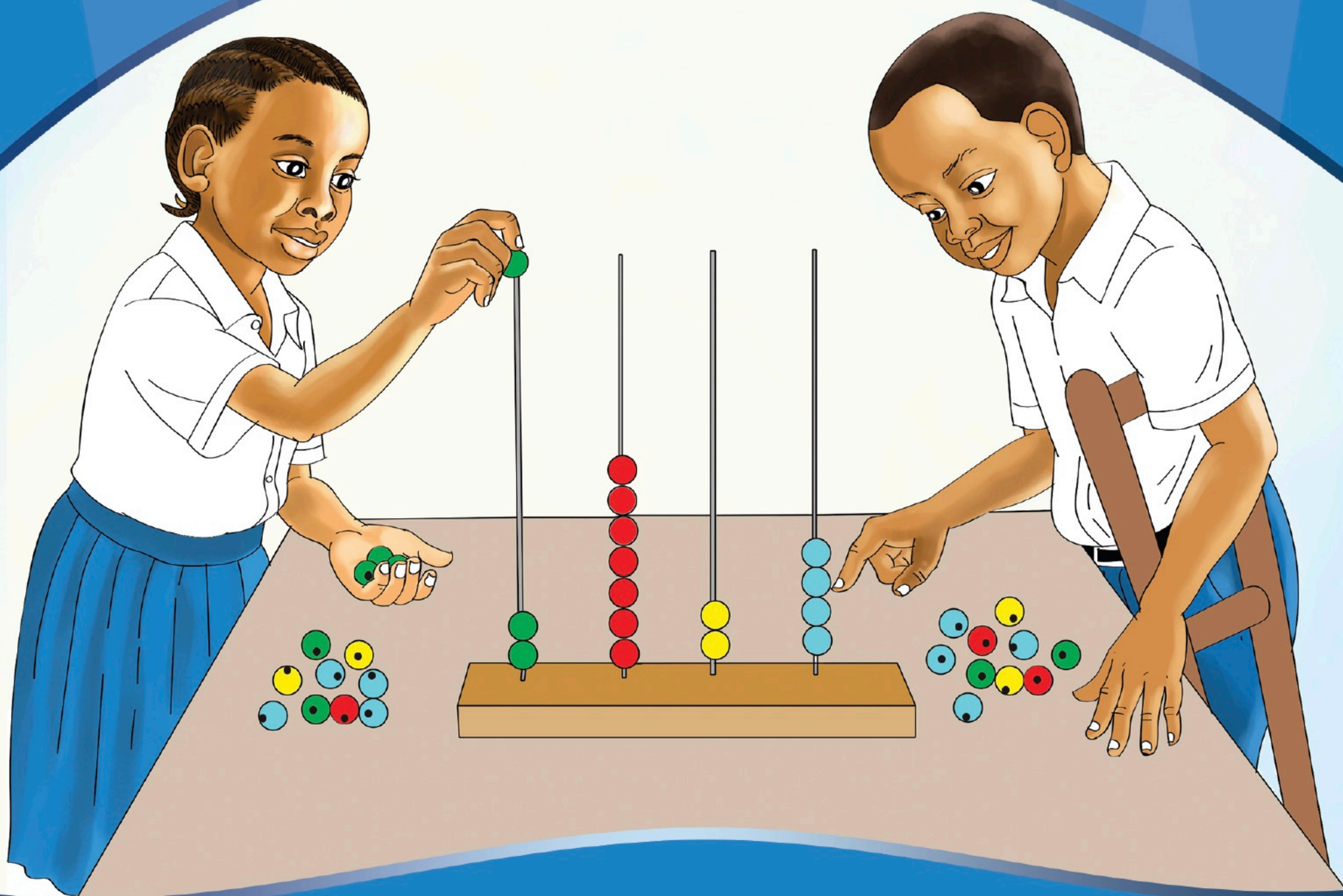


# Mathematics

## Standard Three

### Pupil's Book



Tanzania Institute of Education





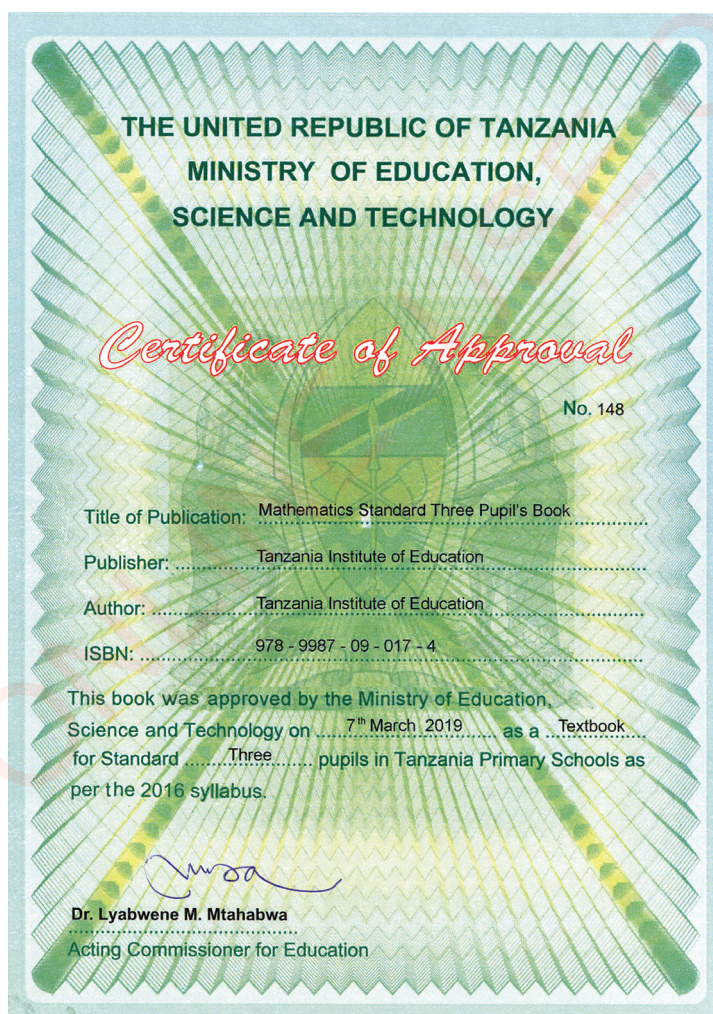
FOR ONLINE USE ONLY  
DO NOT DUPLICATE

# Mathematics



Standard Three

Pupil's Book



Tanzania Institute of Education

© Tanzania Institute of Education, 2019

Published 2019

Reprinted 2021

ISBN 978-9987-09-017-4

Tanzania Institute of Education

P.O. Box 35094

Dar es Salaam

Tel: +255 735 041 170 / +255 735 041 168

Email: [director.general@tie.go.tz](mailto:director.general@tie.go.tz)

Website: [www.tie.go.tz](http://www.tie.go.tz)

All rights reserved. This book may not be reproduced, stored in any retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, without prior written permission of the Tanzania Institute of Education.



## Table of contents

|                                          |           |
|------------------------------------------|-----------|
| <b>Acknowledgments .....</b>             | <b>iv</b> |
| <b>Introduction.....</b>                 | <b>v</b>  |
| <b>Chapter One</b>                       |           |
| Numbers.....                             | i         |
| <b>Chapter Two</b>                       |           |
| Number patterns .....                    | 28        |
| <b>Chapter Three</b>                     |           |
| Operations with numbers .....            | 34        |
| <b>Chapter Four</b>                      |           |
| Fractions .....                          | 73        |
| <b>Chapter Five</b>                      |           |
| Shapes and figures .....                 | 85        |
| <b>Chapter Six</b>                       |           |
| Measurements .....                       | 96        |
| <b>Chapter Seven</b>                     |           |
| Tanzanian currency.....                  | 111       |
| <b>Chapter Eight</b>                     |           |
| Statistics.....                          | 123       |
| Multiplication tables of 1 up to 12..... | 135       |



FOR ONLINE USE ONLY  
DO NOT DUPLICATE

## Acknowledgements

The Tanzania Institute of Education (TIE) would like to acknowledge the contributions of all the individuals and organisations who participated in the design and development of this book.

**Writers:** Mr Makoye J. Wangeleja, Mr Nchahoruri F. Joel, Ms Skolastika A. Kulanga, and Ms Sara J. Peter

**Editor:** Prof Ralph P. Masenge

**Designer:** Mr Katalambula F. Hussein

**Illustrators:** Mr Fikiri A. Msimbe and Alama Art and Media Production Co. Ltd.

**Coordinator:** Ms Phorosia R. Makhanda

TIE also extends its sincere gratitude to the teachers and pupils in the primary schools that participated in the trial of the manuscript.

Finally, the Institute would like to thank the Ministry of Education, Science and Technology for facilitating the process of writing this book.



Dr Aneth A. Komba

**Director General**

**Tanzania Institute of Education**

## Introduction

This book is the first book in a series of five books for Mathematics for primary schools. The book consists of eight chapters. Each chapter contains activities which will enable the pupil to acquire mathematical concepts, knowledge and skills. The activities and exercises will help the pupil to develop competencies in mathematical numeracy.



FOR ONLINE USE ONLY  
DO NOT DUPLICATE

FOR ONLINE USE ONLY

## Chapter One

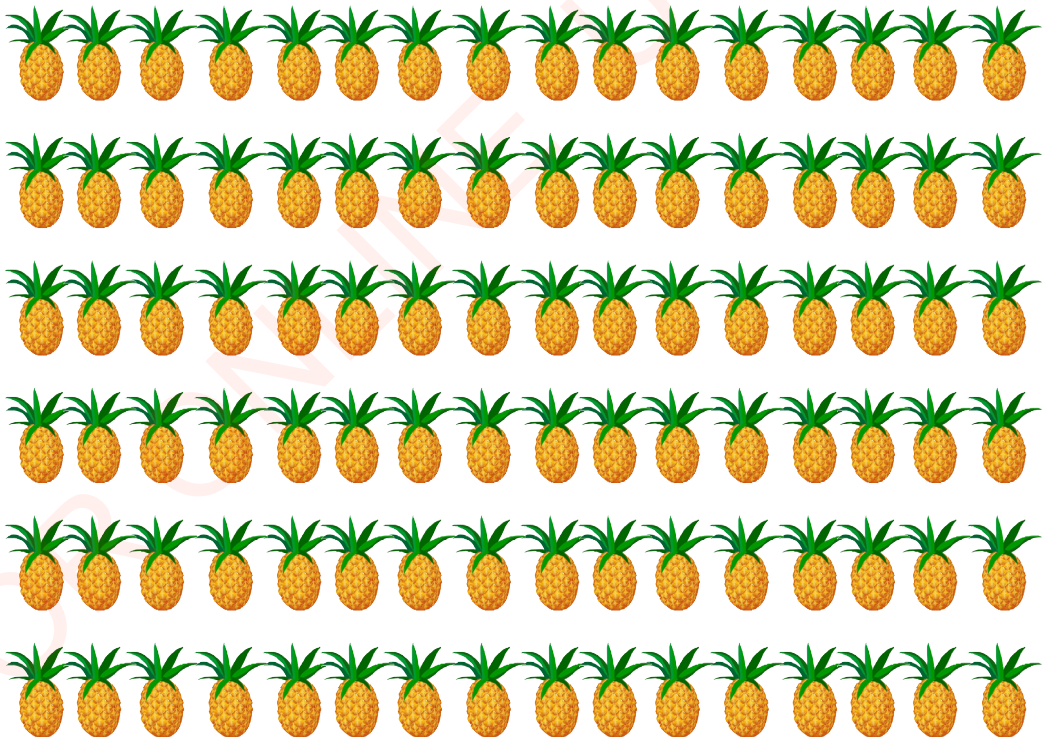
### Numbers

In this chapter, you will learn how to count, read and write whole numbers. You will also be able to identify the place value of a digit in a whole number.

#### Counting, reading and writing whole numbers

##### Exercise I Revision

1. Count the pineapples in the following picture and then write the total in numerals.





2. Read the numbers in the following table and then write them in words. The first number has been done as an example.

| Number in numerals | Number in words |
|--------------------|-----------------|
| 86                 | Eighty-six      |
| 39                 | .....           |
| 475                | .....           |
| 884                | .....           |
| 812                | .....           |
| 706                | .....           |
| 901                | .....           |
| 972                | .....           |

3. Write the following numbers in numerals. The first and second numbers are shown as examples.

| Number in words              | Number in numerals |
|------------------------------|--------------------|
| Fifty-seven                  | 57                 |
| Six hundred and twelve       | 612                |
| Twenty-two                   | .....              |
| Eighty-one                   | .....              |
| Three hundred and fifty-five | .....              |
| Six hundred and one          | .....              |
| Seven hundred and eighty     | .....              |
| Nine hundred and three       | .....              |
| Eight hundred and six        | .....              |
| One hundred and eleven       | .....              |
| Nine hundred and ninety-nine | .....              |
| Two hundred and forty-one    | .....              |

4. Study the following numbers and then answer the question that follows.

|    |    |     |     |     |     |
|----|----|-----|-----|-----|-----|
| 16 | 30 | 102 | 940 | 20  | 15  |
| 5  | 60 | 2   | 17  | 312 | 72  |
| 19 | 1  | 321 | 35  | 461 | 966 |

How many numbers are there in the table?

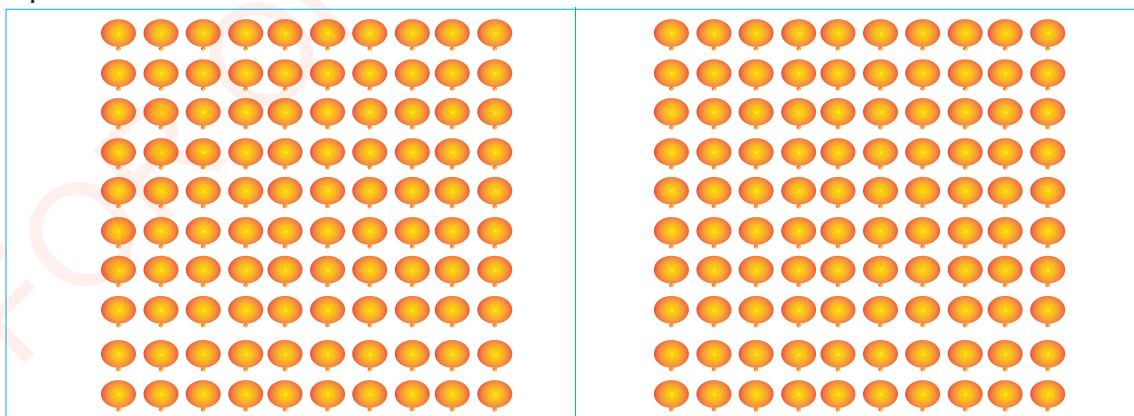
5. How many digits are there in number 2361?  
 6. Study the following numbers and then answer the questions that follow.

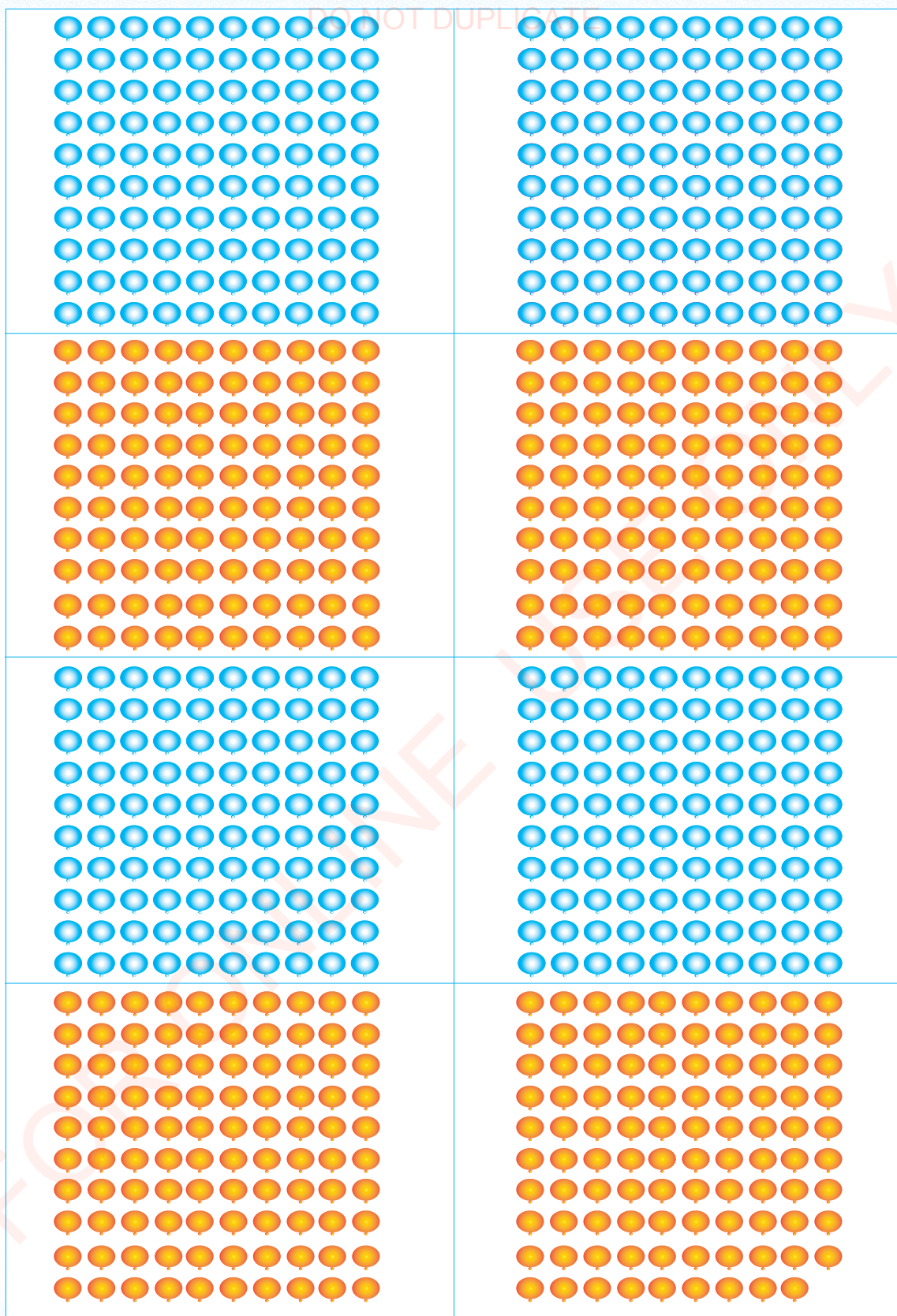
|   |    |    |    |    |    |
|---|----|----|----|----|----|
| 1 | 2  | 3  | 4  | 5  | 6  |
| 2 | 4  | 6  | 8  | 10 | 12 |
| 3 | 6  | 9  | 12 | 15 | 18 |
| 4 | 8  | 12 | 16 | 20 | 24 |
| 5 | 10 | 15 | 20 | 25 | 30 |
| 6 | 12 | 18 | 24 | 30 | 36 |

- a. How many numbers are there in the table?  
 b. How many different numbers are there in the table?

### Counting numbers from 999 to 9999

Count the balloons in the following pictures and then answer the questions that follow.





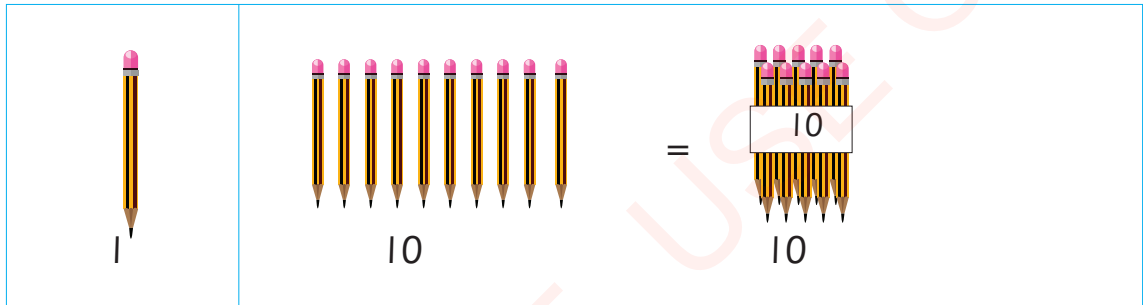


## Questions

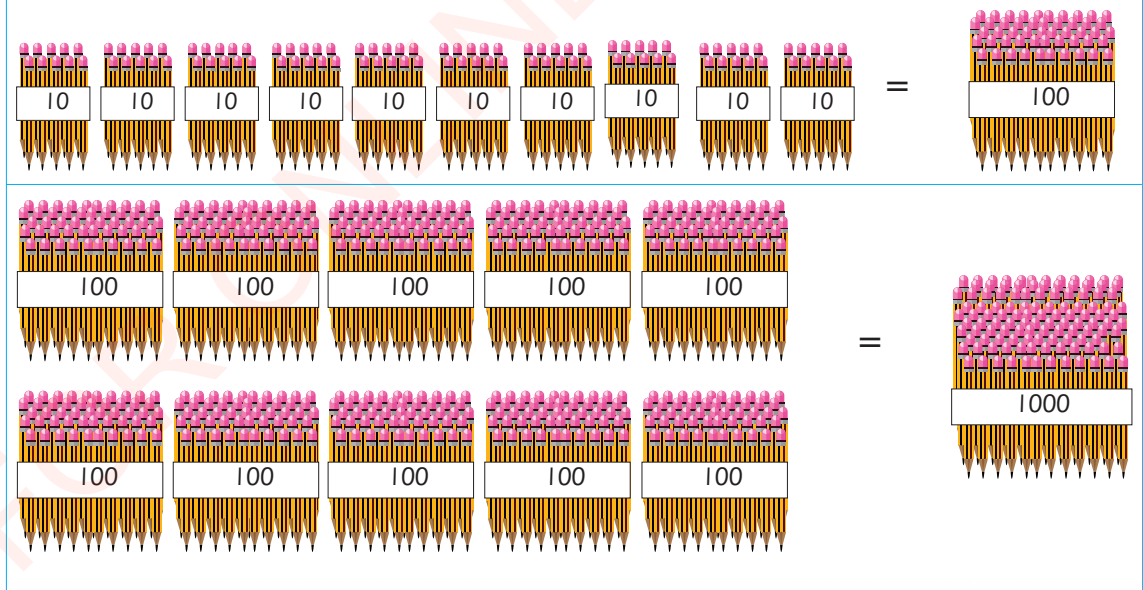
1. How many balloons are in each group?
2. Count the balloons in nine groups and write their total in your exercise book.
3. Count the balloons in all ten groups and write their total in your exercise book.

## Counting objects in groups

Count the following pencils.



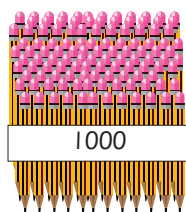
Count the pencils in the following pictures.



## Exercise 2

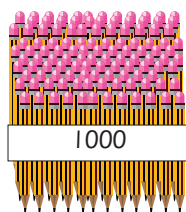
Write in each box the total number of the pencils.

1.



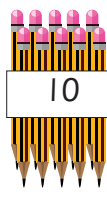
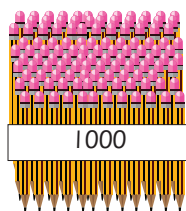
=

2.



=

3.



=

## Reading and writing numbers from 999 to 9999

### Reading numbers from 999 to 9999

A number can be read using the place values of its digits.

#### Example 1

**1001** is read as **one thousand and one**.

**1086** is read as **one thousand and eighty-six**.

**1100** is read as **one thousand and one hundred**.

Read the following numbers.

