MATHEMATICS

PRIMARY LEARNER'S BOOK

Year

Version edited in 2023

FOREWORD

Dear Pupil,

Rwanda Basic Education Board is honoured to present to you this Mathematics book for Primary Three (P3) which serves as a guide to competence-based teaching and learning to ensure consistency and coherence in the learning of Mathematics subject.

The Rwandan educational philosophy is to ensure that you achieve full potential at every level of education which will prepare you to be well integrated in society and exploit employment opportunities.

The government of Rwanda emphasizes the importance of supporting teaching and learning materials with the syllabus to facilitate your learning process. Many factors influence what you learn, how well you learn and the competences you acquire. Those factors include the instructional materials available among others. In this book, special attention was paid to the activities that facilitate the learning process in which you can develop your ideas and make new discoveries during concrete activities carried out individually or with peers.

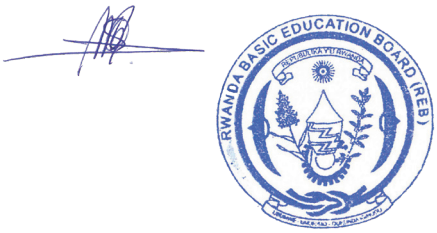
In competence-based curriculum, learning is considered as a process of active building and developing knowledge and meanings by the learner where concepts are mainly introduced by an activity, a situation or a scenario that helps the learner to construct knowledge, develop skills and acquire positive attitudes and values.

For effective use of this textbook, your role is to:

- Work on given activities which lead to the development of skills;
- Share relevant information with other learners through presenta¬tions, discussions, group work and other active learning techniques such as role play, case studies, investigation and research in the li-brary, on internet or outside;
- Participate and take responsibility for your own learning;

- Draw conclusions based on the findings from the learning activities.

I wish to sincerely extend my appreciation to the people who contributed towards the development of this textbook, particularly REB staff who organized the whole process from its beginning. Special gratitude goes to teachers, illustrators and designers who carefully worked to successful completion of this text book. Any comment or contribution would be welcome for the improvement of this textbook for the next edition.



Dr. MBARUSHIMANA Nelson
Director General

ACKNOWLEDGEMENT

I wish to sincerely extend my special appreciation to people who played a major role in development and editing of this Mathematics book for Primary Three (P3). It would not have been successful without the participation of different partners that I would like to express my deep gratitude.

My thanks go to the Rwanda Basic Education Board leadership and staff who were involved and supervised the whole activity of in-house textbook Elaboration.

I also wish to extend my appreciation to teachers, lecturers, and different education experts for their valuable support.

Murungi Joan
Head of CTLR Department

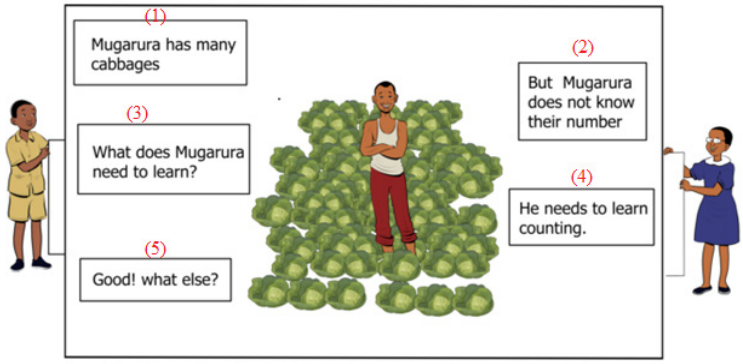
TABLE OF CONTENTS

UNIT 1

NUMBER UP TO 2 000

1.0 Introductory activity

Read the dialogue of Kamana and Keza.

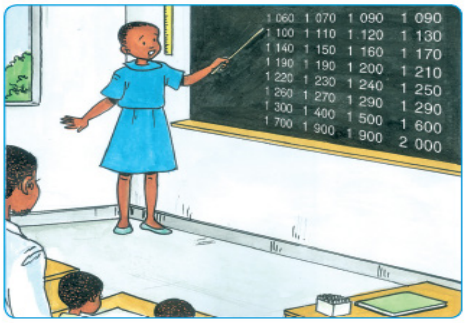


What does Mugarura need to learn?

