) \[ 6 \times 5 = \_ \_ \_ \_
   \]
   \[ 7 \times 5 = \_ \_ \_ \_
   \]

   (d) \[ 2 \times 5 = \_ \_ \_ \_
   \]
   \[ 5 \times 2 = \_ \_ \_ \_
   \]

   (e) \[ 6 \times 5 = \_ \_ \_ \_
   \]
   \[ 5 \times 6 = \_ \_ \_ \_
   \]

   (f) \[ 6 \times 8 = \_ \_ \_ \_
   \]
   \[ 8 \times 5 = \_ \_ \_ \_
   \]
2. (a) 43 \( \times 2 \)  (b) 13 \( \times 3 \)  (c) 12 \( \times 4 \)  (d) 11 \( \times 5 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 

(e) 133 \( \times 2 \)  (f) 213 \( \times 3 \)  (g) 221 \( \times 4 \)  (h) 110 \( \times 5 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 

Exercise C

1. Multiply

(a) 136 \( \times 2 \)  (b) 217 \( \times 4 \)  (c) 327 \( \times 2 \)  (d) 218 \( \times 4 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 

(e) 128 \( \times 3 \)  (f) 113 \( \times 5 \)  (g) 216 \( \times 3 \)  (h) 117 \( \times 5 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 

2. (a) 269 \( \times 2 \)  (b) 234 \( \times 4 \)  (c) 187 \( \times 2 \)  (d) 136 \( \times 4 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 

(e) 345 \( \times 3 \)  (f) 135 \( \times 3 \)  (g) 189 \( \times 4 \)  (h) 164 \( \times 5 \)  
   \[ \quad \quad \quad \quad \] 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \) 
   \( \quad \quad \quad \quad \)
Let us do some problem solving.

A box has 25 marbles.
How many marbles will 5 such boxes contain?

Finding the answer:
1 box has 25 marbles.
5 boxes will have $25 \times 5$ marbles.

$x \quad 5$

125 marbles

Exercise D

1. A pack of cards has 52. How many cards will there be in 4 packs?

2. A coconut estate has 165 plants in each row.
How many plants will there be in 5 rows?

3. A tank holds 159 litres of water. How many litres of water will 3 tanks hold?

4. A vendor has 4 boxes of oranges. Each box contains 235 oranges. How many oranges does the vendor have?

5. A sack of rice weighs 130 kg. How many kg will 5 sacks of rice weigh?
REVIEW

1. Multiply and give the product.
   (a) \[ \begin{array}{c}
   136 \\
   \times 4
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]
   (b) \[ \begin{array}{c}
   215 \\
   \times 5
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]
   (c) \[ \begin{array}{c}
   324 \\
   \times 3
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]
   (d) \[ \begin{array}{c}
   198 \\
   \times 3
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]
   (e) \[ \begin{array}{c}
   197 \\
   \times 2
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]
   (f) \[ \begin{array}{c}
   305 \\
   \times 4
   \end{array} \]
   \[ \ \ \ \ \ \ \ \ \]

2. A box of potatoes has a mass of 125 kg. What will be the mass of 5 such boxes?

3. A farmer planted 125 plants on one garden bed. How many plants does he need for 4 such beds?
UNIT 22  PERIMETER

Look at the duck in the pond.
Follow the arrows with your pencil.
Go around until you get back to the starting point.
What is the distance around the pond? Can you tell?

Let us find out.

Use a piece of string to go around the edge of the pond.
Measure the string on a cm ruler.
What is the distance around the pond?
What distance did the duck swim?

Exercise A

1. Use string and cm ruler to measure the distance around the edges of your book, desk, classroom floor, door, chalk board.
   Be sure to mark the starting point then go all around to the same point.
   Record the measurement around each, in cm.
2. Estimate the distance around each of these.

(a)  
(b)  
(c)  

Use your string and cm rulers to check your estimates. Record estimates and actual measurement. How close were your estimates?

The distance around any plane shape is the perimeter of the shape.

3. Find the perimeter of:

(a) Your handprint; your friend’s handprint.

(b) Your footprint; your friend’s footprint.

(c) A leaf of your choice.

(d) The top of your teacher’s table.

(e) The top of your desk.
Exercise B

Try these:
1. Use 4 pieces of string each 25 cm long. Knot the end of each. Punch 4 tiny hole on a sheet of paper or cardboard. Now pass the string through from the back.

Use each string to make one of these shapes:
(a) a square
(b) a triangle with one side 5 cm
(c) a circle
(d) a rectangle

Record the perimeter of each shape.

2. Use the geoboard and rubber bands to make different shapes; for each shape you make, use the string and cm ruler to measure the perimeter. Record the perimeter to the nearest centimetre.
REVIEW

1. Find the perimeter of these shapes.
   Use your string and your centimetre ruler.

2. Work with your friends.
   Find the perimeter of each person's right hand print and right footprint.
UNIT 23  TIME — THE CALENDAR

DAYS

Here is a calendar page.
It shows the days and dates of one month.