999 1000 1001 1002 1003 1004 1005 1006 1007 1008 1009 1010  
 1011 1012 1013 1014 1015 1016 1017 1018 1019 1020  
 1021 1022 1023 1024 1025 1026 1027 1028 1029 1030  
 1031 1032 1033 1034 1035 1036 1037 1038 1039 1040  
 1041 1042 1043 1044 1045 1046 1047 1048 1049 1050  
 1051 1052 1053 1054 1055 1056 1057 1058 1059 1060  
 1061 1062 1063 1064 1065 1066 1067 1068 1069 1070  
 1071 1072 1073 1074 1075 1076 1077 1078 1079 1080  
 1081 1082 1083 1084 1085 1086 1087 1088 1089 1090  
 1091 1092 1093 1094 1095 1096 1097 1098 1099 1100

### Example 2

**1350** is read as **one thousand, three hundred and fifty.**

**1572** is read as **one thousand, five hundred and seventy-two.**

**9700** is read as **nine thousand and seven hundred.**

**9540** is read as **nine thousand, five hundred and forty.**

**9998** is read as **nine thousand, nine hundred and ninety-eight.**



Read the numbers in the following table vertically.

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1100 | 1200 | 1300 | 1400 | 1500 | 1600 | 1700 | 1800 | 1900 | 2000 |
| 2100 | 2200 | 2300 | 2400 | 2500 | 2600 | 2700 | 2800 | 2900 | 3000 |
| 3100 | 3200 | 3300 | 3400 | 3500 | 3600 | 3700 | 3800 | 3900 | 4000 |
| 4100 | 4200 | 4300 | 4400 | 4500 | 4600 | 4700 | 4800 | 4900 | 5000 |
| 5100 | 5200 | 5300 | 5400 | 5500 | 5600 | 5700 | 5800 | 5900 | 6000 |
| 6100 | 6200 | 6300 | 6400 | 6500 | 6600 | 6700 | 6800 | 6900 | 7000 |
| 7100 | 7200 | 7300 | 7400 | 7500 | 7600 | 7700 | 7800 | 7900 | 8000 |
| 8100 | 8200 | 8300 | 8400 | 8500 | 8600 | 8700 | 8800 | 8900 | 9000 |
| 9100 | 9200 | 9300 | 9400 | 9500 | 9600 | 9700 | 9800 |      |      |

What is the last number in the above table?

### Exercise 3

1. Read the following numbers horizontally and vertically.

|      |      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|------|
| 1100 | 1110 | 1120 | 1130 | 1140 | 1150 | 1160 | 1170 | 1180 | 1190 | 1200 |
| 1210 | 1220 | 1230 | 1240 | 1250 | 1260 | 1270 | 1280 | 1290 | 1300 |      |
| 1310 | 1320 | 1330 | 1340 | 1350 | 1360 | 1370 | 1380 | 1390 | 1400 |      |
| 1410 | 1420 | 1430 | 1440 | 1450 | 1460 | 1470 | 1480 | 1490 | 1500 |      |
| 1510 | 1520 | 1530 | 1540 | 1550 | 1560 | 1570 | 1580 | 1590 | 1600 |      |
| 1610 | 1620 | 1630 | 1640 | 1650 | 1660 | 1670 | 1680 | 1690 | 1700 |      |
| 1710 | 1720 | 1730 | 1740 | 1750 | 1760 | 1770 | 1780 | 1790 | 1800 |      |
| 1810 | 1820 | 1830 | 1840 | 1850 | 1860 | 1870 | 1880 | 1890 | 1900 |      |
| 1910 | 1920 | 1930 | 1940 | 1950 | 1960 | 1970 | 1980 | 1990 | 2000 |      |

2. Read all the numbers in the following table.

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1001 | 1002 | 1003 | 1004 | 1005 | 1006 | 1007 | 1008 | 1009 | 1010 |
| 1011 | 1012 | 1013 | 1014 | 1015 | 1016 | 1017 | 1018 | 1019 | 1020 |
| 1021 | 1022 | 1023 | 1024 | 1025 | 1026 | 1027 | 1028 | 1029 | 1030 |
| 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 |
| 1241 | 1242 | 1243 | 1244 | 1245 | 1246 | 1247 | 1248 | 1249 | 1250 |
| 1351 | 1352 | 1353 | 1354 | 1355 | 1356 | 1357 | 1358 | 1359 | 1360 |
| 1461 | 1462 | 1463 | 1464 | 1465 | 1466 | 1467 | 1468 | 1469 | 1470 |
| 1571 | 1572 | 1573 | 1574 | 1575 | 1576 | 1577 | 1578 | 1579 | 1580 |
| 1681 | 1682 | 1683 | 1684 | 1685 | 1686 | 1687 | 1688 | 1689 | 1690 |
| 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |

### Exercise 4

Read the numbers in the following table.

|      |      |      |      |      |      |      |      |      |      |
|------|------|------|------|------|------|------|------|------|------|
| 1111 | 1112 | 1113 | 1114 | 1115 | 1116 | 1117 | 1118 | 1119 | 1120 |
| 1121 | 1122 | 1123 | 1124 | 1125 | 1126 | 1127 | 1128 | 1129 | 1130 |
| 1131 | 1132 | 1133 | 1134 | 1135 | 1136 | 1137 | 1138 | 1139 | 1140 |
| 1141 | 1142 | 1143 | 1144 | 1145 | 1146 | 1147 | 1148 | 1149 | 1150 |
| 1151 | 1152 | 1153 | 1154 | 1155 | 1156 | 1157 | 1158 | 1159 | 1160 |
| 1161 | 1162 | 1163 | 1164 | 1165 | 1166 | 1167 | 1168 | 1169 | 1170 |
| 1171 | 1172 | 1173 | 1174 | 1175 | 1176 | 1177 | 1178 | 1179 | 1180 |
| 1181 | 1182 | 1183 | 1184 | 1185 | 1186 | 1187 | 1188 | 1189 | 1190 |
| 1191 | 1192 | 1193 | 1194 | 1195 | 1196 | 1197 | 1198 | 1199 | 1200 |

## Writing numbers in numerals and in words

Read the numbers in the following table.

| Number in numerals | Number in words        |
|--------------------|------------------------|
| 1000               | One thousand           |
| 1001               | One thousand and one   |
| 1002               | One thousand and two   |
| 1003               | One thousand and three |
| 1004               | One thousand and four  |
| 1005               | One thousand and five  |
| 1006               | One thousand and six   |
| 1007               | One thousand and seven |
| 1008               | One thousand and eight |
| 1009               | One thousand and nine  |
| 1010               | One thousand and ten   |

### Exercise 5

Write the following numbers in numerals.

| Number in numerals | Number in words                          |
|--------------------|------------------------------------------|
|                    | One thousand and eleven                  |
|                    | One thousand and twenty                  |
|                    | One thousand and thirty-six              |
|                    | Two thousand and four hundred            |
|                    | Two thousand, five hundred and forty-six |
|                    | Five thousand and seven hundred          |
|                    | Five thousand                            |



|  |                                         |
|--|-----------------------------------------|
|  | One thousand and seven                  |
|  | Six thousand and one                    |
|  | Seven thousand and nine                 |
|  | Seven thousand, nine hundred and ninety |

### Exercise 6

**Answer the following questions.**

1. Write the following numbers in words.

| Number in numerals | Number in words |
|--------------------|-----------------|
| 1012               |                 |
| 1030               |                 |
| 1038               |                 |
| 1900               |                 |
| 2000               |                 |
| 2301               |                 |
| 4006               |                 |
| 7070               |                 |
| 8011               |                 |
| 9009               |                 |

2. Fill in the blanks with numerals or words.

| Number in numerals | Number in words                 |
|--------------------|---------------------------------|
|                    | One thousand and fifty-two      |
| 1201               |                                 |
|                    | Two thousand                    |
| 3000               |                                 |
|                    | Four thousand and three hundred |

|      |                                       |
|------|---------------------------------------|
| 4506 |                                       |
|      | Five thousand, five hundred and fifty |
| 6000 |                                       |
|      | Six thousand and six hundred          |
| 7001 |                                       |
|      | Eight thousand and eighty             |
| 9010 |                                       |
|      | Nine thousand and seven hundred       |

### Exercise 7

**Answer the following questions.**

1. Write the following numbers in words.

| Number in numerals | Number in words |
|--------------------|-----------------|
| 1100               |                 |
| 1393               |                 |
| 7288               |                 |
| 3425               |                 |
| 4537               |                 |
| 7998               |                 |
| 9663               |                 |
| 8888               |                 |
| 9999               |                 |
| 6660               |                 |
| 3618               |                 |
| 2222               |                 |
| 9768               |                 |

| Number in numerals | Number in words |
|--------------------|-----------------|
| 7808               |                 |
| 3030               |                 |

2. Write the following numbers in numerals.

| Number in words                               | Number in numerals |
|-----------------------------------------------|--------------------|
| One thousand and ten                          |                    |
| Two thousand, one hundred and sixty           |                    |
| Three thousand, six hundred and eighteen      |                    |
| Four thousand, seven hundred and sixty-three  |                    |
| Five thousand, six hundred and eighty-three   |                    |
| Seven thousand                                |                    |
| Nine thousand, two hundred and thirty-five    |                    |
| Six thousand, one hundred and twenty-two      |                    |
| Nine thousand, nine hundred and seventy-three |                    |
| Eight thousand                                |                    |
| Eight thousand, eight hundred and ninety-two  |                    |
| Three thousand, five hundred and eighty-seven |                    |



## The place value of digits in whole numbers

The place value of a digit depends on its position in the number. The value increases from right to left. Therefore, the place value is identified by its position in the number.

- The first position from the right-hand side represents **ones**.
- The second position from the right-hand side represents **tens**.
- The third position from the right-hand side represents **hundreds**.
- The fourth position from the right-hand side represents **thousands**.

**Study examples 1–4 given below and then answer the questions that follow.**

### Example 1

Show the place value of each digit in number 1364.

1 is in thousands

3 is in hundreds

6 is in tens

4 is in ones

### Example 2

Show the place value of each digit in number 6948.

6 is in thousands

9 is in hundreds

4 is in tens

8 is in ones

### Example 3

Show the place value of each digit in number 7304.

7 is in thousands

3 is in hundreds

0 is in tens

4 is in ones

### Example 4

Show the place value of each digit in number 5463.

5463 = 5 thousands, 4 hundreds, 6 tens and 3 ones.

### Exercise 8

**Answer the following questions.**

1. Write the place value of each digit in number 9825.

- \_\_\_\_\_ in the tens position.
- \_\_\_\_\_ in the ones position.
- \_\_\_\_\_ in the thousands position.
- \_\_\_\_\_ in the hundreds position.

2. Write a number with the following place values:

- 2 hundreds, 9 ones, 3 thousands and 8 tens.

- b. 0 ones, 2 hundreds, 6 tens and 5 thousands.
- c. 6 tens, 6 thousands, 8 hundreds and 2 ones.
- d. 3 thousands, 4 tens, 8 hundreds and 7 ones.

3. Write the digits of each number in their place values.

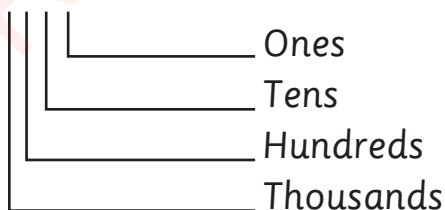
| Number | Place value |          |      |      |
|--------|-------------|----------|------|------|
|        | Thousands   | Hundreds | Tens | Ones |
| 1001   |             |          |      |      |
| 6666   |             |          |      |      |
| 4000   |             |          |      |      |
| 3339   |             |          |      |      |

The place value can also be shown as follows.

### Example

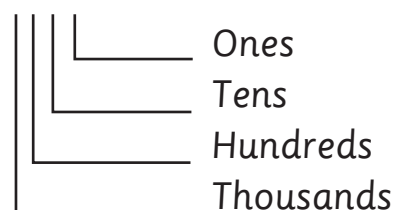
a. 4628

4628



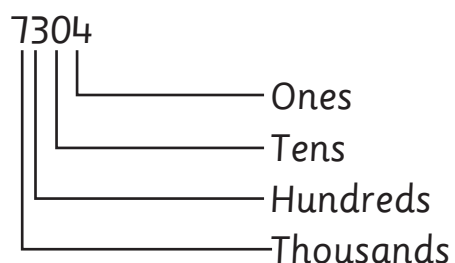
b. 3456

3456

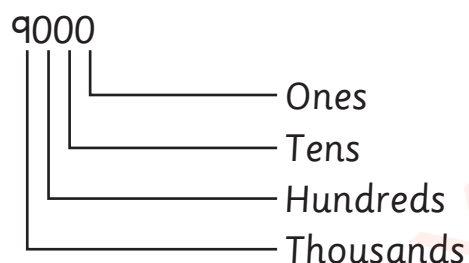




c. 7304



d. 9000



### Exercise 9

Answer the following questions.

1. Show the place value of each digit in the following numbers.

a. 6247

b. 5108

c. 7001

d. 4444

e. 3239

f. 2776

g. 1111

h. 8107

i. 9009

j. 9999

2. Write the place value of the shaded digits in the following numbers.

a. 1020

b. 2010

c. 1687

d. 7922

e. 8888

f. 1692

g. 5401

h. 9111

i. 3333

j. 2000

3. Fill in the blanks with the place values of the digits in the following numbers.

a. In the number 2968,  
2 is in \_\_\_\_\_, 9 is in \_\_\_\_\_,  
6 is in \_\_\_\_\_ and 8 is in \_\_\_\_\_.

b. In the number 9801  
9 is in \_\_\_\_\_, 8 is in \_\_\_\_\_,  
0 is in \_\_\_\_\_ and 1 is in \_\_\_\_\_.

c. In the number 7236  
7 is in \_\_\_\_\_, 2 is in \_\_\_\_\_,  
3 is in \_\_\_\_\_ and 6 is in \_\_\_\_\_.

d. In the number 5649  
5 is in \_\_\_\_\_, 6 is in \_\_\_\_\_,  
4 is in \_\_\_\_\_ and 9 is in \_\_\_\_\_.

4. Provide the number represented by the place values in the following table.

| Thousands | Hundreds | Tens | Ones | Number |
|-----------|----------|------|------|--------|
| 1         | 0        | 2    | 0    |        |
| 1         | 1        | 2    | 0    |        |
| 2         | 3        | 4    | 0    |        |
| 3         | 3        | 0    | 1    |        |
| 6         | 8        | 9    | 9    |        |
| 9         | 2        | 7    | 4    |        |
| 2         | 9        | 7    | 3    |        |
| 8         | 1        | 2    | 2    |        |
| 7         | 1        | 7    | 3    |        |
| 1         | 2        | 7    | 7    |        |
| 7         | 2        | 9    | 1    |        |
| 1         | 0        | 0    | 0    |        |
| 2         | 3        | 1    | 1    |        |

**Example**

5643 shows \_\_\_\_\_ thousands, \_\_\_\_\_ hundreds, \_\_\_\_\_ tens and \_\_\_\_\_ ones.

In the number 5643, there are 5 thousands, 6 hundreds, 4 tens and 3 ones.

**Exercise 10****A. Fill in the blanks.**

1. 1872 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
2. 2663 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
3. 4793 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
4. 5187 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
5. 4002 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
6. 1562 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
7. 7371 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
8. 4572 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
9. 3421 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
10. 2012 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
11. 6682 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
12. 5583 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.



13. 5234 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.

14. 2709 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.

15. 5235 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.

16. 9123 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.

17. 3410 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.

**B. Write the digit which is in the thousands place in the following numbers:**

1. 7682

2. 9501

3. 8106

4. 6412

**C. Write the place value of 3 in:**

1. 436

2. 3900

3. 2843

4. 2301

**D. Underline the digit which is in the hundreds place in the following numbers:**

1. 269

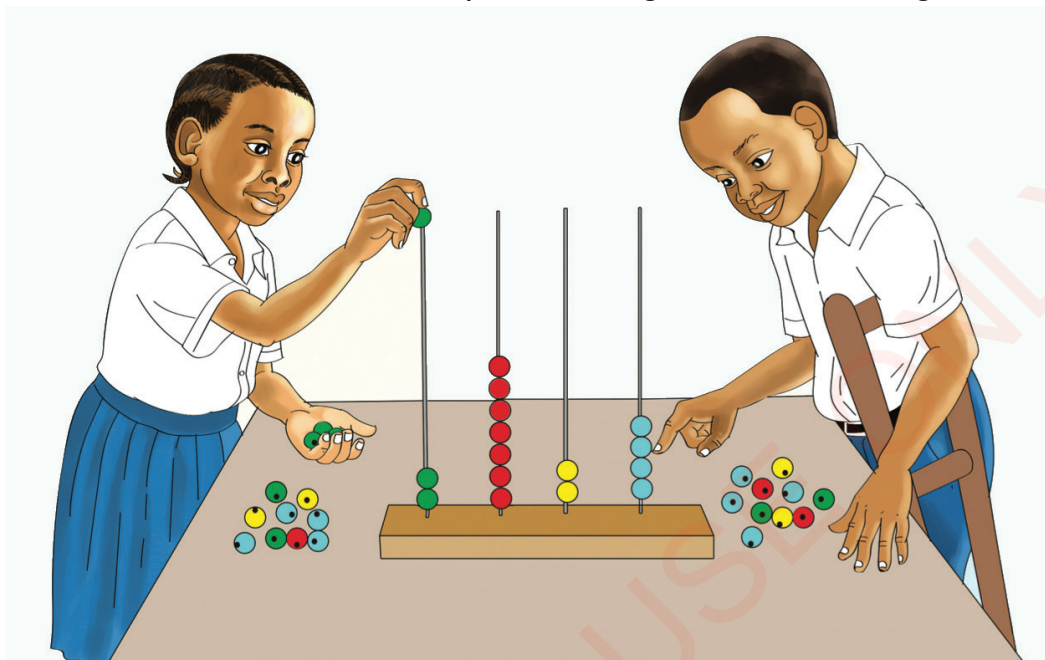
2. 7901

3. 3749

4. 9568

## Expressing the place value of digits in a number using an abacus

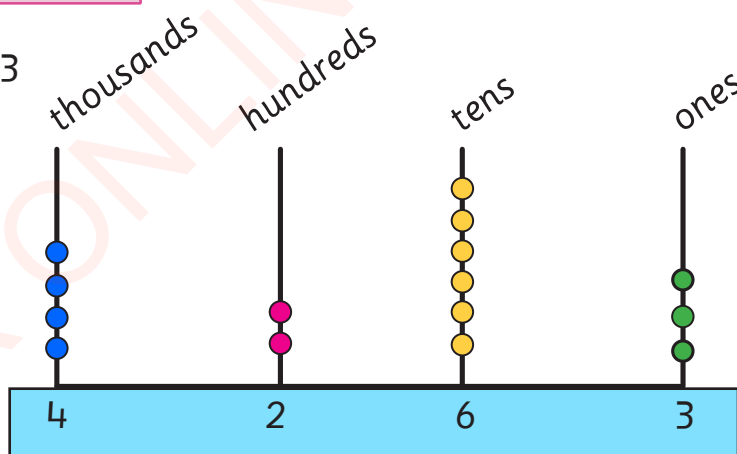
Every digit in a number has a place value. You can represent ones, tens, hundreds and thousands places using abacus drawings.



Carefully study the diagrams presented in a, b and c.

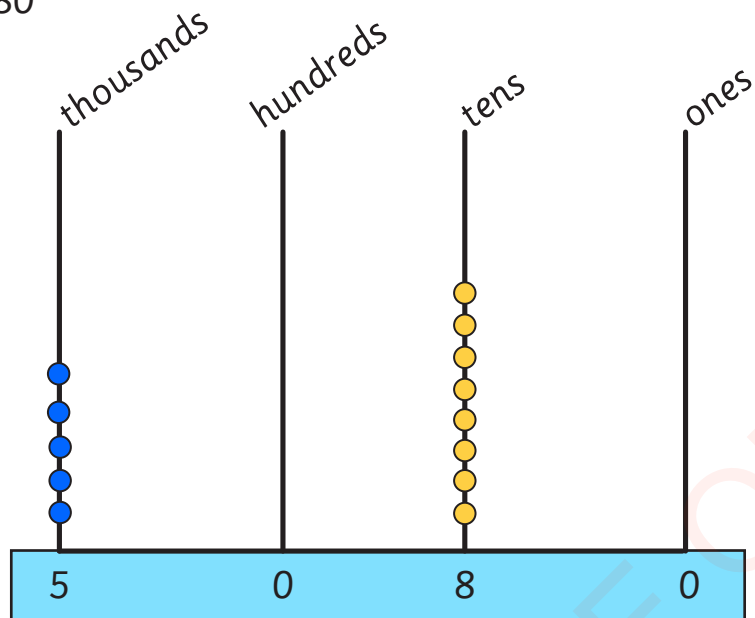
### Example

a. 4263



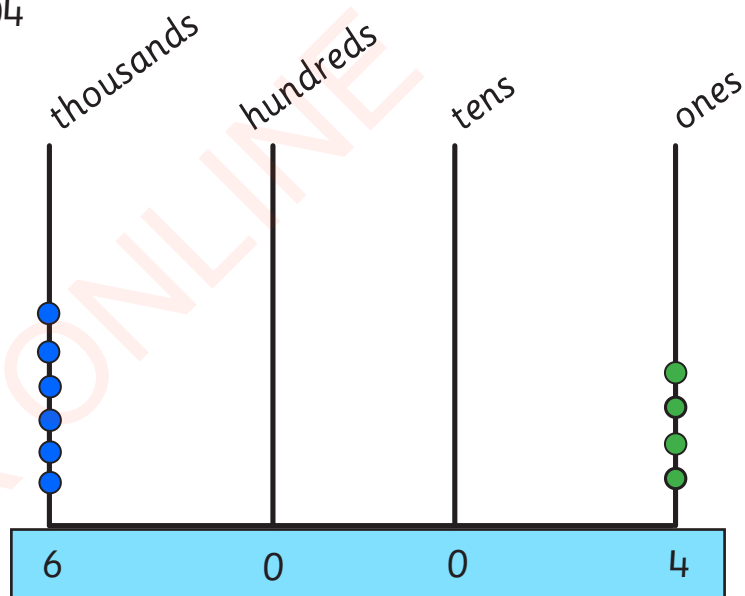
The diagram shows that there are 4 thousands, 2 hundreds, 6 tens and 3 ones.

b. 5080



The diagram above shows that there are 5 thousands, 0 hundreds, 8 tens and 0 ones in number 5080.

c. 6004

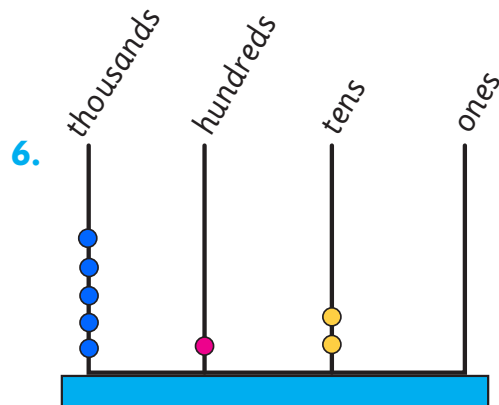
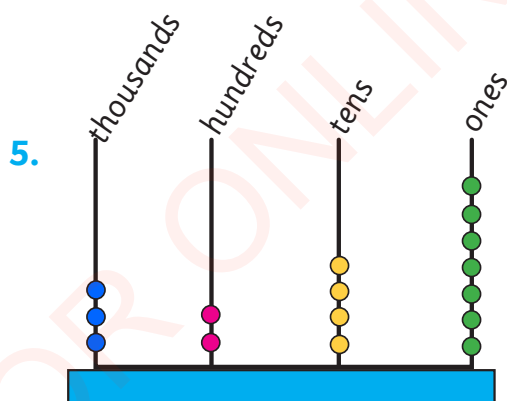
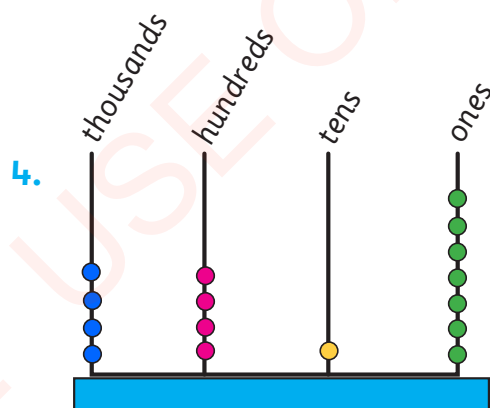
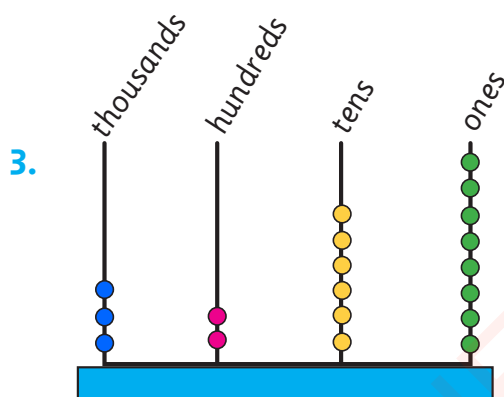
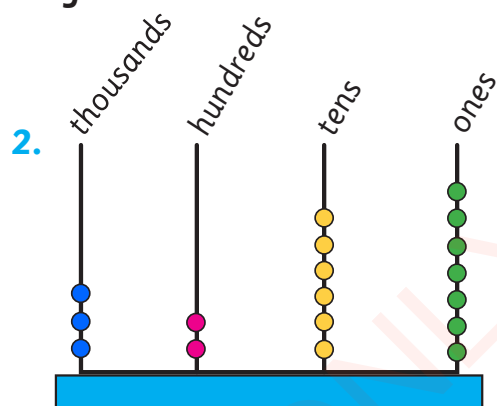
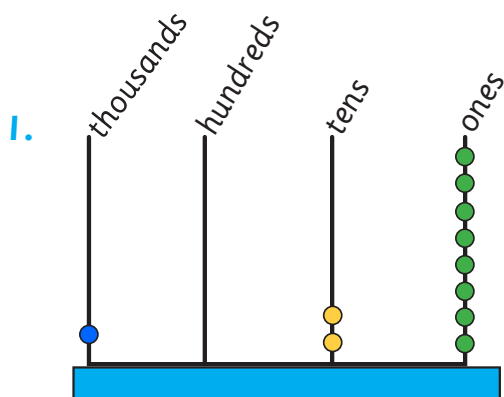


The diagram above shows that there are 6 thousands, 0 hundreds, 0 tens and 4 ones in number 6004.