1.1 Reading numbers up to 2000

Activity 1.1.1

Read the numbers:



100, 503, 678, 880, 900,

1 060, 1 070, 1 080, 1090

1 100, 1 110, 1 120, 1130.

Example:

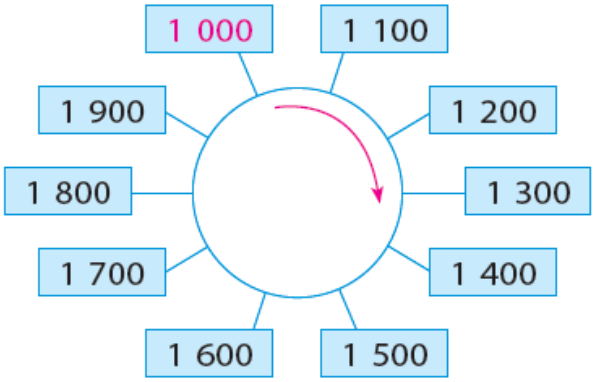
1060: One thousand sixty.

1178: One thousand one hundred and seventy-eight.

1999: One thousand nine hundred and ninety-nine.

Activity 1.1.2

Read the following numbers. Start by the number with the red colour.



Example:

1000: One thousand.

1200: One thousand two hundred.

1500: One thousand five hundred. .

Application activity 1.1

In the box, there are small papers with the following numbers:

1 234 , 1 908, 1 567, 1 110

Take one paper and ask your friend to read aloud the number.

1.2 Writing numbers up to 2000 in figures

Activity 1.2.1

- For each one, take the 4 number formation cards shown here.
- Arrange the cards to make a number between 1 000 and 2 000.

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

Write the formed number in figures and read it aloud to your friends.

Example:

Keza takes the following digits: 9-4-7-1. Keza arranges them as follows:

1	4	9	7

The formed number is written as **1497**: One thousand four hundred and ninety-seven.

Activity 1.1.2

Look at the numbers, count and find the missing numbers. Read and write them in figures.

a) 1 000 | 1100 | 1 200 | ☐ | 1 400 | ☐ | 1 600 | ☐ | 1 800 | ☐ | 2 000

b) 100 | 200 | 300 | ☐ | 500 | ☐ | 700 | ☐ | 900 | ☐ | 1 100

c) 50 | 200 | 350 | 500 | 650 | ☐ | 950 | ☐ | 1 250 | ☐ | 1 550

Application activity 1.2

Try these:

1. Write in figures all numbers between:
   a) 1 990 and 2 000
   b) 1 240 and 1250 and read them aloud.
2. Read aloud the following numbers.
   a) 1 924 b) 1 499

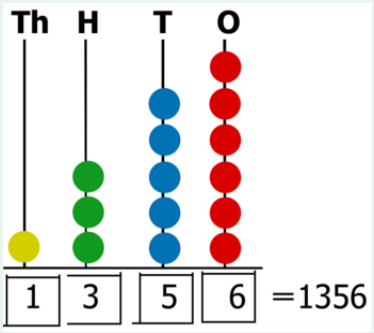
What have you leant in this lesson?

1.3 Place value of digits of numbers up to 2000

Activity 1.1.3

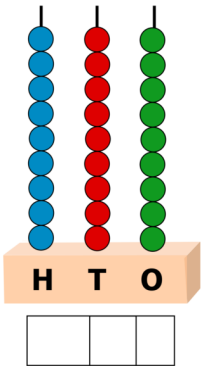
Write the correct number shown on the abacus.