<table>
<thead>
<tr>
<th>APRIL</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUN</td>
</tr>
<tr>
<td>-----</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>6</td>
</tr>
<tr>
<td>13</td>
</tr>
<tr>
<td>20</td>
</tr>
<tr>
<td>27</td>
</tr>
</tbody>
</table>

Remember!
7 days make 1 week

Name the days.
Count the number of Saturdays, Mondays, Wednesdays, Fridays, Tuesdays, Sundays
and Thursdays in the month.
Read the date of the first day of the month.
Read the date of the last day of the month.
Tell the number of days in this month.
Tell the number of days from the 5th to the 8th day of the month.

Exercise A

Use a calendar to help you answer these:
1. How many days are there from:
   (a) Tuesday to Friday?
   (b) Sunday to Saturday?
   (c) Wednesday to Friday?
   (d) Monday to Saturday?
   (e) Monday to Friday?
   (f) Monday to Sunday?

2. If Monday is the first school day of the week, name the:
   (a) third day
   (b) second day
   (c) fifth day

130
3. Solve these problems.
   (a) Sue’s birthday is on the 12th June and Paul’s birthday is on the 18th June. How many days after Sue’s is Paul’s birthday?

   (b) Fizool goes to church on Fridays. Mandy goes to church two days later. On what day does Mandy go to church?

4. Copy and complete these.
   (a) The day after Monday is ____________.
   (b) The day before Sunday is ____________.
   (c) The day between Tuesday and Thursday is ____________.
   (d) Two days after Friday are ________ and ________.
   (e) Two days before Wednesday are ______ and ______.

**Weeks**

Look at the calendar page.

Group the days to show the weeks in the month.

How many weeks are there in the month?

**Exercise B**

1. If school sports is held in the first week of the month of October and Joan’s birthday is one week later, in which week will Joan’s birthday be?

2. If Easter is in the second week of April and school re-opens two weeks later, in which week school re-opens?
Months

Use a calendar to help you find these.

1. How many months are there between:
   (a) Christmas and Mashramani?
   (b) Christmas and Easter of this year?
   (c) Pagwah and Diwali?
   (d) Youman-Nabi and Edul Adha?

2. Which month comes:
   (a) before January?
   (b) after May?
   (c) after October?
   (d) before July?

3. (a) Ann’s birthday is in June. Anil’s birthday is 3 months earlier. In which month is Anil’s birthday?

   (b) This month is March. Our school’s fair will be held in 2 months’ time. In which month will the fair be held?

   (c) Danny went on holidays. After 4 months, he is now back at school in November, when did he go on holidays?
UNIT 24  MULTIPLICATION

Multiplication by 10

Look at these strips
Count the number of parts on each strip.
Count the number of strips.
Can you tell which multiplication table is shown by the strips and the parts on them?

Exercise A

1. Find, by counting, how many in each. The first one is done for you.
   (a) 2 sets of 10 = 20
   (b)  \[\square \text{ sets of 2} = \square\]
   (c) \[\square \text{ sets of } \square = \square\]
   (d) \[\square \text{ sets of } \square = \square\]
2. Complete these.
   Use sets to help you.

   (a) 5 sets of 10 =
   (b) 9 x 10 =
   (c) 6 x 10 =
   (d) 9 tens =
   (e) 7 sets of ten =
   (f) 3 sets of ten =

Remember!

The answer in a multiplication is called the product.

3. Find the product of:

   (a) 3 x 10
   (b) 5 x 10
   (c) 9 x 10
   (d) 4 x 10

Watch the numbers get bigger.

<table>
<thead>
<tr>
<th>7</th>
<th>x 10</th>
<th>70</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>x 10</td>
<td>100</td>
</tr>
<tr>
<td>14</td>
<td>x 10</td>
<td>140</td>
</tr>
</tbody>
</table>

Exercise B

1. Make these numbers 10 times bigger.
   3; 6; 12; 25; 31.

   When we multiply by 10 the answer always has a zero in the ones place.
Find a short cut.

(a) $9 \times 10 = 90$
(b) $19 \times 10 =$ [ ]
(c) $23 \times 10 =$ [ ]
(d) $40 \times 10 =$ [ ]

Look at the sets.

(a) [Diagram of sets]
(b) [Diagram of sets]

Do they have the same number of members?
Count to find out.
Write two number sentences for each.

$5 \times 10 = 50$
$10 \times 5 = 50$

3. Write the other number sentences.

(a) $3 \times 10 = 10 \times 3$
(b) $5 \times 10 =$ [ ] x [ ]
(c) $10 \times 2 =$ [ ] x [ ]
(d) [ ] x [ ] = $4 \times 10$
Multiply 2-digit Numbers by 10

Look at the multiplication.  
32  
Read it. Try to follow the working.  
\[ \begin{array}{c} \times 10 \\ 320 \end{array} \]

Exercise C

1. Do these for practice.

(a) \[ \begin{array}{c} 12 \\ x 10 \end{array} \]  
(b) \[ \begin{array}{c} 23 \\ x 10 \end{array} \]  
(c) \[ \begin{array}{c} 19 \\ x 10 \end{array} \]  
(d) \[ \begin{array}{c} 37 \\ x 10 \end{array} \]

2. (a) \[ \begin{array}{c} 43 \\ x 10 \end{array} \]  
(b) \[ \begin{array}{c} 59 \\ x 10 \end{array} \]  
(c) \[ \begin{array}{c} 67 \\ x 10 \end{array} \]  
(d) \[ \begin{array}{c} 71 \\ x 10 \end{array} \]

3. Read the problems carefully.

(a) 12 things make one dozen.
   Our family sold 10 dozen eggs.
   How many eggs did we sell?