## Exercise 11

Write the numbers represented in diagrams 1– 6 below.



Represent the numbers in questions 7 and 8 below using abacus drawings.

7. 4279

8. 582

**Expressing numbers in expanded form**

When a number is written in short form, it can be expanded. This is done by considering the place values of its digits.

**Writing a number in expanded form****Example**

- a.  $9732 = 9000 + 700 + 30 + 2$
- b.  $5080 = 5000 + 000 + 80 + 0$
- c.  $4000 = 4000 + 000 + 00 + 0$
- d.  $3334 = 3000 + 300 + 30 + 4$

**Exercise 12**

**Answer the following questions.**

Write the following numbers in expanded form.

- a.  $9770 =$
- b.  $3891 =$
- c.  $1654 =$
- d.  $4200 =$
- e.  $2901 =$
- f.  $8543 =$

**Writing numbers in short form****Example**

- a.  $4000 + 500 + 30 + 1 = 4531$
- b.  $8000 + 300 + 20 + 9 = 8329$
- c.  $4000 + 800 + 40 + 2 = 4842$

**Exercise 13**

Write the following numbers in short form.

- a.  $9000 + 800 + 70 + 2 =$
- b.  $8000 + 800 + 80 + 0 =$
- c.  $9000 + 700 + 00 + 2 =$
- d.  $5000 + 000 + 00 + 1 =$
- e.  $1000 + 000 + 00 + 6 =$

**Revision exercise**

**Answer the following questions.**

1. Write the number with the following place values.
  - a. Six thousands, three hundreds, one tens and one ones  
\_\_\_\_\_
  - b. Nine thousands, nine hundreds, eight tens and zero ones  
\_\_\_\_\_
  - c. Eight thousands, eight hundreds, six tens and three ones  
\_\_\_\_\_
  - d. Seven thousands, eight hundreds, four tens and two ones  
\_\_\_\_\_
  - e. Five thousands, five hundreds, seven tens and zero ones  
\_\_\_\_\_
2. Write the following numbers in short form.
  - a.  $8000 + 400 + 60 + 5 =$
  - b.  $9000 + 900 + 90 + 9 =$
  - c.  $2000 + 300 + 40 + 6 =$
  - d.  $1000 + 200 + 00 + 1 =$
  - e.  $5000 + 600 + 50 + 8 =$



- 3.** Fill in the blanks with the digits corresponding to the given place values.
- a.** 1252 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
  - b.** 7536 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
  - c.** 1912 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
  - d.** 9909 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
  - e.** 6537 has \_\_\_ thousands, \_\_\_ hundreds, \_\_\_ tens and \_\_\_ ones.
- 4.** Write the following numbers in numerals.
- a.** Three thousand, five hundred and eighty-seven = \_\_\_\_\_
  - b.** Two thousand, two hundred and ninety-three = \_\_\_\_\_
  - c.** Six thousand = \_\_\_\_\_
  - d.** Six thousand, four hundred and sixty-four = \_\_\_\_\_
  - e.** Nine thousand = \_\_\_\_\_
- 5.** Write the following numbers in words.
- a.** 9082 = \_\_\_\_\_
  - b.** 7639 = \_\_\_\_\_
  - c.** 1728 = \_\_\_\_\_
  - d.** 8671 = \_\_\_\_\_
  - e.** 6606 = \_\_\_\_\_
- 6.** Write the following numbers in expanded form.
- a.** 7889 = \_\_\_\_\_
  - b.** 2043 = \_\_\_\_\_
  - c.** 8075 = \_\_\_\_\_
  - d.** 9690 = \_\_\_\_\_
  - e.** 3245 = \_\_\_\_\_

## Summary

1. There are ten digits, which are 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9.
2. A number can be written in two ways, either in numerals or in words.
3. Numerals are formed by digits, while words are written using letters of the alphabet.
4. In reading numbers, start by mentioning the value of the digit with the highest place value. For example, 9000 is read as "nine thousand" and "not thousand nine".
5. In reading numbers, consider the position of a number and its place value.

**Example 1** 9082 is read as nine thousand and eighty-two.

**Example 2** 7890 is read as seven thousand, eight hundred and ninety.

**Example 3** 5336 is read as five thousand, three hundred and thirty-six.

## Vocabulary

**Digits** are the ten numbers, which are 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9

**Numeral** a number written using one or more digit(s)

## Chapter Two

### Number patterns

In the previous chapter, you learnt counting, reading and writing numbers. In this chapter, you will learn how to arrange numbers (number patterns). In order for you to understand number patterns, you must start by learning the arrangements of different objects.

#### Arrangement of objects

##### Example

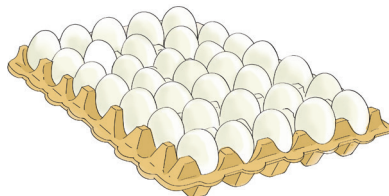
- a. Arrangement of maize grains on the cob.



- b. Arrangement of desks, tables and chairs in a classroom.

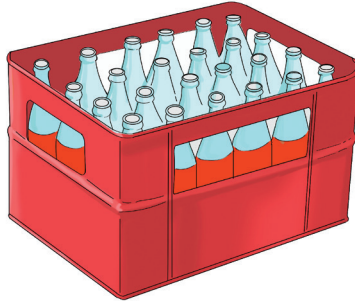


- c. Arrangement of eggs on a tray.





d. Arrangement of bottles of soda in a crate.



### Question

Mention three objects that appear in a specific arrangement.

## Number patterns

Study carefully the following examples.

### Example 1

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12

The number pattern is increasing from 1 to 12. Each number after the first is obtained by adding 1 to the preceding number.

### Example 2

15, 14, 13, 12, 11, 10, 9, 8, 7, 6, 5, 4, 3, 2, 1

The number pattern is decreasing from 15 to 1. Each number, after the first, is obtained by subtracting 1 from the preceding number.

### Example 3

1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3, 1, 2, 3

The number pattern is repetitive. The three digits 1, 2 and 3 are repeated 6 times.

### Exercise I

**Provide the missing numbers in each of the following number patterns.**

1. 1, \_\_\_\_\_, 3, 4, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 8
2. 6, 5, \_\_\_\_\_, \_\_\_\_\_, 2, 1
3. 15, 14, 13, \_\_\_\_\_, \_\_\_\_\_, 10, 9
4. 14, 15, 16, \_\_\_\_\_, \_\_\_\_\_, 19, \_\_\_\_\_, 21
5. 10, 11, 10, 11, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 10, 11

**Identify increasing, decreasing and repetitive patterns in each of the following numbers.**

6. 25, 26, 27, 28, 29, 30
7. 50, 51, 52, 50, 51, 52, 50, 51, 52, 50, 51, 52
8. 10, 9, 8, 7, 6, 5, 4, 3, 2, 1
9. 90, 89, 88, 87, 86, 85, 84, 83, 82, 81
10. 73, 74, 75, 76, 77, 78
11. 800, 900, 1000, 1100, 1200
12. 41, 42, 43, 44, 45, 46, 47
13. 10, 20, 30, 10, 20, 30, 10, 20, 30, 10, 20, 30, 10, 20, 30
14. 65, 66, 67, 68, 69
15. 5, 4, 5, 4, 5, 4, 5, 4, 5, 4, 5, 4, 5, 4, 5, 4, 5, 4, 5, 4

## Number patterns by steps

Study the patterns of numbers in Examples 1 to 3.

### Example 1

1, 3, 5, 7, 9, 11, 13, 15, 17, 19

This pattern shows that the numbers are increasing by 2 in each step.

### Example 2

10, 20, 30, 40, 50, 60, 70

This pattern shows that the numbers are increasing by 10 in each step.

### Example 3

30, 25, 20, 15, 10, 5

This pattern shows that the numbers are decreasing by 5 in each step.

### Exercise 2

**Provide the missing numbers.**

1. 2, 4, 6, \_\_\_\_\_, 10
2. 1, 2, 1, 2, \_\_\_\_\_, 2, 1, \_\_\_\_\_, 1, \_\_\_\_\_, \_\_\_\_\_, 2
3. 40, 80, \_\_\_\_\_, 160
4. 1, 0, 0, 1, 0, \_\_\_\_\_, 1, 0, \_\_\_\_\_, 1
5. 32, \_\_\_\_\_, 24, 20, \_\_\_\_\_, 12
6. 5, \_\_\_\_\_, 15, \_\_\_\_\_, 25, \_\_\_\_\_, 35, \_\_\_\_\_



7. 1, 4, \_\_\_\_\_, 10, 13, 16, \_\_\_\_\_, \_\_\_\_\_

8. 15, 15, \_\_\_\_\_, 15, \_\_\_\_\_

9. 3, 6, 9, \_\_\_\_\_, \_\_\_\_\_, 18

10. 12, \_\_\_\_\_, 16, \_\_\_\_\_, 20, 22, 24

**Arrange the following numbers in ascending order.**

11. 10, 90, 80, 20, 40, 30, 70, 60, 50

12. 480, 80, 240, 160, 400, 320

13. 36, 12, 48, 24, 72, 60

14. 3, 12, 15, 6, 9

**Arrange the following numbers in a descending order.**

15. 32, 40, 8, 16, 48, 24

16. 8000, 2000, 1000, 3000, 4000, 5000, 6000, 7000

17. 16, 12, 4, 8, 20, 24, 28

18. 30, 2, 16, 12, 20, 18, 24, 20, 4, 10, 14, 22, 26, 6, 8, 28

### Revision exercise

**Answer the following questions.**

1. Arrange the following numbers in ascending order.

a. 7, 3, 12, 20, 4, 1, 15, 5, 18

b. 22, 42, 13, 27, 6, 33, 30

c. 122, 56, 99, 800, 39, 8, 202

2. Arrange the following numbers in descending order.

a. 125, 78, 111, 89, 305, 32, 120

b. 200, 903, 730, 341, 81, 199

c. 2500, 1200, 5000, 3300

3. Write the numbers that follow in each of the following patterns.
- a. 465, 466, 467, \_\_\_\_\_, \_\_\_\_\_
  - b. 999, 1000, 1001, \_\_\_\_\_, \_\_\_\_\_
  - c. 9995, 9996, 9997, \_\_\_\_\_, \_\_\_\_\_
4. Provide the missing numbers in each of the following number patterns.
- a. 1120, 1121, \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, 1125
  - b. 500, 600, \_\_\_\_\_, \_\_\_\_\_, 900, \_\_\_\_\_
  - c. 993, 990, \_\_\_\_\_, \_\_\_\_\_, 981
5. Mention five objects that are in patterns.

### Summary

The knowledge of number patterns enables us to do different activities, such as arranging objects or items. For example, it enables us to arrange eggs on a tray, clothes in a wardrobe and cups and plates in a kitchen cabinet.

### Vocabulary

|                         |                                                        |
|-------------------------|--------------------------------------------------------|
| <b>Decreasing order</b> | numbers arranged from the largest to the smallest      |
| <b>Increasing order</b> | numbers arranged from the smallest to the largest      |
| <b>Pattern</b>          | is a particular arrangement of objects or numbers      |
| <b>Wardrobe</b>         | a tall cupboard in which clothes may be hung or stored |

## Chapter Three

### Operations with numbers

When you were in Standard Two, you learnt addition and subtraction of numbers. In this chapter, you will learn the same operations, as well as the operation of multiplication of numbers.

#### Addition

##### Exercise 1 Revision

Answer the following questions.

1.  $114 + 320 =$

2.  $126 + 12 =$

3.  $336 + 118 =$

4.  $69 + 18 + 2 =$

5.  $671 + 12 =$

6.  $66 + 21 =$

7. 
$$\begin{array}{r} 78 \\ + 11 \\ \hline \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 112 \\ + 99 \\ \hline \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 618 \\ + 132 \\ \hline \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 128 \\ + 112 \\ \hline \\ \hline \end{array}$$

11. 
$$\begin{array}{r} 238 \\ + 133 \\ \hline \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 177 \\ + 31 \\ \hline \\ \hline \end{array}$$



## Adding without regrouping

There are two ways of adding numbers, horizontal and vertical addition.

### Adding numbers horizontally

#### Example 1

$$2411 + 136 =$$

#### Steps

1. Add the ones and write the answer in the ones position.
2. Add the tens and write the answer in the tens position.
3. Add the hundreds and write the answer in the hundreds position.
4. Add the thousands and write the answer in the thousands position.

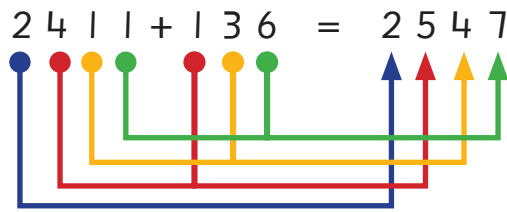
For easy addition, arrange the numbers according to their place values.

**2411**     1 – ones  
          1 – tens  
          4 – hundreds  
          2 – thousands

The second number is arranged the same way as the first number.

**136**     6 – ones  
          3 – tens  
          1 – hundreds

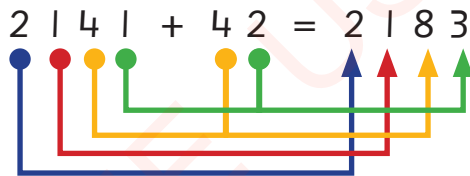
$$2411 + 136 =$$



Therefore,  $2411 + 136 = 2547$ .

### Example 2

$$2141 + 42 =$$



Therefore,  $2141 + 42 = 2183$ .

### Example 3

$$3246 + 2312 =$$



Therefore,  $3246 + 2312 = 5558$ .

**Exercise 2****Add the following numbers horizontally.**

1.  $1418 + 2361 =$

11.  $4111 + 341 =$

2.  $8602 + 1284 =$

12.  $3624 + 162 =$

3.  $6361 + 1207 =$

13.  $3321 + 370 =$

4.  $2781 + 112 =$

14.  $2016 + 2161 =$

5.  $4561 + 17 =$

15.  $2031 + 221 =$

6.  $705 + 1261 =$

16.  $3461 + 21 =$

7.  $7861 + 2134 =$

17.  $6138 + 1 =$

8.  $6941 + 2023 =$

18.  $4333 + 46 =$

9.  $9111 + 888 =$

19.  $8216 + 1461 =$

10.  $2116 + 203 =$

20.  $7312 + 1212 =$

**Adding numbers vertically****Example 1**

$$\begin{array}{r} 6118 \\ + 1211 \\ \hline 7329 \end{array}$$

**Steps**

1. Arrange vertically the digits of the two numbers which are to be added according to the ones, tens, hundreds and thousands.



2. Add the ones first and then write the sum in the position of ones.
3. Add the tens and then write the sum in the position of tens.
4. Add the hundreds and then write the sum in the position of hundreds.
5. Add the thousands and then write the sum in the position of thousands.

### Example 2

$$\begin{array}{r} 2792 \\ + 1203 \\ \hline 3995 \end{array}$$

### Example 3

$$\begin{array}{r} 4320 \\ + 1354 \\ \hline 5674 \end{array}$$

### Exercise 3

Answer the following questions.

1. 
$$\begin{array}{r} 6117 \\ + 2141 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 596 \\ + 3102 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 6322 \\ + 27 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 2132 \\ + 346 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 4612 \\ + 1321 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 5621 \\ + 1032 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 3592 \\ + 401 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 2363 \\ + 2111 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 2227 \\ + 12 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 1329 \\ + 4000 \\ \hline \end{array}$$

11. 
$$\begin{array}{r} 1060 \\ + 2134 \\ \hline \end{array}$$

12. 
$$\begin{array}{r} 3030 \\ + 2526 \\ \hline \end{array}$$

13. 
$$\begin{array}{r} 4632 \\ + 1152 \\ \hline \end{array}$$

14. 
$$\begin{array}{r} 90 \\ + 1306 \\ \hline \end{array}$$

15. 
$$\begin{array}{r} 4367 \\ + 2412 \\ \hline \end{array}$$

16. 
$$\begin{array}{r} 3291 \\ + 302 \\ \hline \end{array}$$

17. 
$$\begin{array}{r} 6002 \\ + 136 \\ \hline \end{array}$$

18. 
$$\begin{array}{r} 2670 \\ + 1028 \\ \hline \end{array}$$

19. 
$$\begin{array}{r} 91 \\ + 1008 \\ \hline \end{array}$$

20. 
$$\begin{array}{r} 4350 \\ + 5646 \\ \hline \end{array}$$

## Adding numbers by regrouping to get sums not exceeding 9999

Adding numbers by grouping can also be done horizontally and vertically.

### Adding numbers horizontally by regrouping

Study Examples 1 to 4.

#### Example 1

$$2916 + 564 =$$

$$2916 + 564 = 3480$$



#### Steps

1. Add **ones**,  $6 + 4 = 10$  you get 1 tens and 0 ones. Write 0 in the ones position and carry over 1 in the tens position.
2. Add **tens**,  $1 + 1 + 6 = 8$  (1 tens from the first step add with 1 tens and 6 tens you get 8 tens). Then write 8 in the tens position.
3. Add **hundreds**,  $9 + 5 = 14$  (9 hundreds plus 5 hundreds you get 1 thousands and 4 hundreds). Then write 4 in the hundreds position and carry over 1 to the thousands position.
4. Add **thousands**,  $1 + 2 + 0 = 3$  (1 thousands from the third step added to 2 thousands and 0 thousands you get 3 thousands).

Therefore,  $2916 + 564 = 3480$ .

Use Example 1 to study the answers of Examples 2, 3 and 4.

#### Example 2

$$7286 + 564 = 7850$$





### Example 3

$$6327 + 3496 = 9823$$



### Example 4

$$8326 + 169 = 8495$$



### Exercise 4

Answer the following questions.

1.  $7256 + 1796 =$

9.  $3262 + 789 =$

2.  $8595 + 914 =$

10.  $7531 + 1929 =$

3.  $2643 + 993 =$

11.  $3598 + 179 =$

4.  $768 + 7861 =$

12.  $4513 + 3299 =$

5.  $7536 + 19 =$

13.  $9220 + 389 =$

6.  $4951 + 1891 =$

14.  $2619 + 1786 =$

7.  $7816 + 1832 =$

15.  $1745 + 899 =$

8.  $7576 + 817 =$

16.  $1652 + 476 =$

## Adding numbers vertically by regrouping

The difference between adding numbers horizontally and vertically is in how numbers are arranged. Steps of adding numbers vertically are the same as those of adding numbers horizontally.

Study carefully the following examples and then answer the questions in Exercise 5.

### Example 1

$$\begin{array}{r} 2361 \\ + 3899 \\ \hline 6260 \end{array}$$

#### Steps

|                                                                                                                  |                                                                                |
|------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| 1. Arrange all the numbers vertically by considering the place value of each digit.                              | $\begin{array}{r} 2361 \\ + 3899 \\ \hline \end{array}$                        |
| 2. Add ones, $1 + 9 = 10$ . Write 0 to the ones position and carry over 1 to the tens position.                  | $\begin{array}{r} \phantom{1} \\ 2361 \\ + 3899 \\ \hline 0 \end{array}$       |
| 3. Add tens, $1 + 6 + 9 = 16$ . Write 6 to the tens position and carry over 1 to the hundreds position.          | $\begin{array}{r} \phantom{11} \\ 2361 \\ + 3899 \\ \hline 60 \end{array}$     |
| 4. Add hundreds, $1 + 3 + 8 = 12$ . Write 2 to the hundreds position and carry over 1 to the thousands position. | $\begin{array}{r} \phantom{111} \\ 2361 \\ + 3899 \\ \hline 260 \end{array}$   |
| 5. Add thousands, $1 + 2 + 3 = 6$ . Then write 6 to the thousands position.                                      | $\begin{array}{r} \phantom{1111} \\ 2361 \\ + 3899 \\ \hline 6260 \end{array}$ |

Use the steps from **Example 1** to study the answers of Examples 2 and 3.

### Example 2

$$\begin{array}{r} 7286 \\ + 1329 \\ \hline 8615 \end{array}$$

### Example 3

$$\begin{array}{r} 5784 \\ + 326 \\ \hline 6110 \end{array}$$

### Exercise 5

Answer the following questions.

1. 
$$\begin{array}{r} 2139 \\ + 218 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 5327 \\ + 1395 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 6413 \\ + 2194 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 5012 \\ + 999 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 7603 \\ + 2209 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 6532 \\ + 876 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 16 \\ + 3269 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 9176 \\ + 291 \\ \hline \end{array}$$

9. 
$$\begin{array}{r} 936 \\ + 2999 \\ \hline \end{array}$$

10. 
$$\begin{array}{r} 8432 \\ + 193 \\ \hline \end{array}$$



$$\begin{array}{r} 11. \quad 7241 \\ + 1479 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 4761 \\ + 1849 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 1999 \\ + 3045 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 6027 \\ + 1784 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 3604 \\ + 1398 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 7617 \\ + 1932 \\ \hline \\ \hline \end{array}$$

## Word problems involving addition

### Example

The number of cows in Meatu District is 5200 and the number of goats is 2986. What is the total number of the animals?

### Solution

$$\begin{array}{r} \text{Cows} \quad 5200 \\ \text{Goats} \quad + 2986 \\ \hline 8186 \end{array}$$

The total number of the animals is 8186.

### Exercise 6

**Answer the following questions.**

1. A lorry carried 2724 pieces of timber on the first day and 2428 pieces of timber on the second day. How many pieces of timber did the lorry carry in the two days?
2. A head teacher bought 4563 pieces of chalk and the deputy head teacher bought 3718 pieces of chalk. How many pieces of chalk were bought in total?
3. 4618 malaria patients and 681 eye patients were treated at Temeke Hospital. How many patients were treated in total?
4. Tanga Region has 1982 timber trees and 7291 fruit trees. How many trees does the region have in total?
5. One company printed 5900 books and another company printed 3600 books. How many books were printed by the two companies in total?
6. Asha collected 6731 bottle tops and Bakari collected 2118 bottle tops. How many bottle tops did they collect altogether?
7. Chamazi Primary School has 6518 pupils and Saku Primary School has 2678 pupils. How many pupils do they have altogether?
8. Tatu harvested 2338 oranges and Joseph harvested 6600 oranges. How many oranges in total did they harvest?
9. Mr. Juma harvested 5630 mangoes from one tree, and then harvested 480 mangoes from another tree. What is the total number of the mangoes harvested?
10. A bus carried two baskets of oranges. If the first basket contained 2376 oranges and the second basket 4638 oranges. How many oranges in total were there in the baskets?

## Subtraction

### Exercise 7 Revision

Answer the following questions.

$$\begin{array}{r} 1. \quad 87 \\ - 6 \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 153 \\ - 47 \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 242 \\ - 155 \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 837 \\ - 828 \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 107 \\ - 19 \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 215 \\ - 8 \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 237 \\ - 4 \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 316 \\ - 182 \\ \hline \end{array}$$

$$9. \quad 887 - 499 =$$

$$10. \quad 372 - 283 =$$

$$11. \quad 570 - 238 =$$

$$12. \quad 93 - 51 =$$

13. Salma went to the market, carrying seventy-five eggs. On the way, she sold thirty-seven eggs to John. How many eggs remained before she arrived at the market?
14. A shop had eight hundred and forty-five kilograms of sugar. After some sugar had been sold, two hundred and eighty-seven kilograms remained. How many kilograms were sold?
15. A farmer has seven hundred and eighty-four chickens, of which two hundred and six are cocks. How many chickens are hens?



## Subtracting numbers not exceeding 9999

### Subtracting numbers horizontally

When subtracting numbers horizontally, consider the steps in the following examples.

#### Example 1

$$6874 - 2430 =$$

$$6874 - 2430 = 4444$$

#### Steps

1. Subtract ones from ones,  $4 - 0 = 4$ .
2. Subtract tens from tens,  $7 - 3 = 4$ .
3. Subtract hundreds from hundreds,  $8 - 4 = 4$ .
4. Subtract thousands from thousands,  $6 - 2 = 4$ .

Therefore,  $6874 - 2430 = 4444$ .

#### Example 2

$$6781 - 1041 =$$

$$6781 - 1041 = 5740$$

#### Steps

1. Subtract ones from ones,  $1 - 1 = 0$ .
2. Subtract tens, from tens,  $8 - 4 = 4$ .
3. Subtract hundreds from hundreds,  $7 - 0 = 7$ .
4. Subtract thousands from thousands,  $6 - 1 = 5$ .

Therefore,  $6781 - 1041 = 5740$ .

### Exercise 8

Answer the following questions.

1.  $9942 - 42 =$

2.  $2374 - 232 =$

3.  $4376 - 3245 =$

4.  $3245 - 2134 =$

5.  $5676 - 4343 =$

6.  $4603 - 1502 =$

7.  $1889 - 1788 =$

8.  $5482 - 3271 =$

9.  $5479 - 3468 =$

10.  $3760 - 2550 =$

11.  $3614 - 2513 =$

12.  $3049 - 2017 =$

13.  $4879 - 1758 =$

14.  $8973 - 7642 =$

15.  $9723 - 9713 =$

16.  $4256 - 3132 =$

17.  $8766 - 4243 =$

18.  $4780 - 440 =$

19.  $4897 - 1725 =$

20.  $5698 - 1577 =$

### Subtracting numbers vertically

Subtracting ones from ones, tens from tens, hundreds from hundreds and thousands from thousands.

#### Example 1

$$\begin{array}{r} 9854 \\ - 8743 \\ \hline 1111 \end{array}$$

#### Example 2

$$\begin{array}{r} 9700 \\ - 200 \\ \hline 9500 \end{array}$$

### Exercise 9

Answer the following questions.

$$\begin{array}{r} 1. \quad 7824 \\ - 5612 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad 4851 \\ - 3720 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 4343 \\ - 3231 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 8899 \\ - 8768 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 6533 \\ - 6322 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 7291 \\ - 3231 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 1324 \\ - 1213 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 8871 \\ - 4760 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad 2017 \\ - 12 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 9789 \\ - 5 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 4254 \\ - 3142 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 3752 \\ - 2341 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 6666 \\ - 2345 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 3816 \\ - 2614 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 2556 \\ - 2443 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad 7777 \\ - 4376 \\ \hline \\ \hline \end{array}$$



**Subtracting numbers horizontally by regrouping****Example**

$$5371 - 3282 =$$

**Step 1**

Start by subtracting ones,  $1 - 2$  which is insufficient. Then, take 1 tens from 7 tens and group it as 10 ones. Then, regroup 10 ones with the original 1 ones to get 11 ones. Then, subtract 2 from 11 ones ( $11 - 2 = 9$ ) and write 9 in the ones position.

**Step 2**

In the 7 tens you are left with 6 tens. Subtracting  $6 - 8$  is insufficient. Then, take 1 hundreds from 3 hundreds, group it as 10 tens and regroup it with 6 tens to get 16 tens. Subtract 8 tens from 16 tens ( $16 - 8 = 8$ ), and then write 8 in the tens position.

**Step 3**

In the 3 hundreds you are left with 2 hundreds. Subtract hundreds,  $2 - 2 = 0$ , and write 0 in the hundreds position.

**Step 4**

Subtract thousands,  $5 - 3 = 2$ , and then write 2 in the thousands position.

Therefore,  $5371 - 3282 = 2089$ .

### Exercise 10

Answer the following questions.

1.  $3244 - 2126 =$
2.  $4105 - 2116 =$
3.  $7613 - 1804 =$
4.  $2473 - 1475 =$
5.  $6566 - 2857 =$
6.  $8223 - 5843 =$
7.  $7003 - 1918 =$
8.  $4090 - 2291 =$
9.  $2336 - 2148 =$
10.  $4619 - 2817 =$
11.  $7100 - 4291 =$
12.  $6721 - 6667 =$
13.  $6816 - 5824 =$
14.  $4133 - 2145 =$
15.  $8004 - 3006 =$
16.  $9026 - 3146 =$
17.  $7761 - 3872 =$
18.  $3465 - 1456 =$
19.  $5465 - 5289 =$
20.  $6678 - 1877 =$

Subtracting numbers vertically by regrouping

#### Example

$$\begin{array}{r} 6854 \\ 3887 \\ - 296 \\ \hline \end{array}$$

### Steps

|                                                                                                                                                                                                                                                  |                                                                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| 1. Start by subtracting ones, $4 - 7$ which is insufficient. If you take 1 tens (which is equal to 10 ones) from 5 tens, 4 tens remain. Add ones, $10 + 4 = 14$ . Subtract $14 - 7 = 7$ . Then, write 7 in the ones position.                    | $\begin{array}{r} \phantom{6}8\cancel{5}4 \\ - 3887 \\ \hline \phantom{6}8\phantom{5}7 \end{array}$   |
| 2. Subtract tens, $4 - 8$ which is insufficient. If you take 1 hundreds (which is equal to 10 tens) from 8 hundreds, 7 hundreds remain. Add tens, $10 + 4 = 14$ . Subtract $14 - 8 = 6$ . Then, write 6 in the tens position.                    | $\begin{array}{r} \phantom{6}8\cancel{5}4 \\ - 3887 \\ \hline \phantom{6}7\phantom{5}67 \end{array}$  |
| 3. Subtract hundreds, $7 - 8$ which is insufficient. If you take 1 thousands (which is equal to 10 hundreds) from 6 thousands, 5 thousands remain. Add hundreds, $10 + 7 = 17$ . Subtract $17 - 8 = 9$ . Then, write 9 in the hundreds position. | $\begin{array}{r} \phantom{6}8\cancel{5}4 \\ - 3887 \\ \hline \phantom{6}5\phantom{8}967 \end{array}$ |
| 4. Subtract thousands, $5 - 3 = 2$ . Then, write 2 in the thousands position.                                                                                                                                                                    | $\begin{array}{r} \phantom{6}8\cancel{5}4 \\ - 3887 \\ \hline 2\phantom{8}967 \end{array}$            |

### Exercise 11

Answer the following questions.

1. 
$$\begin{array}{r} 2736 \\ - \phantom{00}7 \\ \hline \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 3822 \\ - 1713 \\ \hline \\ \hline \end{array}$$



$$\begin{array}{r} 3. \quad 1236 \\ - 238 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad 1245 \\ - 158 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad 6734 \\ - 3856 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad 4538 \\ - 3439 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad 4502 \\ - 1494 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad 2083 \\ - 1976 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad 6710 \\ - 3803 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad 3005 \\ - 1992 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad 5813 \\ - 3904 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad 8433 \\ - 6377 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad 7153 \\ - 5444 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad 6552 \\ - 2323 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad 7400 \\ - 4307 \\ \hline \\ \hline \end{array}$$

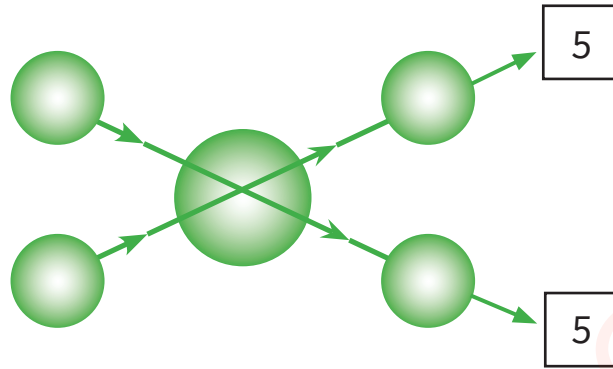
$$\begin{array}{r} 16. \quad 2656 \\ - 2567 \\ \hline \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad 5664 \\ - 3789 \\ \hline \\ \hline \end{array}$$

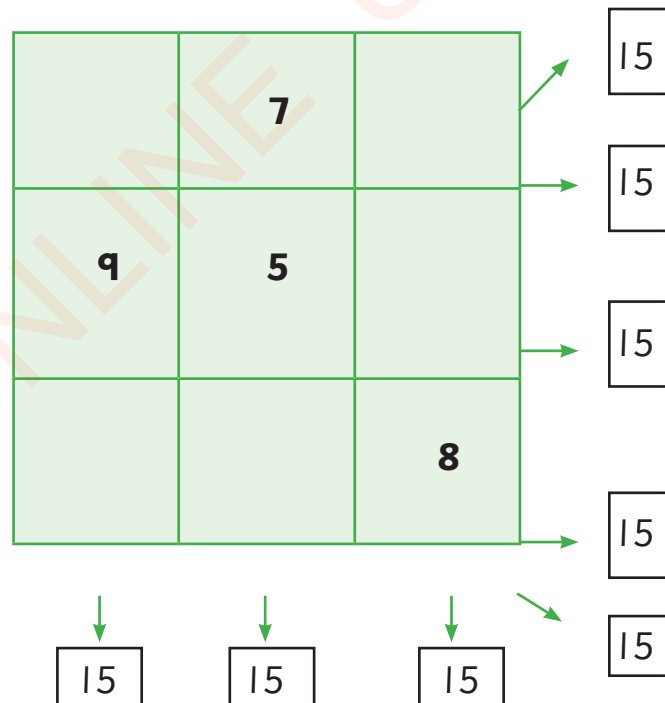
$$\begin{array}{r} 18. \quad 8156 \\ - 7167 \\ \hline \\ \hline \end{array}$$

## Quiz

- Write the numbers 0, 1, 2, 3 and 4 in the circles of the following diagram. Make sure that the sum is 5 in each direction. Remember that repeating a number is not allowed.



- Write the numbers 1, 2, 3, 4, 5, 6, 7, 8 and 9 in the boxes below so that the total in each column (vertical), row (horizontal) or diagonal is 15. Remember that repeating a number in each direction is not allowed.



## Word problems involving subtraction

**Example**

Solve the following word problems.

1. A farmer harvested four thousand and five hundred sacks of maize last year. This year, he harvested seven thousand, four hundred and fifty-six sacks. What is the difference in number between the sacks of maize the farmer harvested this year and those that he harvested last year?

**Solution**

|            |             |       |
|------------|-------------|-------|
| This year  | 7456        | sacks |
| Last year  | – 4500      | sacks |
| More sacks | <u>2956</u> |       |

Therefore, the difference in number is two thousand, nine hundred and fifty-six sacks.

2. A school bought seven thousand, two hundred and fifty-two exercise books for its pupils. Baraka and Tatu were asked to carry the books to the store. If Baraka carried three thousand and thirty-nine exercise books, how many exercise books did Tatu carry?

**Solution**

|                                  |             |
|----------------------------------|-------------|
| Total exercise books             | 7252        |
| Exercise books carried by Baraka | – 3039      |
| Exercise books carried by Tatu   | <u>4213</u> |

Therefore, Tatu carried four thousand, two hundred and thirteen exercise books.



## Exercise 12

**Solve the following word problems.**

1. Maria's shop has 2972 phones, consisting of mobile and landline phones. If 1235 are mobile phones, how many landline phones are there in the shop?
2. Pupils planted three thousand four hundred and eighty trees in 2014. By 2016, five hundred and eighty-seven trees had dried up. How many trees remained?
3. A fruit seller had four thousand, three hundred and eighteen mangoes. He sold one thousand, four hundred and thirty-five mangoes. How many mangoes remained?
4. Salum needs 4570 bricks for building his house. If he has 1270 bricks, how many more bricks should Salum buy in order to build his house?
5. A fisherman caught 7381 fish. He sold 5792 fish. How many fish remained?
6. Remi bought six thousand, four hundred and forty tomatoes. If one thousand, three hundred and two tomatoes were rotten, how many tomatoes were not rotten?
7. A school requires three thousand, seven hundred and forty-nine desks. If parents contribute two thousand, nine hundred and ninety-seven desks, how many desks will still be needed by the school?
8. Tabora Region has planned to plant 9999 trees for two years. If in the first year 5070 trees are planted, how many tree will be planted in the second year?
9. Kaloleni Primary School has 5960 pupils. If 2700 pupils are boys, how many girls are there in the school?

10. A certain ward had six thousand, eight hundred and seventy-four registered voters. If three thousand and eighty-seven people voted, how many did not vote?
11. 2807 iron sheets were ordered from a certain company. If the company supplied 2398 iron sheets, how many iron sheets were not supplied?
12. Pendo harvested five thousand and forty-seven sacks of beans in the first year. She harvested three thousand, four hundred and thirty-eight sacks in the second year. What is the difference in harvests between the first and second year?

## Multiplication

Multiplication is repetitive addition of a number. Consider two whole numbers such as 2 and 3. If you write  $2 \times 3$ , it means 2 is multiplied by 3. Thus, 2 is added to itself 3 times. Therefore,  $2 \times 3$  equals to  $2 + 2 + 2 = 6$ . Similarly,  $3 \times 2$  means 3 added to itself 2 times. Therefore,  $3 \times 2 = 3 + 3 = 6$ .

### Example 1

$2 \times 1$  is read as two times one.

1. The first number represents the size of the group.
2. The second number represents the number of the groups of objects.

Therefore,  $2 \times 1$  means one group of two objects.



means 2 cups

$$2 \times 1 = 2$$

### Example 2

$2 \times 2$  means two groups of two objects



+



=



two sticks

two sticks

four sticks

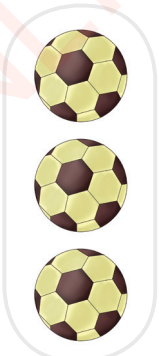
$$2 \times 2 = 4$$

### Example 3

$3 \times 2$  means two groups of three



+



=



three balls

three balls

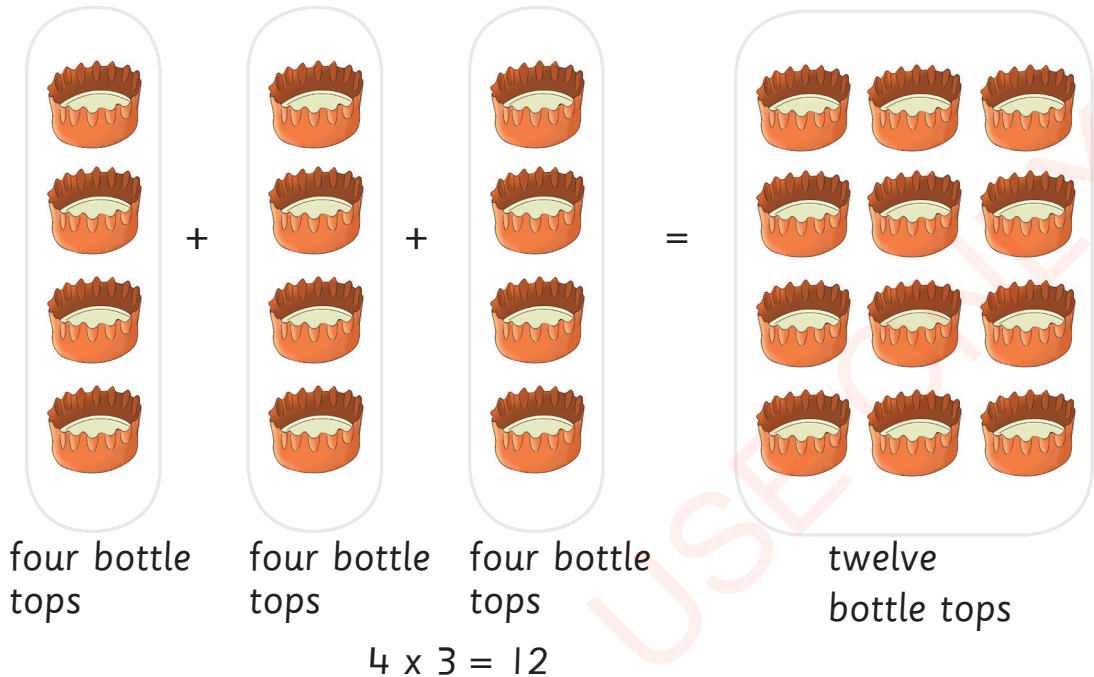
six balls

$$3 \times 2 = 6$$



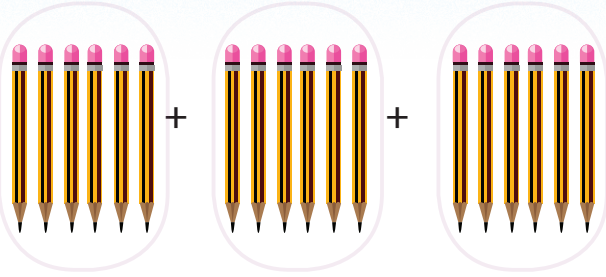
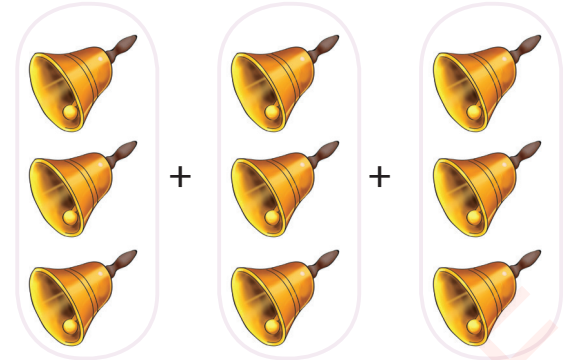
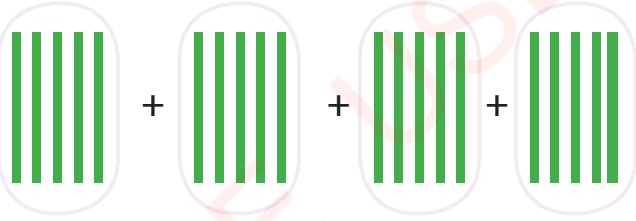
### Example 4

$4 \times 3$  means three groups of four bottle tops



Fill in the following chart.

| Multiplication | Picture of objects and their corresponding total |
|----------------|--------------------------------------------------|
| $4 \times 2$   | <p>= ___ cars</p>                                |

|              |                                                                                                  |
|--------------|--------------------------------------------------------------------------------------------------|
| $6 \times 3$ |  = ___ pencils |
| _____        |  = ___ bells   |
| _____        |  = ___ sticks |

Multiplication is the short form of repetitive addition of numbers.

### Example 5

- $2 \times 3 = 2 + 2 + 2 = 6$ , therefore  $2 \times 3 = 6$
- $3 \times 3 = 3 + 3 + 3 = 9$ , therefore  $3 \times 3 = 9$
- $2 \times 4 = 2 + 2 + 2 + 2 = 8$ , therefore  $2 \times 4 = 8$
- $5 \times 3 = 5 + 5 + 5 = 15$ , therefore  $5 \times 3 = 15$

### Exercise 13

Fill in the blank boxes.

|     | Multiplication | Repeated addition       | Answer |
|-----|----------------|-------------------------|--------|
| 1.  | $2 \times 6$   | $2 + 2 + 2 + 2 + 2 + 2$ | 12     |
| 2.  | $4 \times 3$   | $4 + 4 + 4$             |        |
| 3.  | $4 \times 5$   |                         |        |
| 4.  |                | $6 + 6 + 6 + 6$         |        |
| 5.  |                | $5 + 5 + 5 + 5 + 5$     | 25     |
| 6.  | $8 \times 3$   |                         |        |
| 7.  | $10 \times 2$  |                         |        |
| 8.  | $9 \times 5$   |                         |        |
| 9.  | $11 \times 4$  |                         |        |
| 10. | $12 \times 3$  |                         |        |

Answer the following questions.

11.  $2 \times 1 =$

18.  $2 \times 8 =$

12.  $2 \times 2 =$

19.  $2 \times 9 =$

13.  $2 \times 3 =$

20.  $10 \times 4 =$

14.  $5 \times 4 =$

21.  $2 \times 11 =$

15.  $2 \times 5 =$

22.  $2 \times 12 =$

16.  $6 \times 3 =$

23.  $9 \times 2 =$

17.  $7 \times 2 =$

24.  $8 \times 4 =$



**Horizontal multiplication of numbers**

Multiplying a two-digit number by a one-digit number.

**Example 1**

$$24 \times 2 =$$

**Steps**

1. Multiply 4 ones by 2, that is,  $4 \times 2 = 8$  ones.
2. Write 8 in the ones position.
3. Multiply 2 tens by 2, that is,  $2 \times 2 = 4$  tens.
4. Write 4 in the tens position.

Therefore,

| Tens | Ones | $\times 2 =$ | Tens | Ones |
|------|------|--------------|------|------|
| 2    | 4    |              | 4    | 8    |

$$24 \times 2 = 48$$

**Example 2**

$$13 \times 5 =$$

**Steps**

1. Multiply 3 by 5, that is,  $3 \times 5 = 15$ .
2. Write 5 in the ones position and carry over 1 tens.
3. Multiply 1 tens by 5, that is,  $1 \times 5 = 5$ .
4. Add the 1 tens which you carried over from the tens in step 2 to the 5 tens obtained in step 3, which is  $5 + 1 = 6$ .

1. Write 6 in the tens position.

Therefore,

| Tens | Ones |              | Tens | Ones |
|------|------|--------------|------|------|
| 1    | 3    | $\times 5 =$ | 6    | 5    |

$$13 \times 5 = 65$$

### Exercise 14

Answer the following questions.

1.  $13 \times 2 =$

2.  $15 \times 3 =$

3.  $14 \times 4 =$

4.  $10 \times 5 =$

5.  $20 \times 2 =$

6.  $12 \times 9 =$

7.  $48 \times 3 =$

8.  $30 \times 2 =$

9.  $17 \times 8 =$

10.  $74 \times 2 =$

11.  $52 \times 2 =$

12.  $33 \times 3 =$

13.  $41 \times 8 =$

14.  $16 \times 4 =$

15.  $97 \times 2 =$

16.  $38 \times 8 =$

17.  $84 \times 6 =$

18.  $27 \times 5 =$

19.  $18 \times 3 =$

20.  $11 \times 7 =$

### Vertical multiplication of numbers

Multiplying a two-digit number by a one-digit number.

#### Example 1

$$\begin{array}{r} 31 \\ \times 7 \\ \hline \\ \hline \end{array}$$

### Steps

1. Multiply 1 ones by 7, that is,  $1 \times 7 = 7$ .
2. Write 7 in the ones position.
3. Multiply 3 tens by 7, that is,  $3 \times 7 = 21$ .
4. Write 1 in the tens position and 2 in the hundreds position.