(b) A box has 35 drinking straws.
   A shop keeper uses 10 boxes each week.
   How many drinking straws does he use in a week?

Money — $10 Coins

\[ \begin{array}{cccccccccc} 10 & 20 & 30 & 40 & 50 & 60 & 70 & 80 & 90 & 100 \end{array} \]
Exercise D

1. Copy and complete:
   (a) 5 ten dollars = \[5 \times 10 = 50\] dollars
   (b) 3 ten dollars = \[\square \times \square = \square\] dollars
   (c) 2 ten dollars = \[\square \times \square = \square\] dollars
   (d) 6 ten dollars = \[\square \times \square = \square\] dollars
   (e) 8 ten dollars = \[\square \times \square = \square\] dollars

2. Solve these problems.
   (a) David emptied his savings. He had 5 ten dollar coins. How much money did David save?
   (b) Find the cost of 10 rulers at one dollar each.
   (c) At a school concert, the programme was sold for 20 dollars. Ann sold 10 programmes. How much money did Ann receive from the sale?
   (d) How much money is this?

[Image of coins]
REVIEW

1. Complete this series.
   10, 20, [__, __, __, __, 70, __, __, __].

2. Check how well you know your tables.
   Write the answers.

<table>
<thead>
<tr>
<th>10 x</th>
<th>3</th>
<th>9</th>
<th>5</th>
<th>0</th>
<th>7</th>
<th>2</th>
<th>1</th>
<th>10</th>
<th>4</th>
<th>8</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3. Match these:
   (a) 3 tens  140
   (b) 20      10 ten dollars x 10
   (c) 4 x 10  2 x 10
   (d) 100 dollars 30
   (e) 14 x 10 40

4. Multiply each of these numbers by 10.
   (a) 9      (b) 17      (c) $20      (d) 67      (e) $80

5. Problems for you to solve.
   (a) If sweets are put into bags and each bag has 7.
       How many sweets are there in 10 bags?

   (b) It costs $60 to post a letter.
       What will it cost to post 10 letters?

   (c) Find the product of 18 and 10.
UNIT 25  FRACTIONS

Multiply Unit Fractions by Whole Numbers

1. Look at the pictures below.
   Each shows 4 equal parts.
   Name the parts on each.
   (a)  (b)  (c)

   How many quarters are shaded on each?
   How many quarters are shaded altogether?

   We can write \[ \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4} \]

   Is there another way to write this?
   Let us try.
   How many times is one quarter shaded?
   So, three times one quarter can be written as

   \[ \frac{1}{4} + \frac{1}{4} + \frac{1}{4} = \frac{3}{4} \text{ or } 3 \times \frac{1}{4} = \frac{3}{4} \]

2. Now use paper to do this one.
   Use two pieces of paper the same size and shape.
   Fold each into three equal parts.
   Remember, the edges must meet to make the parts equal.

   [Diagram of folded paper]
Open each piece of paper.
Each part shows a third.
Colour one third on each.
How many times did you colour one third?
How many thirds did you colour in all?
Write this in two ways.

Here is another example.

\[
\frac{1}{3} + \frac{1}{3} = \frac{2}{3}
\]

\[
\frac{1}{3} \times 2 = \frac{2}{3}
\]

What do you notice here?

To multiply a fraction by a whole number, multiply the numerator of the fraction by the whole number.

Exercise A

1. Write addition sentences to show how many parts are shaded in all.

(a)

(b)
2. Complete the number sentences.
   (a) \( \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \) 
   
   (b) \( \frac{1}{5} + \frac{1}{5} = \) 
   
   (c) \( \frac{1}{10} + \frac{1}{10} + \frac{1}{10} = \) 
   
   (d) \( \frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = \) 

3. Write each of these as a multiplication.
   The first one is done for you.
   (a) \( \frac{1}{6} + \frac{1}{6} - 2 \times \frac{1}{6} - \frac{2}{6} \) 
   
   (b) \( \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \) 
   
   (c) \( \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} = \) 
   
   (d) \( \frac{1}{4} + \frac{1}{4} = \)
4. Write each multiplication as addition.
   Find the answers.
   (a) \( 2 \times \frac{1}{4} = \) 
   (b) \( 3 \times \frac{1}{10} = \) 
   (c) \( 3 \times \frac{1}{6} = \) 
   (d) \( 2 \times \frac{1}{12} = \)