Therefore,

$$\begin{array}{r} 31 \\ \times 7 \\ \hline 217 \end{array}$$

### Example 2

$$\begin{array}{r} 48 \\ \times 2 \\ \hline \end{array}$$

### Steps

1. Multiply 8 ones by 2, that is,  $8 \times 2 = 16$ . Sixteen is equal to 1 tens and 6 ones.
2. Write 6 in the ones position and then carry over 1 into the tens position.
3. Multiply 4 tens by 2, that is,  $4 \times 2 = 8$ .
4. The answer you got in step 3 is added to the 1 tens from step 2, which is,  $8 + 1 = 9$ .
5. Write 9 in the tens position.

6. Therefore,

$$\begin{array}{r} 48 \\ \times 2 \\ \hline 96 \end{array}$$



### Exercise 15

Answer the following questions.

$$\begin{array}{r} 1. \quad \begin{array}{r} 18 \\ \times 4 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 2. \quad \begin{array}{r} 14 \\ \times 7 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 3. \quad \begin{array}{r} 64 \\ \times 7 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 4. \quad \begin{array}{r} 76 \\ \times 2 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 5. \quad \begin{array}{r} 81 \\ \times 5 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 6. \quad \begin{array}{r} 70 \\ \times 3 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 7. \quad \begin{array}{r} 24 \\ \times 8 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 8. \quad \begin{array}{r} 84 \\ \times 6 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 9. \quad \begin{array}{r} 43 \\ \times 7 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 10. \quad \begin{array}{r} 98 \\ \times 4 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 11. \quad \begin{array}{r} 89 \\ \times 9 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 12. \quad \begin{array}{r} 32 \\ \times 7 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad \begin{array}{r} 45 \\ \times 8 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad \begin{array}{r} 99 \\ \times 8 \\ \hline \end{array} \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad \begin{array}{r} 44 \\ \times 2 \\ \hline \end{array} \\ \hline \end{array}$$

### Word problems in multiplication

#### Example 1

Anna bought 3 pens; each pen cost 50 shillings. How much did she pay for the pens?

Shillings  $\begin{array}{r} 50 \\ \times 3 \\ \hline \end{array}$

Pens  $\begin{array}{r} 50 \\ \times 3 \\ \hline \end{array}$

Shillings  $\begin{array}{r} 150 \\ \hline \end{array}$

Anna paid 150 shillings.

### Example 2

A farmer bought two farms, each with 26 fruit trees on it. How many fruit trees were there on the two farms?

#### Solution

$$26 \times 2 = 52$$

There were 52 fruit trees on the two farms.

### Exercise 16

Answer the following word problems.

1. How many pupils are there in five classes, if each class has 38 pupils?
2. Nineteen businessmen donated 7 iron sheets each to a school. How many iron sheets did the school get?
3. One motor vehicle industry manufactures 12 cars in a month. How many cars will the industry manufacture in six months?
4. A carpenter makes 4 tables a day. How many tables will be made in 31 days?
5. A certain country launched a campaign to reduce road accidents. In a month, twenty-five drivers were given road safety education. How many drivers were given road safety education in six months?
6. A teacher bought 8 boxes of pieces of chalk. Each box contained 30 pieces of chalk. How many pieces of chalk did the teacher buy?

7. A teacher taught about HIV and AIDS to the pupils in standard 3, 4, 5 and 6. If each class had 45 pupils, how many pupils were taught about the disease?
8. One car can carry 55 passengers at once. How many passengers can be carried by six cars of the same capacity?
9. There are 6 flower beds in a garden. If every bed has 63 flower seedlings, how many flower seedlings are there in all the flower beds?
10. A farmer kept 5 dairy cows. Each cow produces 15 litres of milk a day. How many litres of milk does the farmer get in a day?

### Multiplication by zero

Remember that  $3 \times 2$  means 2 groups of 3 objects each; and the total is 6 objects. This also means a group of 3 objects counted 2 times.

Therefore,  $3 \times 0$  means no group of 3 things. That is,  $3 \times 0 = 0$

Therefore, when a number is multiplied by zero, the answer is zero.

**Study the following examples and then answer the questions in Exercise 17.**

#### Example 1

$$0 \times 0 = 0$$



### Example 2

$$0 \times 2 = 0 + 0$$

|   |   |   |   |   |
|---|---|---|---|---|
| 0 | + | 0 | = | 0 |
|---|---|---|---|---|

This example shows that two groups of nothing is nothing. Therefore, repeated addition of an empty group gives an empty group.

Therefore,  $0 \times 2 = 0$

### Example 3

$0 \times 4$  means an empty group counted 4 times equals to 0

Therefore,  $4 \times 0 = 0 \times 4 = 0$

### Exercise 17

**Multiply the following numbers.**

1. 
$$\begin{array}{r} 31 \\ \times 0 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 14 \\ \times 0 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 22 \\ \times 0 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 23 \\ \times 0 \\ \hline \end{array}$$

5.  $0 \times 3 =$

6.  $8 \times 0 =$

7.  $6 \times 0 =$

8.  $0 \times 45 =$

9.  $0 \times 7 =$

10.  $10 \times 0 =$

## Revision exercise

Answer the following questions.

1. 
$$\begin{array}{r} 4261 \\ + 326 \\ \hline \end{array}$$

2. 
$$\begin{array}{r} 3789 \\ + 19 \\ \hline \end{array}$$

3. 
$$\begin{array}{r} 7516 \\ + 1529 \\ \hline \end{array}$$

4. 
$$\begin{array}{r} 7326 \\ + 215 \\ \hline \end{array}$$

5. 
$$\begin{array}{r} 6632 \\ + 89 \\ \hline \end{array}$$

6. 
$$\begin{array}{r} 8763 \\ + 532 \\ \hline \end{array}$$

7. 
$$\begin{array}{r} 6596 \\ + 2389 \\ \hline \end{array}$$

8. 
$$\begin{array}{r} 6372 \\ + 2449 \\ \hline \end{array}$$

9.  $4561 + 123 =$

10.  $9111 + 99 =$

11.  $4572 + 1326 =$

12.  $5768 + 2926 =$

13.  $5051 - 4020 =$

14.  $6770 - 240 =$

15.  $9770 - 240 =$

16.  $5396 - 88 =$

- 17.** John has 4569 chickens and Ashura has 5200 chickens. How many chickens do they have?
- 18.** A teacher had 7568 exercise books. She distributed 5368 exercise books to her pupils. How many exercise books remained?
- 19.** A school has 3270 pupils. If 1560 pupils are girls, how many pupils are boys?
- 20.** One ward has 6328 people and another ward has 2590 people. How many people are there in the two wards?

**21.**

$$\begin{array}{r} 9 \\ \times 8 \\ \hline \\ \hline \end{array}$$

**22.**

$$\begin{array}{r} 7 \\ \times 4 \\ \hline \\ \hline \end{array}$$

**23.**

$$\begin{array}{r} 19 \\ \times 4 \\ \hline \\ \hline \end{array}$$

**24.**

$$\begin{array}{r} 32 \\ \times 5 \\ \hline \\ \hline \end{array}$$

**25.**  $13 \times 5 =$

**26.**  $4 \times 2 =$



**27.** Write the missing numbers in the following chart.

Example  $6 \times 5 = 30$ .

| ×  | 0 | 1 | 2 | 3 | 4 | 5 | 6  | 7 | 8 | 9 | 10 |
|----|---|---|---|---|---|---|----|---|---|---|----|
| 0  |   |   |   |   |   |   |    |   |   |   |    |
| 1  |   |   |   |   |   |   |    |   |   |   |    |
| 2  |   |   |   |   |   |   |    |   |   |   |    |
| 3  |   |   |   |   |   |   |    |   |   |   |    |
| 4  |   |   |   |   |   |   |    |   |   |   |    |
| 5  |   |   |   |   |   |   |    |   |   |   |    |
| 6  |   |   |   |   |   |   | 30 |   |   |   |    |
| 7  |   |   |   |   |   |   |    |   |   |   |    |
| 8  |   |   |   |   |   |   |    |   |   |   |    |
| 9  |   |   |   |   |   |   |    |   |   |   |    |
| 10 |   |   |   |   |   |   |    |   |   |   |    |

**28.** A business woman buys 10 eggs each day. How many eggs will she buy in three days?

**29.** Rehema counted the tires of 6 cars. If each car has 8 tires, how many tires did she count?

**30.** There are 15 pupils in Standard Three. Each pupil was told to bring 3 fruit tree seedlings to school. How many fruit tree seedlings were brought to school by all the pupils?

## Summary

1. When any number is multiplied by zero, the answer is zero.  
Example,  $6 \times 0 = 0$
2. When zero is multiplied by zero, the answer is zero. That is,  
 $0 \times 0 = 0$
3. When numbers are interchanged in multiplication,  
the answer is the same.

For example

$$4 \times 5 = 20 ; \quad 5 \times 4 = 20$$

$$8 \times 3 = 24 ; \quad 3 \times 8 = 24$$

$$0 \times 6 = 0 \quad ; \quad 6 \times 0 = 0$$

## Vocabulary

**Multiplication** repetitive addition of a number

**Seedling** a young plant raised from a seed

## Chapter Four

### Fractions

#### Recognizing fractions

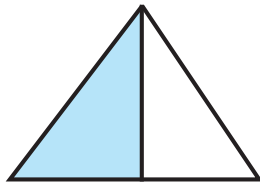
In Standard Two, you learnt how to identify fractions like a quarter, a half, one-third, and two-thirds. Also, you learnt how to read and write such fractions. In this chapter, you will learn more about reading and writing fractions.

#### Exercise 1 Revision

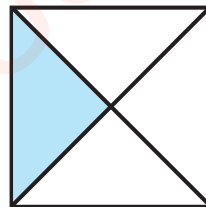
Answer the following questions.

1. What fraction is represented by the shaded part of each of the following figures?

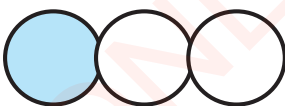
a.



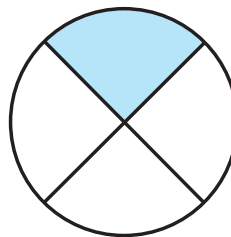
b.



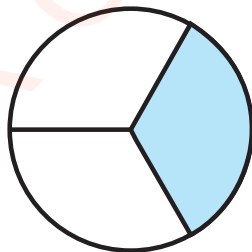
c.



d.



e.

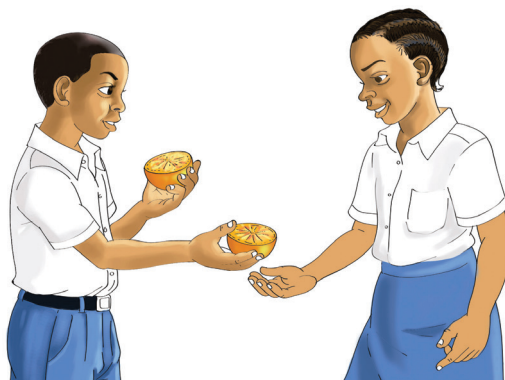


f.





2. Musa divided an orange into two equal pieces. He gave one piece to his sister. What fraction of the orange did each get?



3. A teacher has a piece of sugarcane with four equal parts. He wants to divide it among his four pupils, one portion each. What fraction of the sugarcane will be given to each pupil?

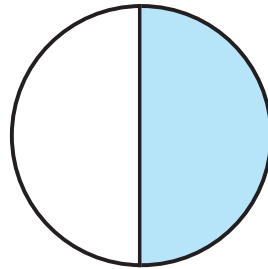


4. Selemani had a pawpaw. He divided the pawpaw into three equal parts. What fraction of the pawpaw each part represents?
5. Sadiki has two oranges and he wants to divide them between his two children so that each gets one orange. What fraction of the oranges will each get?

## Reading fractions

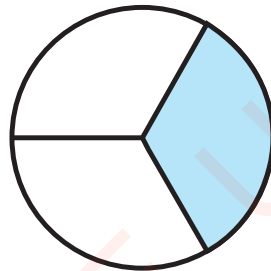
Fractions can be represented by using diagrams. Consider the following diagrams.

1.



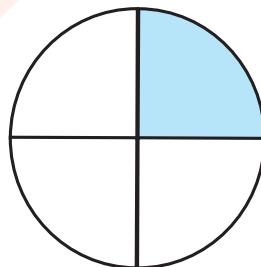
The above diagram shows a circle which has been divided into two equal parts. One part of the circle is shaded. The shaded part is one of the two equal parts. This is written as  $\frac{1}{2}$ .

2.



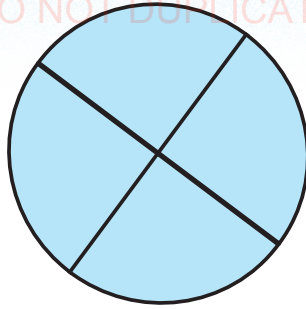
The above diagram shows a circle which has been divided into three equal parts. One part of the circle is shaded. The shaded part is one of the three equal parts. This is written as  $\frac{1}{3}$ .

3.



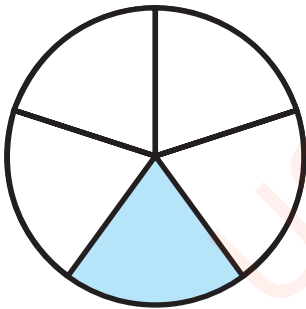
The above diagram above shows a circle which has been divided into four equal parts. One part of the circle is shaded. The shaded part is one of the four equal parts. This is written as  $\frac{1}{4}$ .

4.



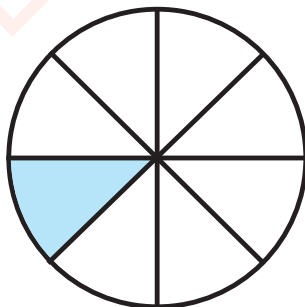
The above diagram shows a circle which has been divided into four equal parts. All four parts of the circle are shaded. This is written as  $\frac{4}{4}$ .

5.



The above diagram shows a circle which has been divided into five equal parts. One part of the circle is shaded. The shaded part is one of the five equal parts. This is written as  $\frac{1}{5}$ .

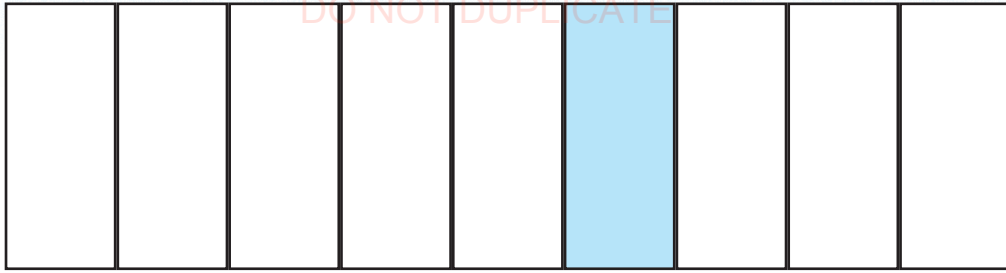
6.



The above diagram shows a circle which has been divided into eight equal parts. One part of the circle is shaded. The shaded part is one of the eight equal parts. This is written as  $\frac{1}{8}$ .

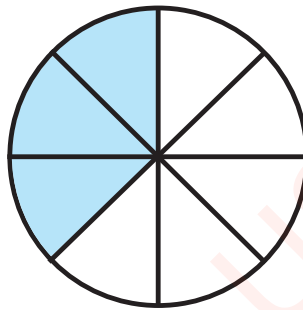


7.



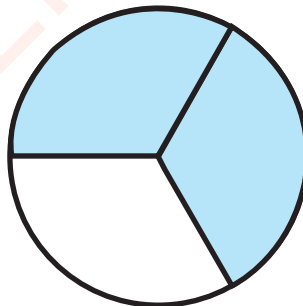
The above diagram shows a rectangle which has been divided into nine equal parts. One part of the rectangle is shaded. The shaded part is one of the nine equal parts. This is written as  $\frac{1}{9}$ .

8.



The above diagram shows a circle which has been divided into eight equal parts. Three parts of the circle are shaded. The shaded parts are three of the eight equal parts. This is written as  $\frac{3}{8}$ .

9.



The above diagram shows a circle which has been divided into three equal parts. Two parts of the circle are shaded. The shaded parts are two of the three equal parts. This is written as  $\frac{2}{3}$ .

## Reading and writing fractions

### Example 1

Read the following fractions.

- $\frac{3}{10}$  is read three-tenths
- $\frac{5}{7}$  is read five-sevenths
- $\frac{1}{2}$  is read half
- $\frac{7}{12}$  is read seven-twelfths

### Example 2

Write the fractions in numerals.

- Two-fifths =  $\frac{2}{5}$
- One-sixths =  $\frac{1}{6}$
- Three-fourths =  $\frac{3}{4}$
- Five-elevenths =  $\frac{5}{11}$

### Example 3

Write the fractions in words.

- $\frac{2}{9}$  = Two-ninths
- $\frac{1}{3}$  = One third
- $\frac{4}{7}$  = Four-sevenths
- $\frac{8}{12}$  = Eight-twelfths

## Exercise 2

**Answer the following questions.**

**1.** Express the following fractions in words.

**a.**  $\frac{1}{10}$

**i.**  $\frac{3}{6}$

**b.**  $\frac{5}{8}$

**j.**  $\frac{5}{5}$

**c.**  $\frac{6}{10}$

**k.**  $\frac{7}{9}$

**d.**  $\frac{3}{3}$

**l.**  $\frac{6}{7}$

**e.**  $\frac{1}{6}$

**m.**  $\frac{8}{10}$

**f.**  $\frac{3}{4}$

**n.**  $\frac{5}{11}$

**g.**  $\frac{4}{8}$

**o.**  $\frac{3}{9}$

**h.**  $\frac{4}{7}$

**p.**  $\frac{7}{11}$

**2.** Write the following fractions in numerals.

**a.** One-fifths =

**b.** Two-sevenths =

**c.** A half =

**d.** Three quarters =



**e.** Two-ninths =

**f.** Three-eighths =

**g.** A quarter =

**h.** Two-thirds =

**i.** Four-ninths =

**j.** Three-sevenths =

**k.** One-twelfths =

**l.** One-half =

**m.** Seven-eighths =

**n.** Six-ninths =

**o.** Five-sevenths =

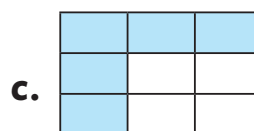
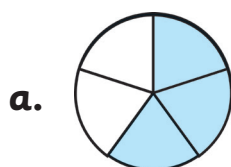
- 3.** For each of the following fractions, draw a circle and divide it into equal parts. Shade the part or parts representing the fraction.

**a.**  $\frac{1}{8}$

**b.**  $\frac{2}{3}$

**c.**  $\frac{3}{4}$

4. Write the fractions represented by the shaded parts of the following diagrams.



5. Draw diagrams of a piece of sugarcane divided into equal parts. Then, shade the parts which represent the following fractions.

a.  $\frac{5}{8}$

b.  $\frac{3}{8}$

c.  $\frac{6}{7}$

d.  $\frac{1}{6}$

e.  $\frac{7}{9}$

### Exercise 3

Answer the following questions.

- How many parts of  $\frac{1}{4}$  are there in a whole object?
- How many parts of  $\frac{1}{8}$  are there in a whole object?
- How many parts of  $\frac{1}{5}$  are there in a whole object?
- Alada divided an orange into four equal parts. She gave one piece to her sister. What fraction of the orange did she give her sister?
- What fraction represents two goats in a group of six goats?
- Out of 8 mangoes, 2 are rotten. What fraction represents the rotten mangoes?
- A farmer harvested six pawpaws. He gave two pawpaws to each of his three children. What fraction of the pawpaws did each child get?

## Revision exercise

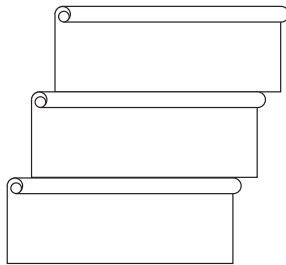
**Answer the following questions.**

**1.** Shade the drawings in **a–e** to show the indicated fractions.

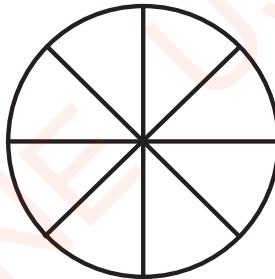
**a.**  $\frac{2}{4}$



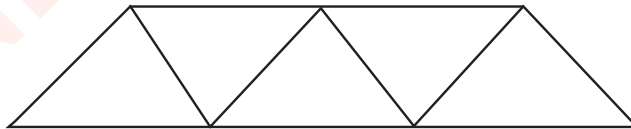
**b.**  $\frac{1}{3}$



**c.**  $\frac{6}{8}$



**d.**  $\frac{3}{5}$

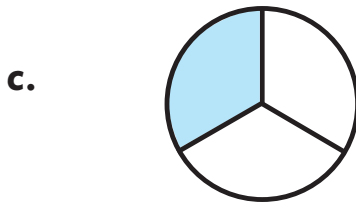
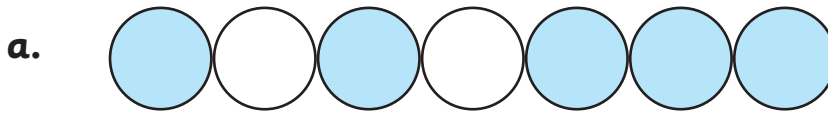


**e.**  $\frac{5}{12}$



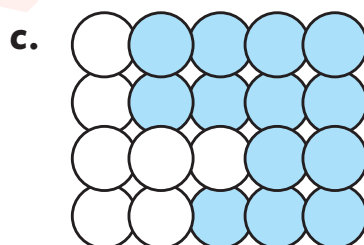
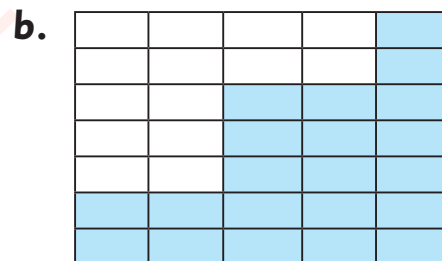
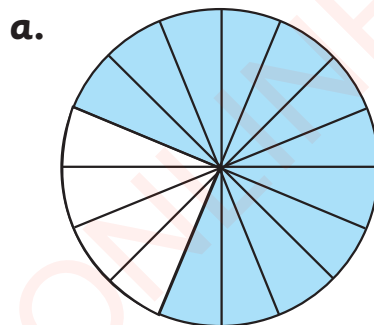


2. Write the fraction which represents the shaded parts of the following drawings **a–d**.



3. Draw a figure and then shade  $\frac{1}{2}$  of it.

4. Write the fraction which represents the shaded parts of drawings **a**, **b** and **c**.



## Vocabulary

|                       |                 |                                                                     |
|-----------------------|-----------------|---------------------------------------------------------------------|
| <b>Half</b>           | $= \frac{1}{2}$ | either of two equal parts into which something is or can be divided |
| <b>One third</b>      | $= \frac{1}{3}$ | one of three equal parts of something                               |
| <b>Quarter</b>        | $= \frac{1}{4}$ | one of four equal parts into which something can be divided         |
| <b>Three quarters</b> | $= \frac{3}{4}$ | three parts of four equal parts into which something can be divided |
| <b>Two thirds</b>     | $= \frac{2}{3}$ | two parts of three equal parts of something                         |

## Chapter Five

### Shapes and figures

In Standard Two, you learnt the difference between plane figures and non-plane figures. In this chapter, you will learn more about plane figures and non-plane figures, including naming and drawing them.

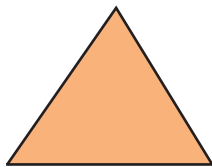
#### Plane figures

##### Exercise 1 Revision

Study the following figures and then answer questions 1 to 7.



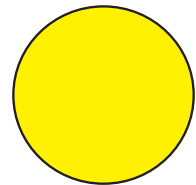
a.



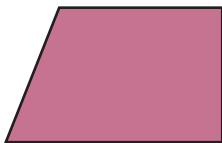
b.



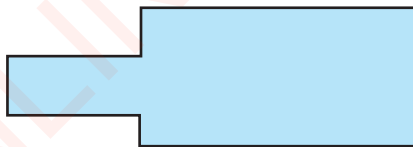
c.



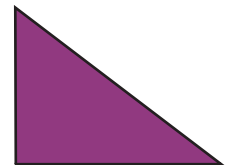
d.



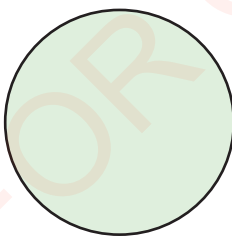
e.



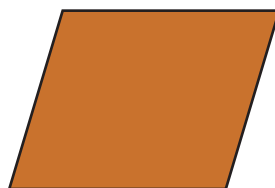
f.



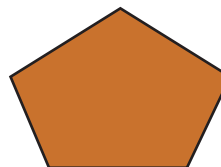
g.



h.



i.



j.

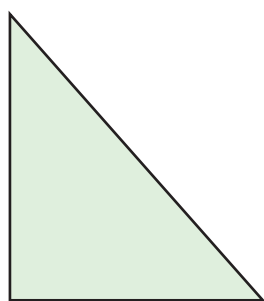


k.

1. Which figures have four angles?
2. Which figures are circles?
3. Write the names of figures **a** to **d**
4. How many angles are there in each of figures **a** and **b**?
5. Which figures have no angles?
6. Which figures have three angles?
7. Explain the difference between plane and non-plane figures.

## Names of plane figures

Plane figures are given names according to their shapes and the number of angles. The following diagrams are examples of plane figures and their corresponding names.



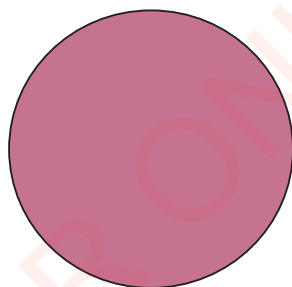
Triangle



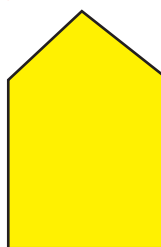
Square



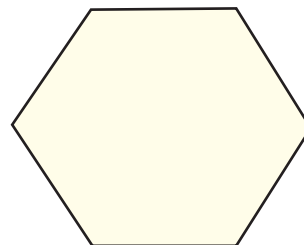
Rectangle



Circle



Pentagon



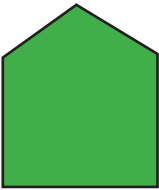
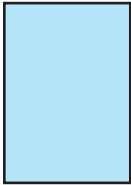
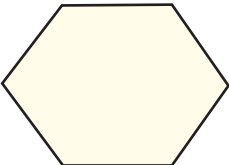
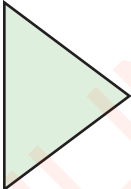
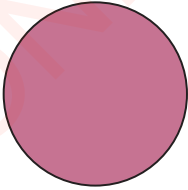
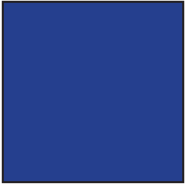
Hexagon

A square and a rectangle have four equal angles each. The difference is that a square has four equal sides, while a rectangle has two equal opposite sides.



## Exercise 2

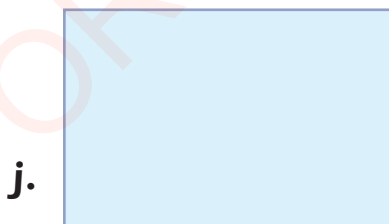
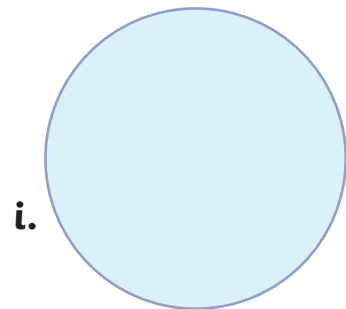
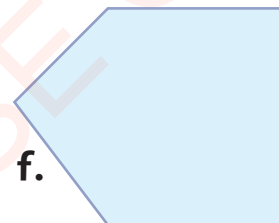
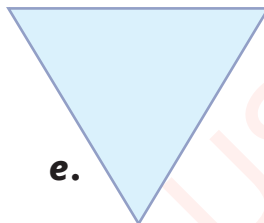
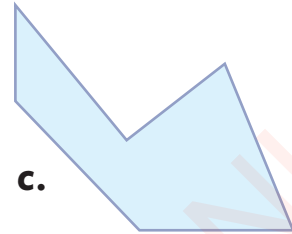
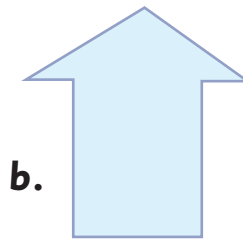
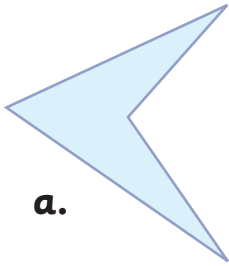
Write the names of the plane figures numbered 1 to 6 in the following table.

| No. | Plane figure                                                                        | Name of the plane figure |
|-----|-------------------------------------------------------------------------------------|--------------------------|
| 1.  |    |                          |
| 2.  |    |                          |
| 3.  |   |                          |
| 4.  |  |                          |
| 5.  |  |                          |
| 6.  |  |                          |

## Drawing and making plane figures

### Exercise 3

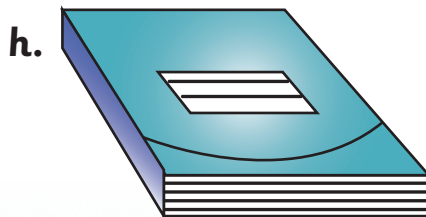
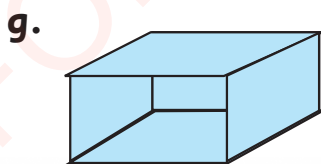
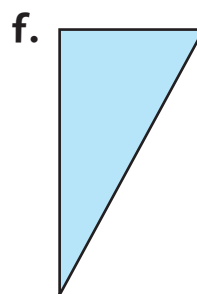
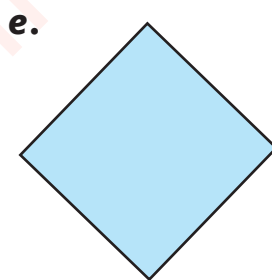
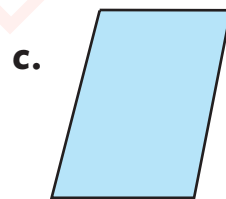
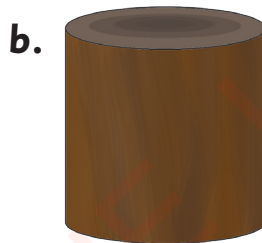
Study plane figures a to j and then answer the questions that follow.



1. Draw plane figures with four angles.
2. How many plane figures are triangles?
3. Identify the figures which are circles.
4. Identify the plane figures with more than four angles.
5. Make plane figures **a**, **b**, **d**, **e**, **f**, **i** and **j** using pieces of paper.

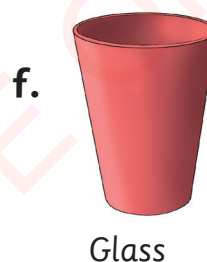
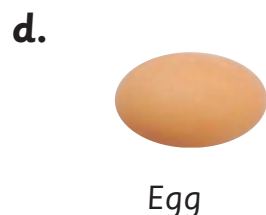
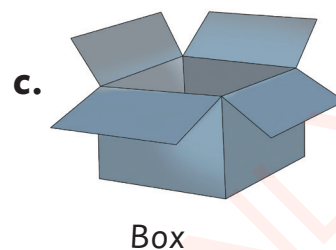
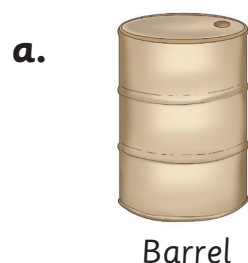
### Non-plane figures

Non-plane figures are different from plane figures.  
Study shapes **a** to **h**.



Figures a, b, d, g and h are non-plane figures, whereas figures c, e and f are plane figures. Figures which are non-plane have volumes. The volumes can be filled with something.

Examples of non-plane figures are shown in the diagrams labelled a to f.



### Activity 1

Make a box by folding a piece of paper.

### Exercise 4

**Answer the following questions.**

1. Draw five figures which are non-plane.
2. Using real objects available in your environment, make five figures which are non-plane.

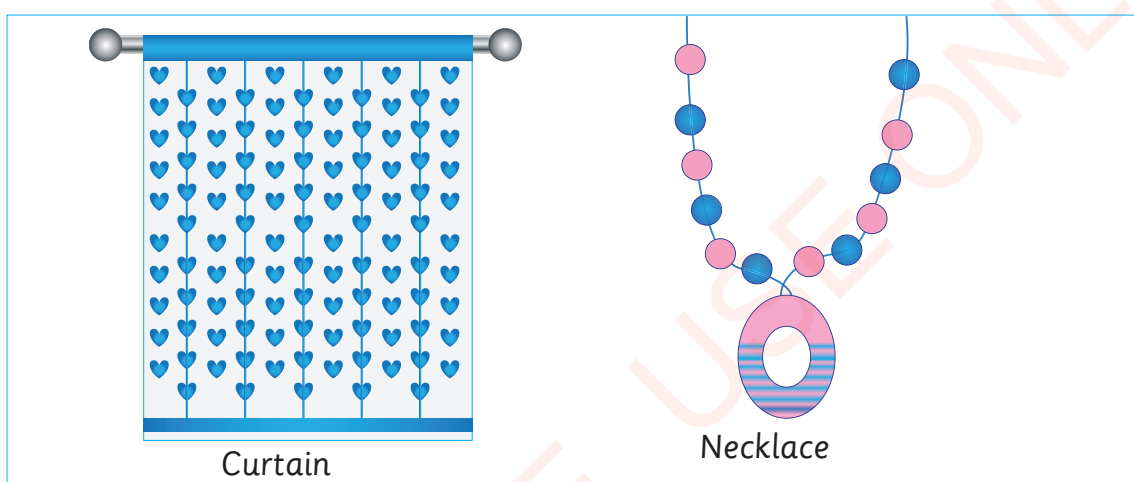


## Making patterns or decorations using plane and non-plane figures

### Steps

1. Make plane and non-plane figures.
2. Connect those figures with a thread or any other material to get a pattern.

Note: You can make patterns using figures of the same shape or by mixing shapes.



### Activity 2

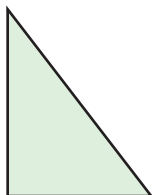
Make the following decorations using plane and non-plane figures.

- a. A table mat
- b. A curtain
- c. A tree

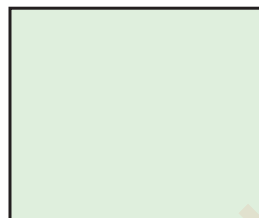
### Exercise 5

Study the following figures and then answer the questions that follow.

a.



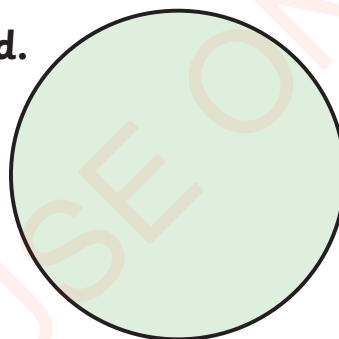
b.



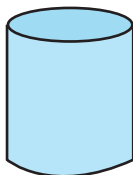
c.



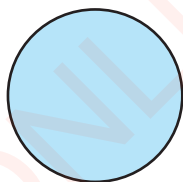
d.



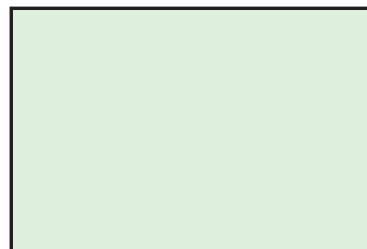
e.



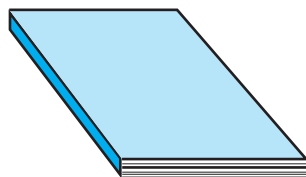
f.



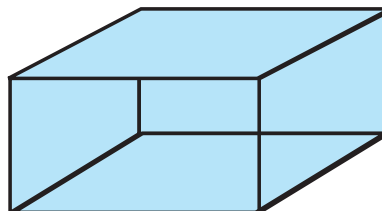
g.



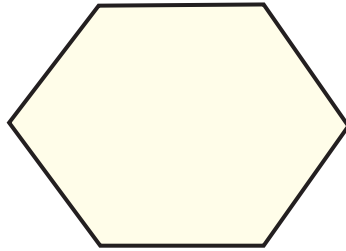
h.



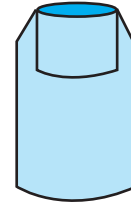
i.



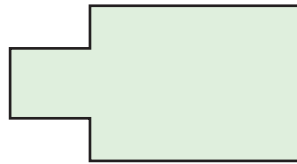
j.



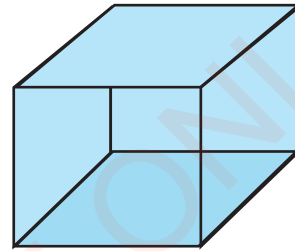
k.



l.



m.



1. Draw all the plane figures.
2. Draw all the non-plane figures.
3. List all the plane figures with four sides.

### Exercise 6

**Answer the following questions.**

1. Mention five non-plane figures found in your environment.
2. List five decorations which can be made using plane figures.
3. Use plane and non-plane figures to make three decorations.

## Revision exercise

**Answer the following questions.**

1. Study figures **a**, **b**, **c**, **d** and then write the name of each figure.

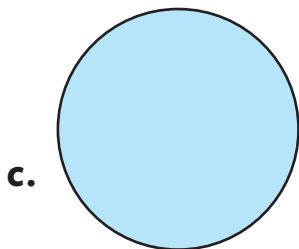
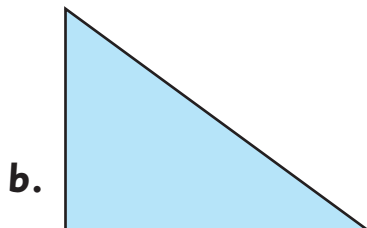
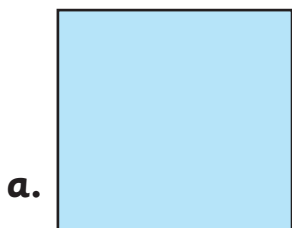


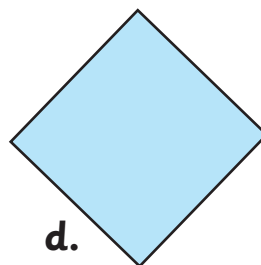
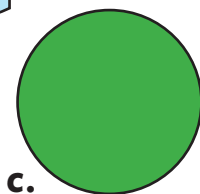
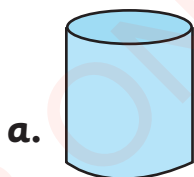
Figure **a** is a \_\_\_\_\_.

Figure **b** is a \_\_\_\_\_.

Figure **c** is a \_\_\_\_\_.

Figure **d** is a \_\_\_\_\_.

2. Which of the following are non-plane figures?



3. How many angles are there in a triangle?



4. Mention two plane figures.
5. Mention two objects found in your environment which are not plane figures.
6. Draw two plane figures.
7. Draw two non-plane figures.
8. Use plane figures to make three different decorations.
9. Use non-plane figures to make three different decorations.

### Summary

Examples of plane figures are squares, rectangles, triangles, circles, pentagons and hexagons. Examples of non-plane figures are drums, balls, boxes, cones and glasses.

### Vocabulary

|                          |                                                                                                                                     |
|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hexagon</b>           | a shape with six sides and six angles                                                                                               |
| <b>Non-plane figures</b> | figures with volumes in which something can be filled.                                                                              |
| <b>Pentagon</b>          | a shape with five sides and five angles                                                                                             |
| <b>Rectangle</b>         | a shape that has four straight sides, two of which are usually longer than the other two, and four $90^\circ$ angles at the corners |
| <b>Square</b>            | a shape with four straight sides with $90^\circ$ angles at the corners                                                              |

## Chapter Six

### Measurements

Measurements are important in our daily lives. They are used in different activities like building, sewing and time management. In this chapter, you will learn measurements of time, length and mass.

#### Measurements of time

Read the following story and then answer the questions that follow.

##### The rainy season

Maria and Rajabu live in Luganga village. They study at Itamba primary school. Every day they walk two hours to school. Because of the long distance, Maria and Rajabu wake up at dawn in order to arrive at school early. Before arriving at school, they have to cross the River Itamba. This river floods during the rainy season. At such times, crossing it becomes dangerous. In the dry season, water is very low in the river. Therefore, the water is not a threat to Maria and Rajabu.

One day, when they were at school during the rainy season, it rained from nine in the morning to twelve in the afternoon. Maria and Rajabu were very worried. Their teacher allowed them to go home at four in the afternoon. However, they were very afraid. So, the teacher accompanied them home.

They found some villagers at the river. The villagers were building a bridge using logs of trees. Maria and Rajabu helped them to build the bridge. At seven in the evening the construction of the bridge was over. They were all happy.

### Questions

1. Mention the seasons found in the story.
2. At what time do Maria and Rajabu wake up?
3. When does the River Itamba flood?
4. When does water in the River Itamba become very low?
5. At what time did the rain start falling?
6. At what time did the rain stop falling?
7. At what time are Itamba Primary School pupils go home?
8. When did the villagers finish building the bridge?
9. When does it rain heavily?
10. When doesn't it rain at all?

### Measurement of time

Measurements of time are classified in two groups.

- a. Measurement of time using non-standard measuring tools
- b. Measurement of time using standard measuring tools

### Non-standard measurement of time

We can measure time using different events happening in our environment.

#### Example

The crowing of a cock or the positions of shadows or the sun during the day are usually used to measure time.

- a. The first cock crow is an indication of dawn.
- b. The human shadows are always long in the morning and become shorter as noon approaches. They are also long in the evening.



### Exercise 1

**Study the following pictures and then answer the questions that follow.**

**a.**



**b.**



1. Which picture shows the shadow of the tree in the morning or evening?
2. Which picture shows the shadow of the tree at noon?
3. Can you tell the time by tracking the sun's position?



## Standard measurement of time

The standard tools for measuring time are clocks and calendars. The common measurement units for time are seconds, minutes, hours, days, months and years. One hour has 60 minutes. One minute has 60 seconds. One day has 24 hours.

### Telling the time in the 12-hour system

- a. The analogue clock has three hands. The shortest hand shows hours. The longer hand shows minutes. And the longest hand shows seconds as shown in Figure 1a. Some clocks have only two hands, as shown in Figure 1b.

a.



b.



**Figure 1** Analogue clocks

- b. The face of a digital clock displays two pairs of digits. These are separated by two dots (:). The first two digits are for hours. The other digits are for minutes. Reading the digital clock is done by looking at the clock time display. Consider the example in the following figure.



**Figure 2** Digital clock

## Exercise 2

Study the faces of the following watches and then answer the questions that follow.

a.



b.



1. What type of watch is shown by face **a**?
2. What time is shown by face **b**?
3. What time is shown by face **a**?
4. What is the difference between the faces of watches **a** and **b**?

## Telling the time using standard watch faces

a.



b.



c.



1 o'clock

2 o'clock

6 o'clock

d.



e.



f.



A quarter past one

Half past ten

A quarter to nine

### Exercise 3

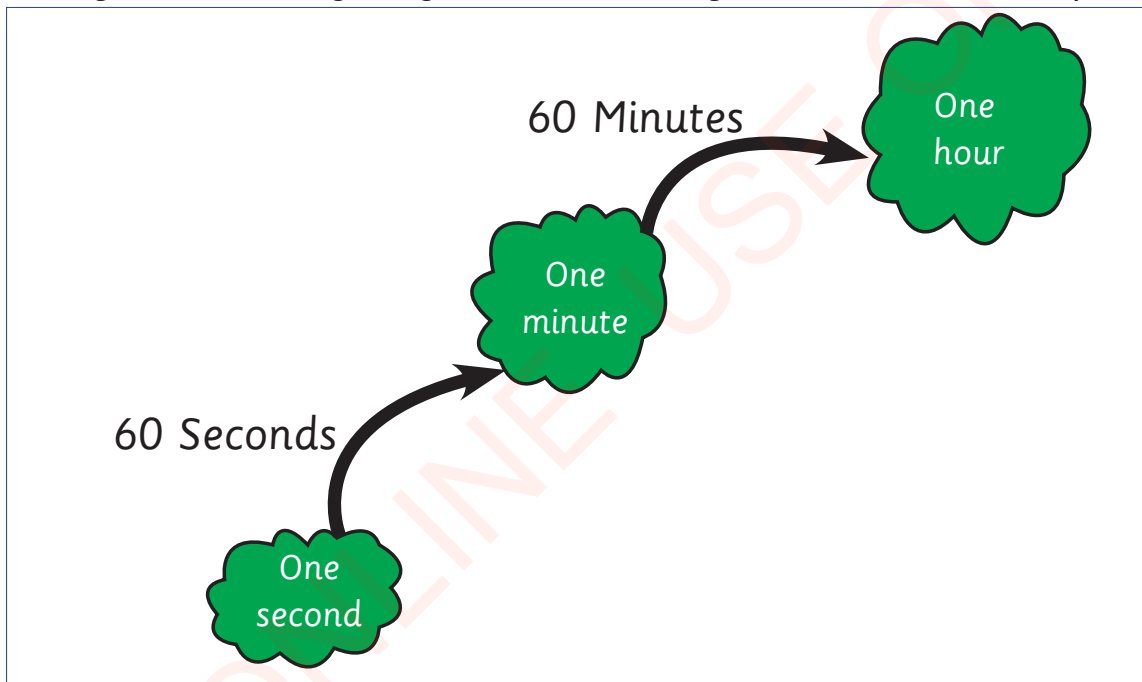
**Answer the following questions.**

For each of the following time readings, draw the face of an analogue watch and indicate the given time.

1. Half past eight
2. One o'clock
3. A quarter to ten

### Time

Study the following diagram and identify the time relationships.



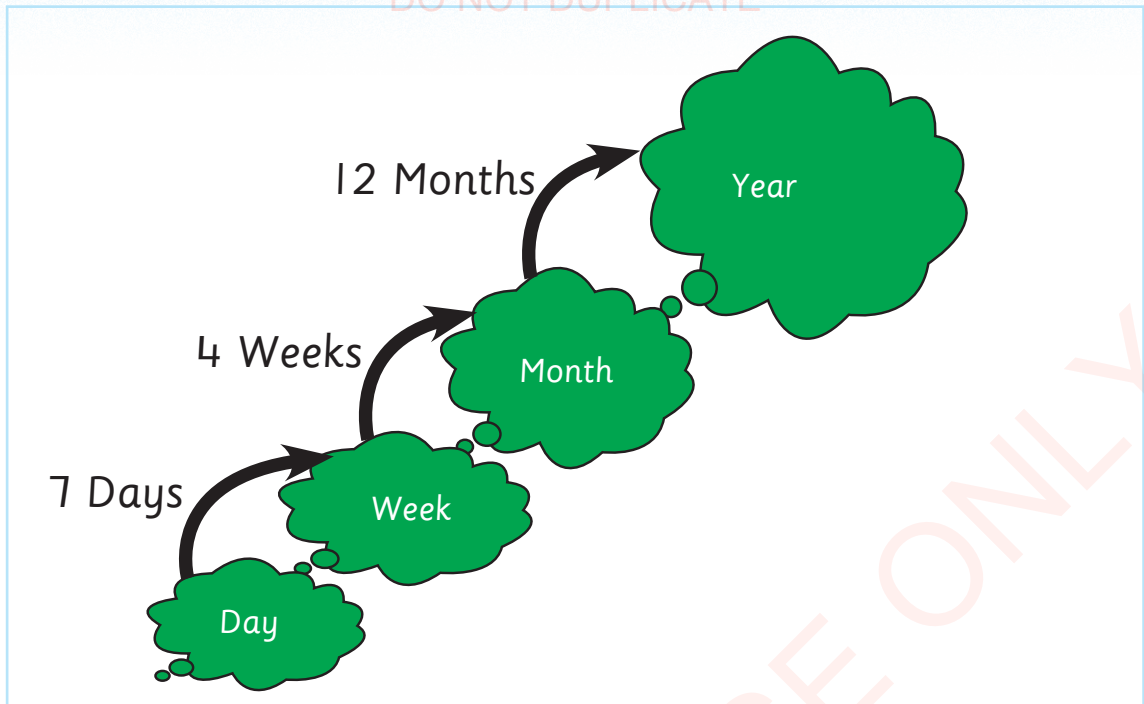
**Figure 3** Time relationships

### Questions

**With the help of Figure 3, fill in the blanks.**

1. 60 seconds equals to \_\_\_\_\_ minute.
2. One hour equals to \_\_\_\_\_ minutes.