5. Copy and complete:
   (a) \( 3 \times \frac{1}{8} = \) 
   (b) \( \frac{4}{10} \times \frac{2}{3} = \)
   (c) \( \frac{4}{3} \times 2 = \) 
   (d) \( 5 \times \frac{1}{12} = \)
   (e) \( \frac{3}{4} \times 1 = \) 
   (f) \( 3 \times \frac{3}{8} = \)

**Multiplication and Division**

Look at the number line.
The arrows at the top of the line show that a frog starts at zero and hops 5 spaces each time.
3 hops take him to 15.
So, \( 5 + 5 + 5 = 15 \)
\( 3 \times 5 = 15 \)

The arrows below the line shows the frog going back from 15 to zero.
Three moves of 5 spaces each take him back to zero.
So, \( 15 - 5 = 10; \quad 10 - 5 = 5; \quad 5 - 5 = 0 \)
\( 15 \div 5 = 3 \)
Similarly,

6. (a) If \(3 \times 5 = 15\), then \(15 \div 5 = 3\)

(b) If \(4 \times 3 = 12\), then \(12 \div 3 = 4\)

So, division is the opposite of multiplication

Exercise B

1. Copy and complete:
   Use the number lines.
   (a) \(4 \times 3 = \square\)  (b) \(5 \times 2 = \square\)
   (c) \(10 + 2 = \square\)  (d) \(12 + 3 = \square\)

2. Solve these problems.
   Show multiplication and division.
   Use a number line to help you.
   (a) (i) A frog is at one end of a 21 cm strip of wood.
   He can only hop 3 cm at a time.
   How many hops will it take to get him to the other end?
   (ii) If the frog makes 7 hops of 3 cm each, how many cm did it hop in all to get to the other end?

   (b) (i) Nikita and Indra each had 8 rubber bands.
   How many rubber bands do they have together?
   (ii) If 16 rubber bands were shared equally to Nikita and Indra, how many did each child get?

   (c) (i) There are 4 groups of 6 children each.
   How many children are there?
   (ii) If 24 children are placed into groups of 4, how many groups will be formed?
REVIEW

1. Copy and complete:

<table>
<thead>
<tr>
<th>Multiplication</th>
<th>Addition</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3 \times \frac{1}{3}$</td>
<td>$\frac{1}{3} + \frac{1}{3} + \frac{1}{3}$</td>
<td>$\frac{3}{3}$</td>
</tr>
<tr>
<td>$4 \times \frac{1}{6}$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$5 \times \frac{1}{4}$</td>
<td>$\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$</td>
<td></td>
</tr>
<tr>
<td></td>
<td>$\frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12} + \frac{1}{12}$</td>
<td></td>
</tr>
</tbody>
</table>

2. Use number lines to solve these. Write a multiplication for each.

(a) $\frac{1}{3} + \frac{1}{3} = 2 \times \frac{1}{3} = \frac{2}{3}$

(b) $\frac{1}{4} + \frac{1}{4} + \frac{1}{4}$

(c) $\frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$

(d) $\frac{1}{8} + \frac{1}{8} + \frac{1}{8}$
3. Solve these problems.
   (a) Billy drinks \( \frac{1}{8} \) litre of milk every day.
       What fraction of a litre milk does he drink in 5 days?
   (b) Sue, Billy, Nikita and Anil each ate \( \frac{1}{6} \) of a chocolate.
       What fraction of the chocolate did they eat altogether?

4. Copy and complete:
   (a) \( 4 \times 6 = 24 \)
       \[ 24 \div 6 = \]
   (b) \( 2 \times 12 = 24 \)
       \[ 24 \div 12 = \]
   (c) \( 3 \times 5 = 15 \)
       \[ 15 \div 5 = \]
   (d) \( 3 \times 9 = 27 \)
       \[ 27 \div 9 = \]
   (e) \( 5 \times 8 = 40 \)
       \[ 40 \div 8 = \]
   (f) \( 4 \times 8 = 32 \)
       \[ 32 \div 8 = \]

5. Complete the table to show division as the opposite to multiplication.

<table>
<thead>
<tr>
<th>Multiplication</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>( 3 \times 6 = 18 )</td>
<td>( 18 \div \square = 6 )</td>
</tr>
<tr>
<td>( 3 \times 7 = 28 )</td>
<td>( \square )</td>
</tr>
<tr>
<td>( 3 \times 9 = 45 )</td>
<td>( \square )</td>
</tr>
<tr>
<td>( 2 \times 10 = 20 )</td>
<td>( \square )</td>
</tr>
<tr>
<td>( 2 \times 5 = 15 )</td>
<td>( \square )</td>
</tr>
</tbody>
</table>

LET US LOOK BACK

1. Copy and complete:
   (a) \( 12 \times 4 = \)
   (b) \( 112 \times 3 = \)
   (c) \( 101 \times 5 = \)
   (d) \( 312 \times 2 = \)
   (c) \( 325 \times 4 = \)
2. (a) $75 \times 10$ (b) $85 \times 10$ (c) $32 \times 10$ (d) $53 \times 10$ (e) $60 \times 10$