**Figure 4** Time relationships

Time is also measured in days, weeks, months and years.

- One day has 24 hours.
- One week has 7 days.
- One month has 4 weeks.
- One month may have 28, 29, 30 or 31 days.
- One year has 12 months.

## Questions

**Fill in the blanks.**

- 24 hours are equal to \_\_\_\_\_ day.
- Seven days are equal to \_\_\_\_\_ week.
- 12 months are equal to one \_\_\_\_\_.



## Names of the days of the week

One week has seven days. The names of the days of the week are shown in the chart below.

| Names of the days of the week |         |           |          |        |          |        |
|-------------------------------|---------|-----------|----------|--------|----------|--------|
| Monday                        | Tuesday | Wednesday | Thursday | Friday | Saturday | Sunday |

## Names of the months of the year

One year has twelve months. Each month has a name and a particular number of days, as shown in the chart below.

| Names of the months of the year |               |             |              |                |                |
|---------------------------------|---------------|-------------|--------------|----------------|----------------|
| First month                     | Second month  | Third month | Fourth month | Fifth month    | Sixth month    |
| January                         | February      | March       | April        | May            | June           |
| 31 days                         | 28 or 29 days | 31 days     | 30 days      | 31 days        | 30 days        |
| Seventh month                   | Eighth month  | Ninth month | Tenth month  | Eleventh month | Twelveth month |
| July                            | August        | September   | October      | November       | December       |
| 31 days                         | 31 days       | 30 days     | 31 days      | 30 days        | 31 days        |

Time in years can be measured in decades and centuries.

- One decade has 10 years.
- One century has 100 years.

## Questions

Fill in the blanks.

- 10 years are equal to \_\_\_\_\_ decade.
- 100 years are equal to \_\_\_\_\_ century.

**Times of the day**

DO NOT DUPLICATE

Times of the day have different names, depending on the specific time. Read the times of the day shown in the chart below.

| Times of the day | Time         |
|------------------|--------------|
| Dawn             | 5:00 – 5:59  |
| Morning          | 6:00 – 11:59 |
| Noon             | 12:00        |
| Afternoon        | 12:01 – 2:59 |
| Dusk             | 3:00 – 4:59  |
| Evening          | 4:00 – 6:59  |
| Night            | 7:00 – 4:59  |
| Midnight         | 12:00        |

**Exercise 4**

**Answer the following questions.**

1. Ali walked from the classroom to his teacher's office for 60 seconds. How many minutes did he walk?
2. Pupils were given a Mathematics test to do for 60 minutes. How many hours were the pupils given to complete the test?
3. Juma travelled from Dar es Salaam to Kibaha for one hour. How many minutes did he spend travelling from Dar es Salaam to Kibaha?
4. John bought airtime for his mobile phone which lasted for 24 hours. How many days do the hours represent?
5. All primary schools close for holidays in the twelfth month of the year. Write the name of the month.
6. A parents' meeting at a certain school started at noon. What time was it?
7. How many years are there in a decade?
8. What do we call a period of 100 years?

## Measurement of length

Measuring length is done using measuring tools. The tools are classified into the following groups.

a. Non-standard measuring tools

Non-standard measuring tools are non-metric tools used everywhere. They include foot steps, feet span, hand span, and arm span.

b. Standard measuring tools

Standard measuring tools are metric tools used to measure length. They include a ruler, a meter ruler and a tape measure.

### The difference between standard and non-standard tools for measuring length

- a. Non-standard measuring tools are used in certain societies.
- b. Non-standard measuring tools differ from one person to another.
- c. Standard measuring tools are used nationally and internationally.

#### Non-standard measuring tools





## Measuring, reading and recording length using non-standard measuring tools

### Activity 1

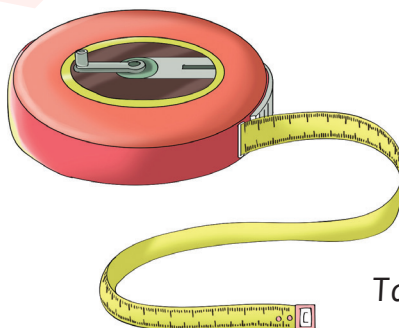
- Measure the length of your classroom using your footsteps.
- How many footsteps did you count?
- Compare your length with that of your classmates.

The total number of the footsteps measured by two persons may differ slightly. The difference is the result of the length of footsteps from one person to another. Therefore, non-standard measuring tools usually produce results which are slightly different.

### Standard measuring tools



Ruler



Tape measure



## Measuring, reading and recording length using standard measuring tools

Standard tools for measuring length are in different units.

### Activity 2

The length of an exercise book is measured in centimetres.

- a. Measure the length of your exercise book using a ruler with a centimetre scale.
- b. What length did you get?
- c. Record the length you got in centimetres.
- d. Compare your answer with that of your classmates.

The answer you get cannot be different from the answer obtained by someone who uses a different ruler with units in centimetres. Therefore, a ruler is a standard measuring tool for measuring length because it has standard measurements.

### Exercise 5

**Answer the following questions.**

1. Measure and then record the length of a table, a floor, a desk and a book using standard measuring tools.
2. Measure and then record the length of a table and a floor using non-standard measuring tools.
3. List some of the non-standard length measuring tools found in your environment.

## Measurement of mass

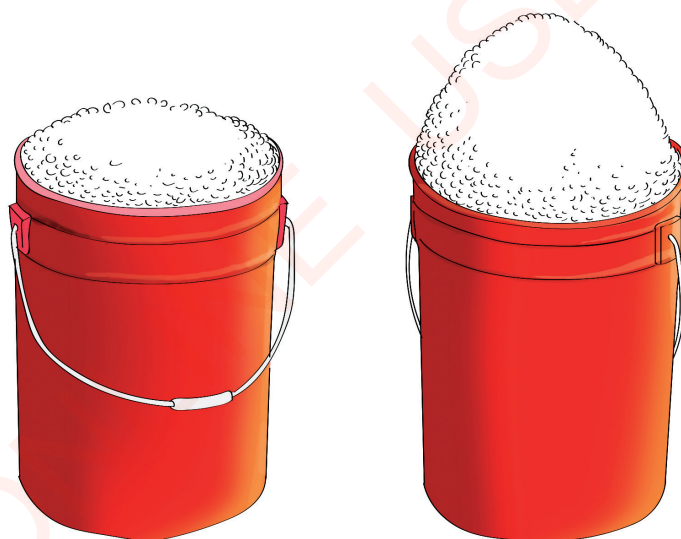
Mass is measured using two types of measuring tools.

- a. Non-standard measuring tools
- b. Standard measuring tools

### Non-standard measuring tools of mass

Several non-standard tools are used to measure mass. The tools used depend on a person's environment and their availability. They include tins, buckets, sacks and bowls. These measuring tools differ from one place to another. They also differ from one user to another.

**For example:** Study the following picture.



First bucket

Second bucket

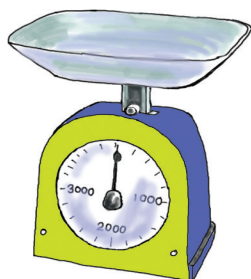
### Questions

1. What do you see in the picture?
2. Measure the mass of different things found in your environment using different measuring tools and then compare the masses.

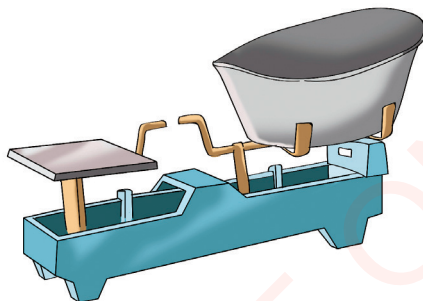
## Standard tools for measuring mass

Beam balances are standard tools used to measure the masses of various objects. The units of mass are grams or kilograms. They are used nationally and internationally.

Look carefully at the following types of measuring tools.



Kitchen scale



Beam balance

These measuring tools are called standard instruments because they give the same mass of a given object. Standard measuring tools also give the same measurements when different persons measure the same object.

### Activity 3

Measuring the mass of objects

- Measure the mass of one box of pieces of chalk using a beam balance.
- How many kilograms did you get?
- Record the mass in kilograms.

### Questions

1. Measure the mass of different objects in your environment using standard measuring tools. Then, record the results in kilograms.



2. List other objects available in your environment whose mass can be measured using standard measuring tools.

### Summary

We use various tools to measure time, length and mass.

### Vocabulary

|                           |                                    |
|---------------------------|------------------------------------|
| <b>Quarter of an hour</b> | 15 minutes                         |
| <b>Half an hour</b>       | 30 minutes                         |
| <b>Measuring tool</b>     | an instrument used for measurement |

## Chapter Seven

### The Tanzanian Currency

A currency or money is a measure of the value of an item. It is either in coins or banknotes. Money can be used to buy and sell things or items. In this chapter, you will learn the value of money. You will also learn how to identify the value of the coins and notes of the Tanzanian currency. In addition, you will identify the present and past Tanzanian currencies.

#### The Tanzanian currency

##### Exercise I Revision

Study the following pictures and then answer the questions that follow.



500 shillings



200 shillings



100 shillings



50 shillings



20 shillings



10 shillings





5 shillings



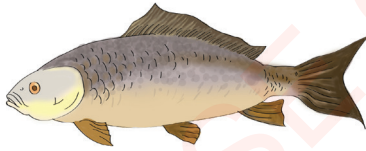
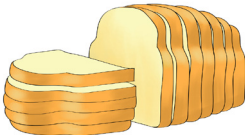
1 shilling

1. Which coin has the highest value?
2. Which coin has the lowest value?
3. Have you seen any of the given coins before?
4. Have you ever used any of the coins to buy items?

## Reading and writing about money

### Exercise 2

Study the price of each of the following items and then answer the questions that follow.

| Price          | Item                                                                                                           |
|----------------|----------------------------------------------------------------------------------------------------------------|
| 1000 shillings |  <span>Plate</span>           |
| 4000 shillings |  <span>Fish</span>           |
| 500 shillings  |  <span>Spinach</span>        |
| 1000 shillings |  <span>Loaf of bread</span> |
| 5000 shillings |  <span>Pan</span>          |



1. Which item has the highest price?
2. Which of the two items, the plate and the cooking pan, has a higher price than the other?
3. What is the price of the loaf of bread?
4. Which items have the same price?

## Tanzanian banknotes

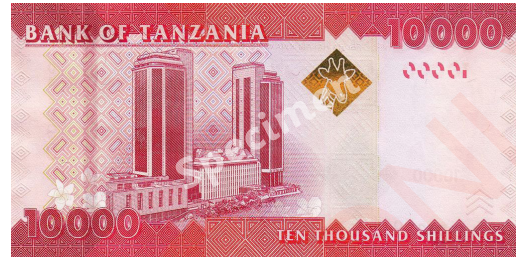
Tanzania has banknotes with different values. The value of each banknote is given by a number. You can tell the difference between one banknote and another by looking at the different marks shown on them.

### Exercise 3

Study the following Tanzanian banknotes and then answer the questions that follow.







1. Which banknote has the highest value?
2. Which banknote has the same value as that of a coin?
3. Which banknote has the lowest value?
4. Mention three identification marks which are found on the front face of the five-thousand shilling banknote.
5. Mention three identification marks which are found on the back face of the two-thousand shilling banknote.
6. Mention five identification marks found on the one-thousand shilling banknote.

### Adding money amounts

Money amounts value can be added horizontally or vertically. The short form of the word shilling is sh. In Tanzania, the short form of Tanzanian shilling is Tsh.

### Examples

1. sh 3200 + sh 1000 = sh 4200

2. sh 5000 + sh 4000 = sh 9000

3.

|       |      |
|-------|------|
| sh    | 4521 |
| + sh  | 2183 |
| <hr/> |      |
| sh    | 6704 |

### Exercise 4

Answer the following questions.

1. sh 400 + sh 100 =

2. sh 700 + sh 300 =

3. sh 600 + sh 400 =

4. sh 150 + sh 100 =

5. sh 4000 + sh 3700 =

6. sh 2438 + sh 4326 =

7. sh 1326 + sh 1318 =

8.

|       |     |
|-------|-----|
| sh    | 50  |
| + sh  | 100 |
| <hr/> |     |

10.

|       |     |
|-------|-----|
| sh    | 500 |
| + sh  | 100 |
| <hr/> |     |

9.

|       |     |
|-------|-----|
| sh    | 200 |
| + sh  | 200 |
| <hr/> |     |

11.

|       |     |
|-------|-----|
| sh    | 580 |
| + sh  | 320 |
| <hr/> |     |

$$\begin{array}{r} 12. \quad \text{sh } 900 \\ + \text{ sh } 50 \\ \hline \end{array}$$

$$\begin{array}{r} 14. \quad \text{sh } 1326 \\ + \text{ sh } 2788 \\ \hline \end{array}$$

$$\begin{array}{r} 16. \quad \text{sh } 5391 \\ + \text{ sh } 2111 \\ \hline \end{array}$$

$$\begin{array}{r} 18. \quad \text{sh } 6000 \\ + \text{ sh } 2000 \\ \hline \end{array}$$

$$\begin{array}{r} 20. \quad \text{sh } 5000 \\ + \text{ sh } 1000 \\ \hline \end{array}$$

$$\begin{array}{r} 13. \quad \text{sh } 300 \\ + \text{ sh } 400 \\ \hline \end{array}$$

$$\begin{array}{r} 15. \quad \text{sh } 7000 \\ + \text{ sh } 250 \\ \hline \end{array}$$

$$\begin{array}{r} 17. \quad \text{sh } 2362 \\ + \text{ sh } 1811 \\ \hline \end{array}$$

$$\begin{array}{r} 19. \quad \text{sh } 6381 \\ + \text{ sh } 1391 \\ \hline \end{array}$$

## Word problems involving money

### Example

Sabina kept a cock and a hen. After ten years, the hen hatched 16 chicks. She sold two chicks. One was sold at 3600 shillings and the other was sold at 6178 shillings.

How much money did Sabina get?

### Solution

$$\begin{array}{r} \text{sh } 3600 \\ + \text{ sh } 6178 \\ \hline \text{sh } 9778 \end{array}$$

Therefore, Sabina got 9778 shillings.



### Exercise 5

**Answer the following questions.**

1. Juma bought oranges for 2000 shillings and pawpaws for 4300 shillings. How much did he pay for the fruits?
2. Yohana sold eggs for 2600 shillings and a chicken for 7000 shillings. How much did he get?
3. Paula has 5600 shillings and Jane has 2500 shillings. How much money do they have altogether?
4. Rajabu sold a pen for 500 shillings, an exercise book for 1000 shillings and a ruler for 200 shillings. How much did he get by selling the items?
5. Juliana bought onions for 1685 shillings and tomatoes for 1200 shillings. How much did she pay for the items?
6. A cook bought a sack of charcoal for 3350 shillings and a sack of maize for 5600 shillings. How much did she pay for the items?
7. Mwajuma bought a pair of shoes for 3000 shillings and some clothes for 4000 shillings. How much money did she spend on the items?
8. Chacha sold his chicken for 3500 shillings and Zawadi sold her chicken for 4300 shillings. How much did they get altogether?

**Subtracting money amounts**

Subtraction that involves money can be done horizontally or vertically.

**Examples**

1. sh 4561 – sh 2364 = sh 2197

2.

|       |      |
|-------|------|
| sh    | 6986 |
| – sh  | 5434 |
| <hr/> |      |
| sh    | 1552 |

3.

|       |      |
|-------|------|
| sh    | 4180 |
| – sh  | 2494 |
| <hr/> |      |
| sh    | 1686 |

**Exercise 6**

Answer the following questions.

1. sh 5751 – sh 4030 = \_\_\_\_\_

2. sh 7620 – sh 5245 = \_\_\_\_\_

3.

|       |      |
|-------|------|
| sh    | 6430 |
| – sh  | 5240 |
| <hr/> |      |

4.

|       |      |
|-------|------|
| sh    | 2250 |
| – sh  | 1230 |
| <hr/> |      |

5.

|       |      |
|-------|------|
| sh    | 9840 |
| – sh  | 8820 |
| <hr/> |      |

6.

|       |      |
|-------|------|
| sh    | 4330 |
| – sh  | 1215 |
| <hr/> |      |

$$\begin{array}{r}
 7. \quad \text{sh } 6779 \\
 - \text{sh } 4125 \\
 \hline
 \end{array}$$

8. Mashauri went to a shop with 2000 shillings to buy some sugar. He bought one kilogram of sugar for 1225 shillings. How much money remained?
9. A shopkeeper sells a bar of soap for 2650 shillings. If a customer has a five-thousand banknote, how much change will be given back to the customer after he has bought one bar of soap?

### Revision exercise

Answer the following questions.

1. sh 7535 – sh 6025 =

2. sh 4050 – sh 2500 =

$$\begin{array}{r}
 3. \quad \text{sh } 7868 \\
 + \text{sh } 1913 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 4. \quad \text{sh } 700 \\
 \text{sh } 200 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 5. \quad \text{sh } 9883 \\
 - \text{sh } 3265 \\
 \hline
 \end{array}$$

$$\begin{array}{r}
 6. \quad \text{sh } 5101 \\
 + \text{sh } 3216 \\
 \hline
 \end{array}$$

7. Suzana got 5380 shillings on Saturday and 2010 shillings on Monday after selling onions. How much money did she get altogether?
8. Subira sold a plate of food for 4560 shillings and his sister sold a plate of food for 1760 shillings. How much money did they get altogether?



9. Msoloka had 3450 shillings. He bought clothes for 830 shillings. How much money remained?
10. Obeid needs 5500 shillings to buy a pair of shoes. He has 2600 shillings. How much more money does he need to buy the pair of shoes?
11. List five identification marks found on the five-thousand shilling banknote.

### Summary

1. The short form of the word shilling is sh.
2. Money is used to make payments and shows the value of an item or property through its price.
3. It is easier to keep banknotes than coins. For example, banknotes can be kept in a pocket.

### Vocabulary

|                 |                                                                   |
|-----------------|-------------------------------------------------------------------|
| <b>Banknote</b> | a piece of special paper representing a particular value of money |
| <b>Coin</b>     | a piece of metal representing a particular value of money         |

## Chapter Eight

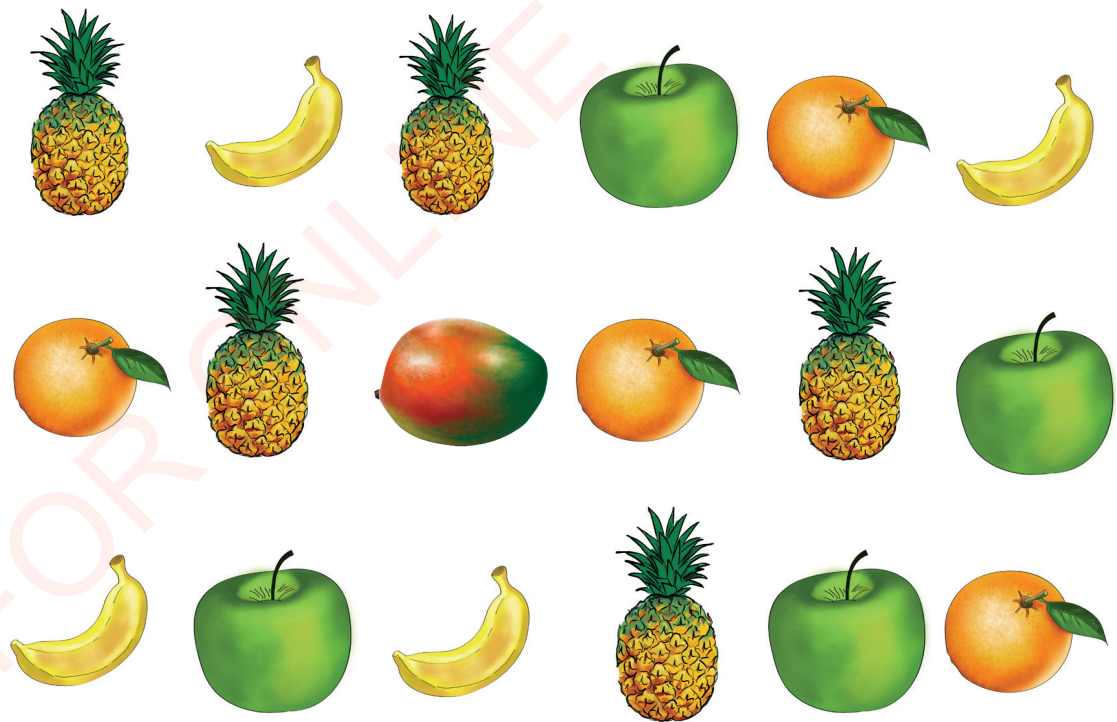
### Statistics

Statistics deals with collecting, arranging and interpreting information. The information obtained is called statistical information.

In Standard Two, you learnt how to collect and list various objects. Objects can be presented using pictures. In this chapter, you will study objects presented using pictures. You will also learn to interpret and write them.

#### Revision exercise I

Study the following pictures and then answer the questions that follow.

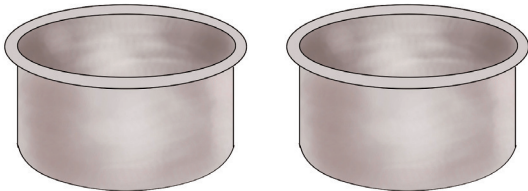


1. Name the fruits that appear more than once in the pictures.
2. Write the total number of the fruits that appear more than once in the pictures.
3. Which fruits have the largest number?
4. Which fruits are the fewest?
5. Which types of fruits are equal in number?
6. How many more pineapples are there than oranges?

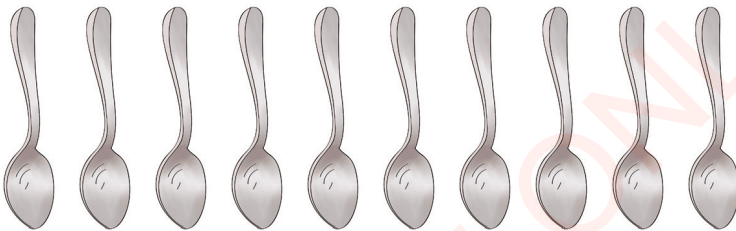
## Pictograph

A pictograph simplifies the reading, interpretation and counting of objects. It can have pictures of the same kind in groups of different quantities. It can also have pictures of different kinds in groups of the same quantity.

For example, a woman bought utensils. She bought 3 glasses, 2 cooking pans, 4 cups and 10 spoons.

| Name of the utensil | Quantity                                                                             |
|---------------------|--------------------------------------------------------------------------------------|
| Glasses             |   |
| Cooking pans        |  |



| Name of the utensil | Quantity                                                                           |
|---------------------|------------------------------------------------------------------------------------|
| Cups                |  |
| Spoons              |  |

This pictograph shows the utensils bought by the woman. The utensils are arranged in groups of the same kind. This arrangement helps in reading, interpreting and writing correct statistical information about the utensils.

### Example 1

The following table shows a farmer's maize harvests for four different years.

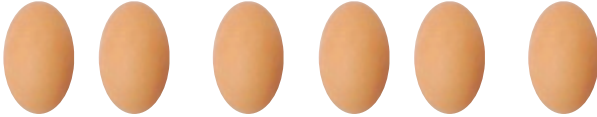
| Year            | 2012 | 2013 | 2014 | 2015 |
|-----------------|------|------|------|------|
| Number of sacks | 10   | 8    | 6    | 12   |

The following pictograph shows a farmer's maize harvests in sacks for the four years.



### Example 2

Sauda, Maria and Penina collected eggs from a poultry farm, as follows.

| Name   | Number of eggs                                                                      |
|--------|-------------------------------------------------------------------------------------|
| Sauda  |   |
| Maria  |    |
| Penina |  |

This pictograph shows pictures of objects of the same kind, which are eggs.