3. Multiply and divide:
   (a) $5 \times 8 = 40$  (b) $40 \div 8 = \underline{5}$  (c) $40 \div 5 = \underline{8}$
   (d) $7 \times 3 = \underline{21}$  (e) $\div 3 = \underline{7}$  (f) $\div 7 = \underline{1}$

4. (a) $\frac{1}{6} + \frac{1}{6} + \frac{1}{6} + \frac{1}{6} = 4 \times \frac{1}{6}$  (b) $\frac{1}{3} + \frac{1}{3}$
   (c) $\frac{1}{8} + \frac{1}{8} + \frac{1}{8} + \frac{1}{8} = \frac{1}{5} + \frac{1}{5} + \frac{1}{5} + \frac{1}{5}$

5. How many days are there from:
   (a) Monday to Friday?  (b) Thursday to Monday?
   (c) 6th to the 12th of the month?  (d) 3rd to the 10th of the month?

6. Which month comes just:
   (a) Before January?  (b) After August?  (c) Between June and August?

7. Use a piece of string and cm ruler.
   Find the perimeter of each shape below.

   (a)  
   (b)  
   (c)  

8. Solve the following:
   (a) A carton of Coca-Cola contains 24 bottles. How many bottles will there be in 5 cartons?
   (b) A tray of eggs has 48. How many eggs will there be in 4 trays?
   (c) A bag contains 156 sweets. How many sweets will there be in three bags?
UNIT 26  DIVISION; PIE CHART

Here are 12 cakes:

If we put the cakes into sets of 2. How many sets of 2 will there be?

The picture shows that there are 6 twos in 12.
We can write a division sentence to show how many twos there are in 12.

\[ 12 \div 2 = 6 \]

When we find the answer in division we are finding the quotient.

Exercise A

Use each picture to find the answer.

1. \[ 10 \div 5 = \square \]

2. \[ 14 \div 2 = \square \]

3. \[ 12 \div 3 = \square \]

4. \[ 16 \div 4 = \square \]

5. \[ 15 \div 5 = \square \]

6. \[ 10 \div 2 = \square \]
Exercise B

Find the quotient:
(a) 12 ÷ 4    (b) 20 ÷ 5
(c) 14 ÷ 2    (d) 21 ÷ 3
(e) 15 ÷ 3    (f) 24 ÷ 4

Repeated Subtraction

\[
\begin{array}{c}
6 \\
4 \sqrt{24} \\
\end{array}
\]

Start by saying 6 fours were subtracted to get 0.
4 can be taken 1 time.
from 24 (1 time).

\[
\begin{array}{c}
- 4 \\
20 \\
\end{array}
\]

The number of times 4 was subtracted is the quotient.

\[
\begin{array}{c}
- 4 \\
16 \\
\end{array}
\]

\[
\begin{array}{c}
- 4 \\
12 \\
\end{array}
\]

\[
\begin{array}{c}
- 4 \\
8 \\
\end{array}
\]

\[
\begin{array}{c}
- 4 \\
4 \\
\end{array}
\]

\[
\begin{array}{c}
- 4 \\
0 \\
\end{array}
\]

6 times

Exercise C

Find the quotient by repeated subtraction.

(a) 4 \sqrt{20}    (b) 4 \sqrt{36}
(c) 3 \sqrt{24}    (d) 2 \sqrt{16}
(e) 3 \sqrt{18}    (f) 5 \sqrt{40}
(g) 4 \sqrt{32}    (h) 3 \sqrt{27}
Look at the two machines.

Multiplication and Division are related.
Learn your multiplication tables

\[
\begin{align*}
3 \times 5 &= 15 \\
5 \times 3 &= 15 \\
15 \div 3 &= 5 \\
15 \div 5 &= 3
\end{align*}
\]

Exercise D
1. Copy and complete:

(a) \(2 \times 1 = \square\)  
(b) \(3 \times 4 = \square\)  
(c) \(5 \times 5 = \square\)

\[
\begin{align*}
2 \div 2 &= \square \\
12 \div 3 &= \square \\
25 \div 5 &= \square
\end{align*}
\]

(d) \(6 \times 3 = \square\)  
(e) \(4 \times 4 = \square\)  
(f) \(7 \times 3 = \square\)

\[
\begin{align*}
18 \div 3 &= \square \\
16 \div 4 &= \square \\
21 \div 3 &= \square
\end{align*}
\]

Start by saying 3 can go into 12 four times.  
\[3 \sqrt{123}\]

Write 4 as a quotient.

\[
\begin{array}{c}
\underline{12} \\
\hline
\underline{003} \\
\hline
\underline{-3}
\end{array}
\]

Multiply 4 by 3 and subtract.

Bring down the 3.

Say 3 can go into 3 one time.

Write 1 as a quotient.

Multiply 1 by 3 and subtract.