It helps one to read, interpret and write correct statistical information about the number of the eggs collected by each person.

### Reading, interpreting and drawing a pictograph

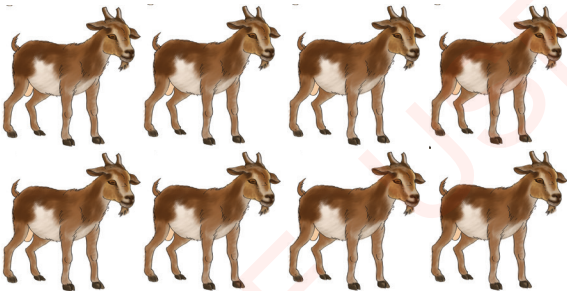
#### Steps

1. Identify the kind of picture in the pictograph for each group.
2. Count the number of pictures in relation to groups.
3. Read the information about the pictures.
4. Read, interpret and write correct statistical information about the pictures.



### Example 3

Read and interpret the following pictograph, which represents domestic animals.

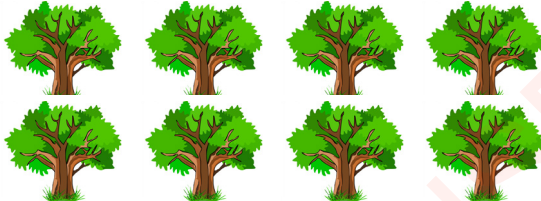
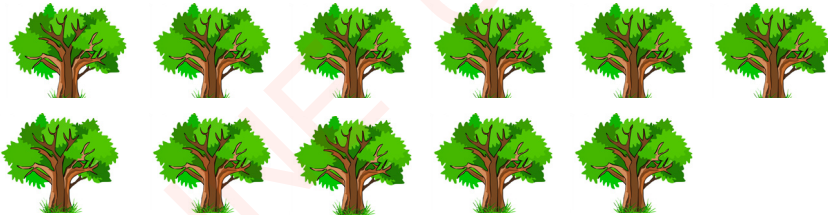
| Types of domestic animal | Quantity of domestic animals                                                        |
|--------------------------|-------------------------------------------------------------------------------------|
| Cows                     |   |
| Goats                    |   |
| Dogs                     |  |

The above pictograph shows three kinds of domestic animals namely cows, goats and dogs.

1. The total number of cows is 4.
2. The total number of goats is 8.
3. The total number of dogs is 2.

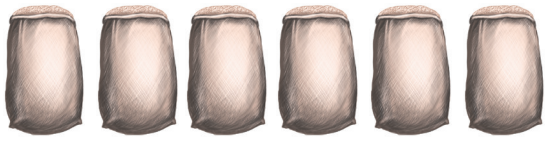
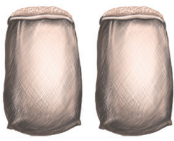
## Exercise 2

1. Read and interpret the pictograph below and then answer the questions that follow.

| Year | Number of trees planted                                                              |
|------|--------------------------------------------------------------------------------------|
| 2011 |    |
| 2012 |     |
| 2013 |  |

- How many trees were planted in 2012?
- Which year had the largest number of trees?
- What is the difference in number between the trees planted in 2012 and those planted in 2013?
- Which year had the smallest number of trees?
- How many trees were planted in all three years?

**2. Read the following pictograph and then answer the questions that follow.**

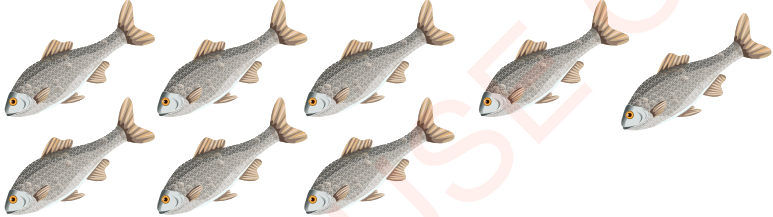
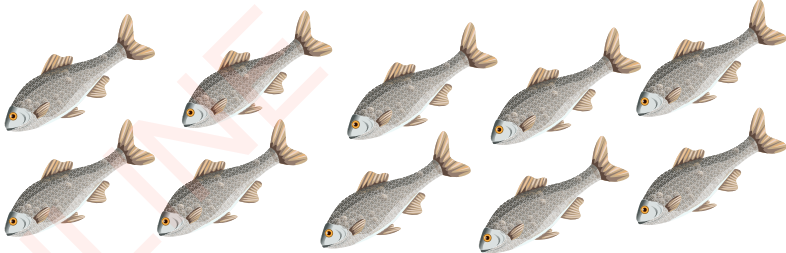
| Harvests      | Number of sacks                                                                     |
|---------------|-------------------------------------------------------------------------------------|
| Maize         |    |
| Sorghum       |    |
| Rice          |  |
| Finger millet |  |

- Write the total number of the maize sacks.
- Which harvest has the largest number of sacks?
- Which harvest has the smallest number of sacks?
- What is the total number of the sacks harvested?
- How many sacks of maize were harvested compared to those of sorghum?



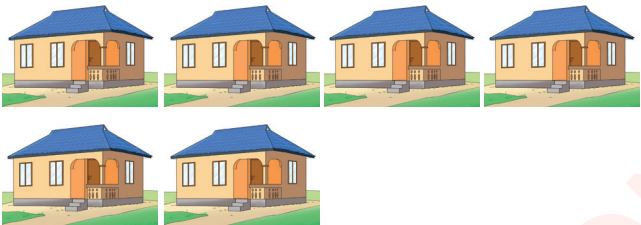
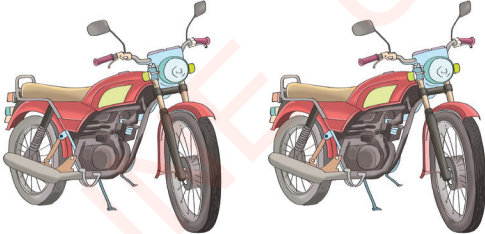
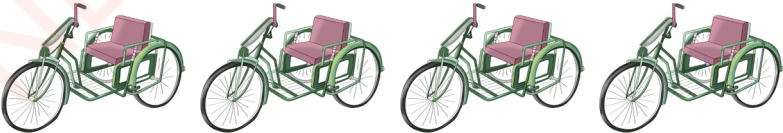
### Revision exercise

1. Read the following pictograph and then answer the questions that follows.

| Fisherman        | Number of fish                                                                       |
|------------------|--------------------------------------------------------------------------------------|
| First fisherman  |    |
| Second fisherman |    |
| Third fisherman  |  |

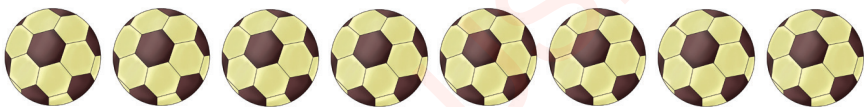
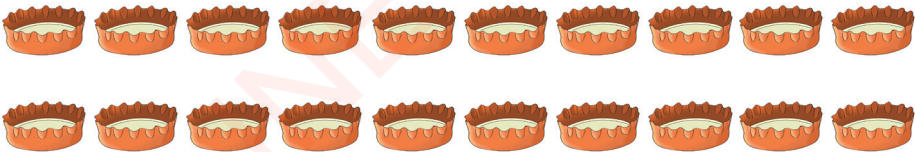
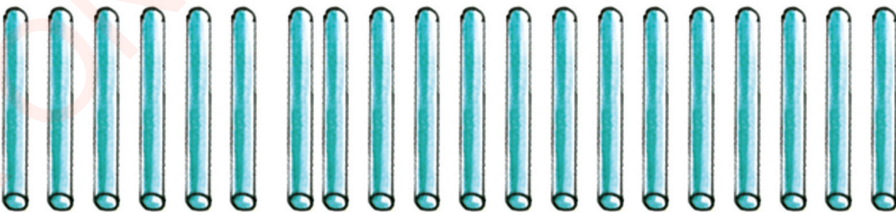
- Who got the largest number of fish?
- What is the difference between the number of fish of the first fisherman and that of the second fisherman?
- What is the total number of the fish obtained by the three fishermen?

**2. Study carefully the pictograph below and then answer the questions that follow.**

| Names        | Objects                                                                              |
|--------------|--------------------------------------------------------------------------------------|
| Houses       |    |
| Cars         |    |
| Motorcycles  |   |
| Wheel chairs |  |
| Bicycles     |  |

- a. Which group of pictures has the smallest number of objects?
- b. Which group of pictures has the largest number of objects?
- c. Which groups of pictures have the same number of objects?
- d. What is the difference in number between the houses and the motorcycles?

**3. Read the following pictograph and then answer the questions that follow.**

| Names | Objects                                                                              |
|-------|--------------------------------------------------------------------------------------|
| Salum |   |
| Anna  |  |
| Festo |  |



- a. Who has the largest number of objects?
- b. How many objects does Festo have?
- c. What is the total number of the objects?
- d. Who has the smallest number of objects?
- e. What is the difference in number between Anna's objects and those of Festo?

### Summary

1. Pictographs or pictograms are used to display statistical information.
2. Statistical information can be presented using pictures or tables.

### Vocabulary

**Statistics** the systematic presentation of objects using numbers, pictures or tables

**Pictograph** a way of showing data using pictures or symbols

# Multiplication tables of 1 – 12

1

|   |   |    |   |    |
|---|---|----|---|----|
| 1 | × | 1  | = | 1  |
| 1 | × | 2  | = | 2  |
| 1 | × | 3  | = | 3  |
| 1 | × | 4  | = | 4  |
| 1 | × | 5  | = | 5  |
| 1 | × | 6  | = | 6  |
| 1 | × | 7  | = | 7  |
| 1 | × | 8  | = | 8  |
| 1 | × | 9  | = | 9  |
| 1 | × | 10 | = | 10 |
| 1 | × | 11 | = | 11 |
| 1 | × | 12 | = | 12 |

2

|   |   |    |   |    |
|---|---|----|---|----|
| 2 | × | 1  | = | 2  |
| 2 | × | 2  | = | 4  |
| 2 | × | 3  | = | 6  |
| 2 | × | 4  | = | 8  |
| 2 | × | 5  | = | 10 |
| 2 | × | 6  | = | 12 |
| 2 | × | 7  | = | 14 |
| 2 | × | 8  | = | 16 |
| 2 | × | 9  | = | 18 |
| 2 | × | 10 | = | 20 |
| 2 | × | 11 | = | 22 |
| 2 | × | 12 | = | 24 |

3

|   |   |    |   |    |
|---|---|----|---|----|
| 3 | × | 1  | = | 3  |
| 3 | × | 2  | = | 6  |
| 3 | × | 3  | = | 9  |
| 3 | × | 4  | = | 12 |
| 3 | × | 5  | = | 15 |
| 3 | × | 6  | = | 18 |
| 3 | × | 7  | = | 21 |
| 3 | × | 8  | = | 24 |
| 3 | × | 9  | = | 27 |
| 3 | × | 10 | = | 30 |
| 3 | × | 11 | = | 33 |
| 3 | × | 12 | = | 36 |

4

|   |   |    |   |    |
|---|---|----|---|----|
| 4 | × | 1  | = | 4  |
| 4 | × | 2  | = | 8  |
| 4 | × | 3  | = | 12 |
| 4 | × | 4  | = | 16 |
| 4 | × | 5  | = | 20 |
| 4 | × | 6  | = | 24 |
| 4 | × | 7  | = | 28 |
| 4 | × | 8  | = | 32 |
| 4 | × | 9  | = | 36 |
| 4 | × | 10 | = | 40 |
| 4 | × | 11 | = | 44 |
| 4 | × | 12 | = | 48 |

5

|   |   |    |   |    |
|---|---|----|---|----|
| 5 | × | 1  | = | 5  |
| 5 | × | 2  | = | 10 |
| 5 | × | 3  | = | 15 |
| 5 | × | 4  | = | 20 |
| 5 | × | 5  | = | 25 |
| 5 | × | 6  | = | 30 |
| 5 | × | 7  | = | 35 |
| 5 | × | 8  | = | 40 |
| 5 | × | 9  | = | 45 |
| 5 | × | 10 | = | 50 |
| 5 | × | 11 | = | 55 |
| 5 | × | 12 | = | 60 |

6

|   |   |    |   |    |
|---|---|----|---|----|
| 6 | × | 1  | = | 6  |
| 6 | × | 2  | = | 12 |
| 6 | × | 3  | = | 18 |
| 6 | × | 4  | = | 24 |
| 6 | × | 5  | = | 30 |
| 6 | × | 6  | = | 36 |
| 6 | × | 7  | = | 42 |
| 6 | × | 8  | = | 48 |
| 6 | × | 9  | = | 54 |
| 6 | × | 10 | = | 60 |
| 6 | × | 11 | = | 66 |
| 6 | × | 12 | = | 72 |

**7**

$$\begin{aligned} 7 \times 1 &= 7 \\ 7 \times 2 &= 14 \\ 7 \times 3 &= 21 \\ 7 \times 4 &= 28 \\ 7 \times 5 &= 35 \\ 7 \times 6 &= 42 \\ 7 \times 7 &= 49 \\ 7 \times 8 &= 56 \\ 7 \times 9 &= 63 \\ 7 \times 10 &= 70 \\ 7 \times 11 &= 77 \\ 7 \times 12 &= 84 \end{aligned}$$

**8**

$$\begin{aligned} 8 \times 1 &= 8 \\ 8 \times 2 &= 16 \\ 8 \times 3 &= 24 \\ 8 \times 4 &= 32 \\ 8 \times 5 &= 40 \\ 8 \times 6 &= 48 \\ 8 \times 7 &= 56 \\ 8 \times 8 &= 64 \\ 8 \times 9 &= 72 \\ 8 \times 10 &= 80 \\ 8 \times 11 &= 88 \\ 8 \times 12 &= 96 \end{aligned}$$

**9**

$$\begin{aligned} 9 \times 1 &= 9 \\ 9 \times 2 &= 18 \\ 9 \times 3 &= 27 \\ 9 \times 4 &= 36 \\ 9 \times 5 &= 45 \\ 9 \times 6 &= 54 \\ 9 \times 7 &= 63 \\ 9 \times 8 &= 72 \\ 9 \times 9 &= 81 \\ 9 \times 10 &= 90 \\ 9 \times 11 &= 99 \\ 9 \times 12 &= 108 \end{aligned}$$

**10**

$$\begin{aligned} 10 \times 1 &= 10 \\ 10 \times 2 &= 20 \\ 10 \times 3 &= 30 \\ 10 \times 4 &= 40 \\ 10 \times 5 &= 50 \\ 10 \times 6 &= 60 \\ 10 \times 7 &= 70 \\ 10 \times 8 &= 80 \\ 10 \times 9 &= 90 \\ 10 \times 10 &= 100 \\ 10 \times 11 &= 110 \\ 10 \times 12 &= 120 \end{aligned}$$

**11**

$$\begin{aligned} 11 \times 1 &= 11 \\ 11 \times 2 &= 22 \\ 11 \times 3 &= 33 \\ 11 \times 4 &= 44 \\ 11 \times 5 &= 55 \\ 11 \times 6 &= 66 \\ 11 \times 7 &= 77 \\ 11 \times 8 &= 88 \\ 11 \times 9 &= 99 \\ 11 \times 10 &= 110 \\ 11 \times 11 &= 121 \\ 11 \times 12 &= 132 \end{aligned}$$

**12**

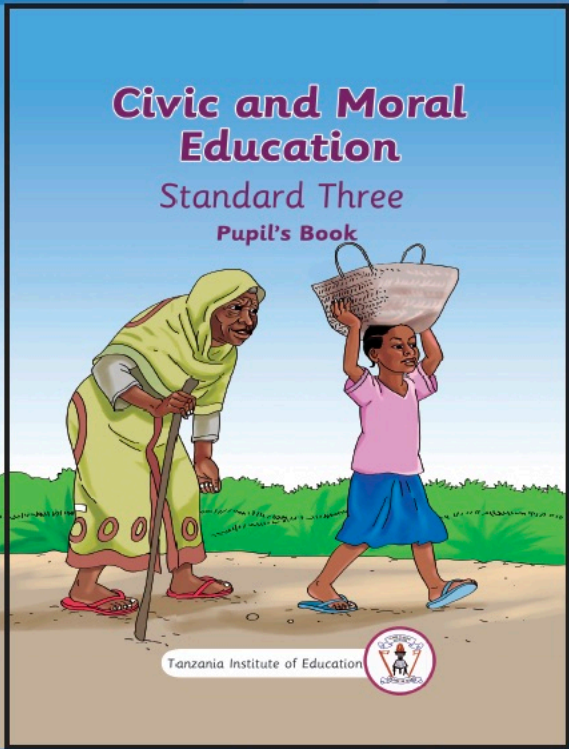
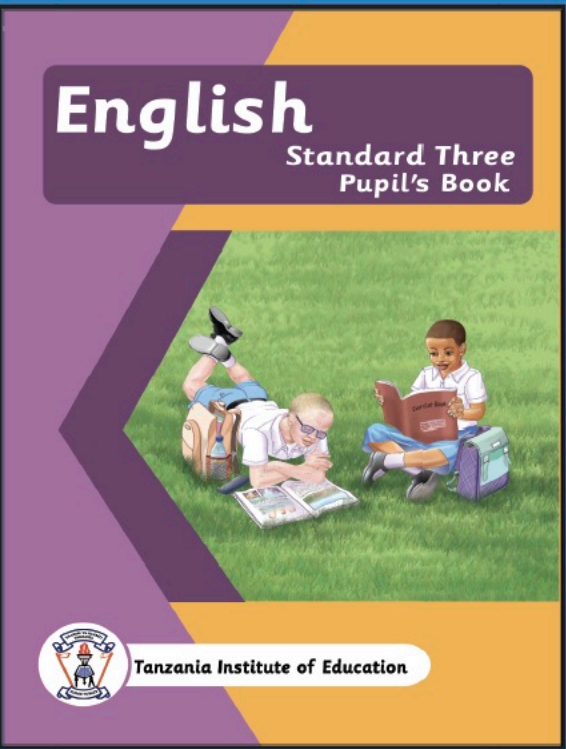
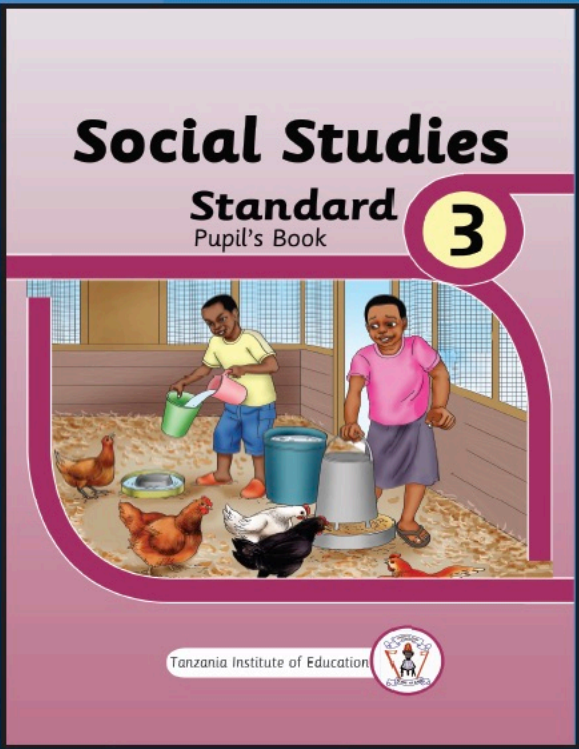
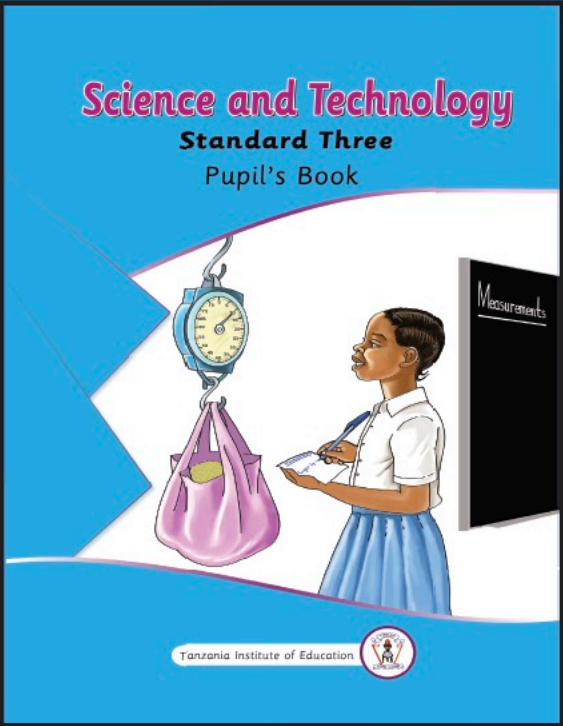
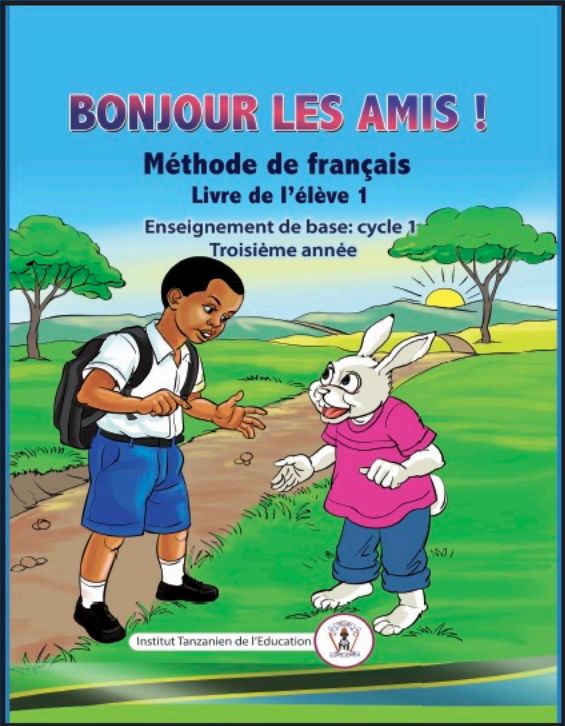
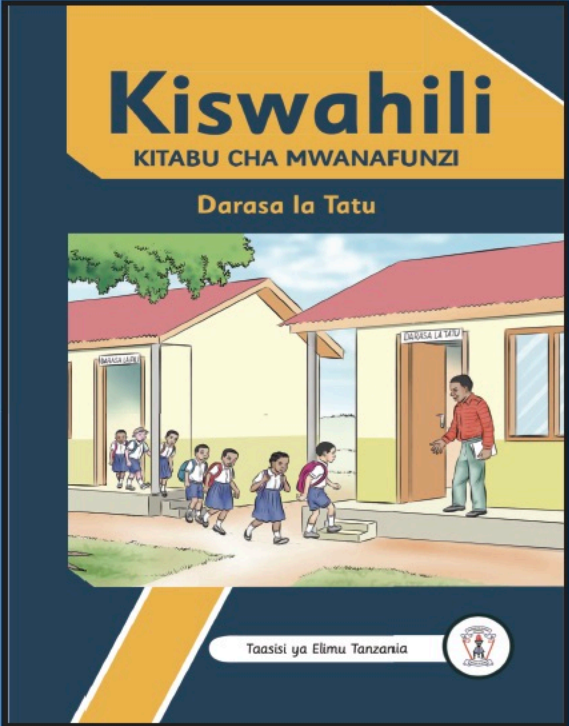
$$\begin{aligned} 12 \times 1 &= 12 \\ 12 \times 2 &= 24 \\ 12 \times 3 &= 36 \\ 12 \times 4 &= 48 \\ 12 \times 5 &= 60 \\ 12 \times 6 &= 72 \\ 12 \times 7 &= 84 \\ 12 \times 8 &= 96 \\ 12 \times 9 &= 108 \\ 12 \times 10 &= 120 \\ 12 \times 11 &= 132 \\ 12 \times 12 &= 144 \end{aligned}$$



Other Books by  
Tanzania Institute of Education



Standard Three



ISBN 978-9987-09-017-4



9 789987 090174