0 is left.
2. Find the quotient.
   (a) $2 \sqrt{142}$  
   (b) $4 \sqrt{160}$
   (c) $3 \sqrt{153}$  
   (d) $5 \sqrt{105}$
   (e) $2 \sqrt{184}$  
   (f) $3 \sqrt{216}$
   (g) $4 \sqrt{124}$  
   (h) $5 \sqrt{255}$

**Pie Charts**

Mother baked a pie and shared it to Peter, Pam and Prince.
1. Which child got the biggest piece?
2. Who got the smallest piece?
3. Did any two children get equal pieces?

The lines at the top of the pie show how it was cut and shared.
Now look at the picture below. It is called a **pie chart**.
What shape does it have?

This pie chart shows three flavours of drinks sold at the school fair.

1. Which flavour did most people buy?
2. Which flavour did few people buy?
3. Which flavour was their second choice?
Exercise E

1. A farmer planted his garden with peas, oehroes, peppers and eschallot.

\[
\frac{1}{2} \text{ of the garden has } \quad \text{_________________.}
\]

\[
\frac{1}{4} \text{ of the garden has } \quad \text{_________________.}
\]

\[
\frac{1}{4} \text{ of the garden has } \quad \text{_____________ and } \quad \text{_________________ .}
\]

2. Make a pie chart to show this:
A class has 24 children, 12 children like swimming,
6 children like riding and the rest like football.

REVIEW

Copy and complete:
(a) \(2 \sqrt{66}\)                    (b) \(3 \sqrt{69}\)
(c) \(5 \sqrt{55}\)                    (d) \(3 \sqrt{99}\)
(e) \(2 \sqrt{88}\)                    (f) \(2 \sqrt{64}\)
(g) \(3 \sqrt{90}\)                    (h) \(4 \sqrt{80}\)
UNIT 27  POINTS, CONGRUENT LINE SEGMENTS

Use a plane piece of paper.
Place two points about 4 cm apart on the paper.
Name the points M and N
Your paper should look like this:

\[ \bullet \quad \bullet \]

M \quad N

Fold your paper so that the points are on the crease.
Open the paper and use a ruler to draw a line to join the points.

\[ \bullet \quad \bullet \]

M \quad N

M and N are the end points of the line.
MN is a line segment.

A straight line that has two end points is a line segment.

Use a ruler to make the line longer at both ends.
Mark arrow at the ends of the line.

\[ \bullet \quad \bullet \quad \bullet \quad \bullet \]

L \quad M \quad N \quad O

Name the arrow heads L and O.
LO is a line that can go on and on at both ends.
What is MN?
Name two other line segments on this line.
Exercise A

1. Look at this

\[ A \quad B \quad C \quad D \quad E \quad F \quad G \]

(a) How many points are there on the line?
(b) Name the points on the line.
(c) How many line segments are there on the line?
(d) Name the segments on the line.
(e) What are the points between B and E?

Congruent Segments

Make two points on your page. Name them.
Draw a line to join the two points.
Name the segment that has been formed.
Now draw these line segments in your book.

Exercise B

1. Use your centimetre ruler or strip to measure the line segments you have drawn.
   Record the measures.
   Example: \( AB = 2 \text{ cm} \)
   Are all the line segments of equal length?
   Match the line segments that are the same length.

Two line segments of same length are congruent.

Symmetry

Try these:

- Take a piece of paper like this.
- Fold it to get two equal parts.
Tear around the folded edge.

Open it and draw a dotted line along the crease.

Now look at the pattern formed.
Is it the same on both parts?
Why is this so?

Since the parts are equal and the pattern is the same on both parts, we say:
The patterns are symmetrical.
The dotted line which helps us to see the patterns, is the line of symmetry.
The line of symmetry divides the shape into exactly two equal parts.

Exercise C
Copy these and draw the line of symmetry on each.

(a) 

(b) 

(c) 

(d) 

(e) 

(f)
2. Some shapes have more than one line of symmetry.
Example:

How many lines of symmetry are shown in this shape?

Exercise D

1. Which show symmetry?

(a)  
(b)  
(c)  
(d)  
(e)  
(f)  

2. Trace each shape.
   Draw as many lines of symmetry as you find.
   Remember, the line of symmetry divides the shape into exactly two equal parts.

(a)  
(b)  
(c)  
(d)  
(e)  
(f)  
(g)  
(h)  
(i)
UNIT 28       DIVISION

Divide by 2, 3, 4, 5.

Look at this.
We can count 10 in each.

2 fives

5 twos

How many fives are there in 10?
How many twos are there in 10?

Exercise A

1. Make drawings to help you solve the following problems.
   (a) How many twos are there in each?
       6, 10, 4, 8, 2?

   (b) How many threes are there in each?
       6, 15, 9, 12, 24?

   (c) How many fours are there in each?
       8, 20, 24, 16, 4?

   (d) How many fives are there in each?
       5, 20, 10, 15, 30?

Here is a division fact card.
We can write two division facts from this card.

\[
\begin{array}{c}
3 \times 4 = 12 \\
12 \div 3 = 4 \\
12 \div 4 = 3 \\
\end{array}
\]

Remember, this sign, $\div$, means divided by or shared.
2. Write facts for these:

\[
\begin{array}{cccc}
5 & 2 \\
10 & 6 \\
\text{c) } & 3 \\
15 & 3 \\
\text{d) } & 5 \\
20 & 4 \\
\end{array}
\]

(a) \(10 \div \square = \square\)  \hspace{1cm} (b) \(6 \div \square = \square\)

(c) \(\square \div 3 = \square\)  \hspace{1cm} (d) \(\square \div \square = \square\)

3. Copy and complete:

(a) \(8 \div 2 = \square\)  \hspace{1cm} (b) \(10 \div \square = 5\)  \hspace{1cm} (c) \(\square \div 3 = 1\)

(d) \(3 \div 3 = \square\)  \hspace{1cm} (e) \(25 \div \square = 5\)  \hspace{1cm} (f) \(\square \div 2 = 8\)

Divide like this:

\[
\begin{array}{c}
24 \div 2 \\
\hline
\text{Divisor} & 4 \sqrt{24} & \text{Quotient} \\
\hline
-2 & 12 & \text{1. Divide the tens} \\
04 & \text{2. Multiply and subtract.} \\
-4 & \text{3. Divide the ones.} \\
0 & \text{4. Multiply and subtract.} \\
\hline
\end{array}
\]

In division, the answer is called the quotient.

4. Work and find the quotients:

(a) \(88 \div 2\)  \hspace{1cm} (b) \(39 \div 3\)

(c) \(48 \div 4\)  \hspace{1cm} (d) \(50 \div 5\)

(e) \(46 \div 2\)  \hspace{1cm} (f) \(90 \div 3\)

(g) \(44 \div 4\)  \hspace{1cm} (h) \(55 \div 5\)
Exercise B

Problem solving
1. There are 40 players on the field.
   Put them into 4 teams.
   How many players are there in each team?

2. A jar has 50 cookies.
   Share them equally among 5 children.
   How many cookies does each child get?

3. If 3 eggs cost $36, what is the cost of 1 egg?

   How many balloons will each seller get?

Divide hundreds, tens and ones.

Exercise C

Look at this division

\[
\begin{array}{c}
442 \div 2 \\
\hline
221 \\
2 \sqrt{442} \\
-400 \\
\hline
40 \\
-40 \\
\hline
2 \\
-2 \\
\hline
000
\end{array}
\]

1. Divide the hundreds.
2. Multiply and subtract.
3. Divide the tens, multiply and subtract.
4. Divide the ones, multiply and subtract.
1. Now divide these.
Write the quotients.

(a) $684 \div 2$
   $426 \div 2$
(b) $248 \div 2$
   $284 \div 2$
(c) $363 \div 3$
   $339 \div 3$

(d) $366 \div 3$
   $666 \div 3$
(e) $840 \div 4$
   $400 \div 4$
(f) $505 \div 5$
   $500 \div 5$

2. More problems
(a) If 5 pineapples cost $5
Find the cost of 1?
(b) Put 240 sweets into tow bags.
   How many sweets will be in each bag?

Divide and regroup.

(a) $34 \div 2$

\[
\begin{array}{c}
17 \\
2 \sqrt{34} \\
- 20 \\
14 \\
- 14 \\
00
\end{array}
\]

(b) $360 \div 2$

\[
\begin{array}{c}
180 \\
2 \sqrt{360} \\
- 200 \\
160 \\
- 160 \\
00
\end{array}
\]

Exercise D

Divide these, remember to regroup:

(a) $16 \div 2$
   $76 \div 2$
(b) $36 \div 2$
   $52 \div 2$
(c) $56 \div 2$
   $98 \div 2$

(d) $42 \div 3$
   $72 \div 3$
(e) $24 \div 3$
   $57 \div 3$
(f) $45 \div 3$
   $84 \div 3$
REVIEW

1. How many twos are there in:
   (a) 8?          (b) 10?          (c) 12?          (d) 18?

2. How many fours are there in:
   (a) 12?         (b) 16?         (c) 28?         (d) 36?

3. Copy and work:
   (a) $2 \sqrt{38}$       (b) $3 \sqrt{54}$
   (c) $4 \sqrt{72}$       (d) $5 \sqrt{60}$
   (e) $2 \sqrt{500}$      (f) $3 \sqrt{720}$
   (g) $4 \sqrt{564}$      (h) $5 \sqrt{725}$

4. Problems for you to solve:
   (a) Johnny has 24 chocolate sweets.
       If he eats 2 each day, how long will his sweets last?

   (b) 156 exercise books are on the teacher’s table.
       Each pupil will get 3 exercise books.
       How many pupils can get exercise books?

   (c) Share $168 equally among 4 boys.
       How much money will each boy get?
UNIT 29    MASS

Kilograms

Marnice has these objects but no balance.

To tell the mass of each, this is what she did. She held two of them — one bag of clay in each hand, she said the clay is about one kilogram; the plastic bag of sand is more than one kilogram; the small stone is less than one kilogram.

Help her find each mass. Use your balance and a 1 kg measure.
Balance each with the kilogram.
What did you find out?
How close were the estimates?

Exercise A

1.   (a) Now collect some objects in your class.
        Say which is heavier; lighter; and which have the same mass.
        Measure to find out.

   (b) Group your objects according to their mass in kilograms.
        Which is your heaviest object and lightest object?
        Do you have objects with the same mass?
        Record their mass on a table like this.

<table>
<thead>
<tr>
<th>OBJECTS WEIGHING</th>
<th>1 kg</th>
<th>More than 1 kg</th>
<th>2 kg</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2. Use your balance to find a 1 kg measure of sand.

1 kg = 1000 g

Here are some objects.

(a) Estimate the mass of each in grammes.
Your answers should be 1000 g or less than 1000 g or more than 1000 g.
Use your 1000 g measure to find the actual mass of the objects you have.
Record your findings.

Use your balance to find \( \frac{1}{2} \) kg measure of sand.

This \( \frac{1}{2} \) kg measure is equal to 500 grammes (g).

Look at these:

(b) Estimate their mass in grammes e.g. 500 g less than, 500 g, or more than 500 g.

Use your 500 g measure to find the mass of the objects you have.
Record your findings.
REVIEW

1. Select those which can be measured in kilograms:
   (a) a bag of sand                        (b) a lump of clay
   (c) a bottle of water                   (d) gasolene
   (e) a box of chalk                      (f) milk

2. Find objects such as these:

Use your 1000 g measure to find their mass. Say if they are greater than; less than; or equal to 1000 g.
UNIT 30  CAPACITY; SETS

Litre; 50 Centilitres

Remember!
The unit of measure for liquid is litre (l).

Now look at this measuring cylinder.
It holds 100 centilitres (cl).
This is equal to 1 litre (l).
Look at the marks on your litre container.
Fill your cylinder with water.

Pour water into another litre container
until it reaches the mark 50.
Place the two cylinders side by side like this.

What do you notice about the water in
the two cylinders.

<table>
<thead>
<tr>
<th>100 Centilitres</th>
<th>=</th>
<th>1 Litre</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 Centilitres</td>
<td>=</td>
<td>$\frac{1}{2}$ Litre</td>
</tr>
<tr>
<td>two (50 Centilitre)</td>
<td>=</td>
<td>1 Litre</td>
</tr>
</tbody>
</table>

Exercise A

1. (a) Use your 50 cl measure to fill the 1 litre container.
How many full measures did you use?
(b) How many 50 cl measures will you use to fill a container
which holds 2 litres?
(c) Tom drinks two 50 cl measure of water everyday.
Harry drinks 1 litre of water everyday. Who drinks more/less water in a day?
2. Use your 1 litre and 50 cl measures to find out the amount of liquid these containers hold.

Sets

Study these sets.

(a) 
(b) 
(c) 

Name the members of each set. 
What do the members of each set have in common? 
Name each set. 
Name four other collections.

Remember!
A set is a collection of things. 
The things are members of the set. 
Members of a set have something in common. 
Each set has a name.

Exercise B

1. Make collections of: 
coloured pencils; solid shapes; story books; toys.
2. Display your sets.
   Say what the members have in common.
   Name each set, e.g. This is my set.

   The members are all clothes we wear.
   This is a set of clothes.

**Subsets**

Look at the set A.
Name the members.
Name the set.
Talk about the members of this set, with your friend.

Let us look at sets B, C, D, E and F.

What is common about the members in each set?
Are the members in these sets the same as those in set A?
Sets B, C, D, E, F are subjects of set A.
Exercise C

1. Make subsets from this set.

What do you notice about subsets?

A subset is any set whose members belong to, or are taken from, another set.

2. The children in your class are members of a set of Level 3 children. Make subsets to show:
   (a) the boys in Level 3.
   (b) the girls in Level 3 with long hair; with short hair.

Let all the children in the class get into groups of five.
How many groups are there?
Is each group a subset of the set of children in Level 3? Why?

3. Draw a set to show:
   The members of your family.
   Make all the subsets you can from the set.
   Compare them with those of your friends.
   Are they the same? Explain.
   Do you have the same number of subsets? Why or why not?
REVIEW

1. Use your measures to find out how many
   (i) litres  
   (ii) 50 cl each container holds.

   (a) 3 Litres  
   (b) 4 Litres  
   (c) 1 1/2 Litres

2. Copy and name each set.

   (a)  
   (b)  
   (c)

LET US LOOK BACK

1. Copy and complete:
   (a) \( 2 \sqrt{86} \)  
   (b) \( 4 \sqrt{48} \)  
   (c) \( 4 \sqrt{184} \)

2. Copy these shapes and draw as many lines of symmetry as possible.

   (a)  
   (b)  
   (c)

3. Solve these problems.
   (a) Rishi has 36 oranges.  
       If he eats 3 each day, how many days will his oranges last?

   (b) Share $255, equally among 5 boys. How much money will each boy get?
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