Example:



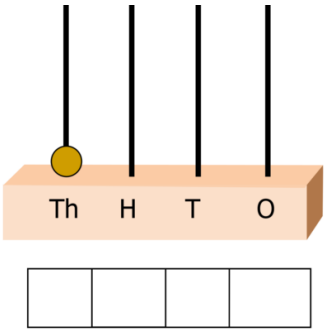
Try these:

a)



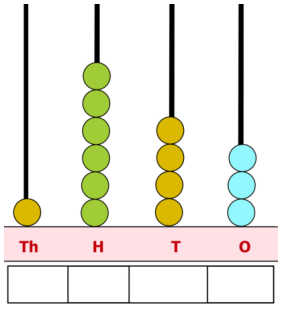
= ....

b)



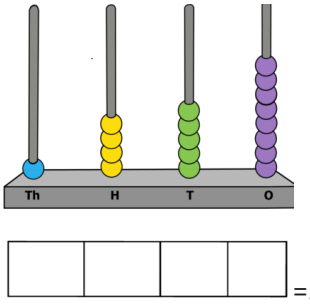
=...

c)



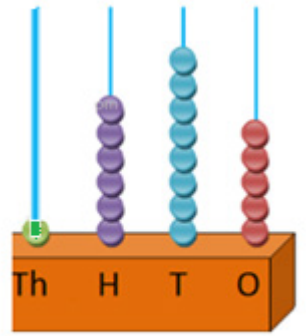
=....

d)



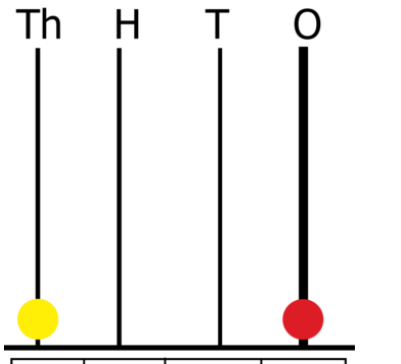
=....

e)



=....

f)



=....

Activity 1.3.2

Fill the following numbers in the table of place values:

Example: 1456

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)
1	4	5	6

Try these:

a) 1 239 b) 1 699 c) 1 479 d) 1 953 e) 1 974

Activity 1.3.3

Fill in thousands, hundreds, tens and ones

Example 1456 = **1** thousand **4** hundreds **5** tens **6** ones.

a) 1759 = ___ thousand___Hundreds _____tens _____ ones.

b) 1239 = ___ thousand___Hundreds _____tens _____ ones.

c) 1197 = ___ thousand___Hundreds _____tens _____ ones.

d) 1597 = ___ thousand___Hundreds _____tens _____ ones.

Application activity 1.3

1. Write the place value of the underlined number.

Example 1 45<u>6</u>

Thousands	Hundreds	Tens	Ones
1	4	5	6

The place value of 6 is ones.

Try these:

a) 1 7<u>9</u>5 b) 1 <u>3</u>24 c) 1 2<u>9</u>9 d) <u>1</u> 179

2. Write the numbers in figures:

Example

1 Thousand, 7 Hundreds, 9 Tens, 5 Ones

In figures: **1 795**

Try these:

a) 1 thousand, 9 hundreds, 9 tens and 9 ones,: _____
b) 1 thousand, 6 hundreds, 4 tens, 9 ones: _____
c) 1 thousand, 3 hundreds, 9 tens, 5 ones: ____
d) 1 thousand, 9 hundreds, 7 tens , 5ones : ____
e) 1 thousand, 2 hundreds 9 tens, 5 ones : ____

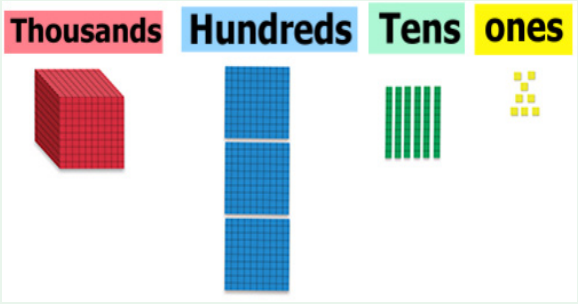
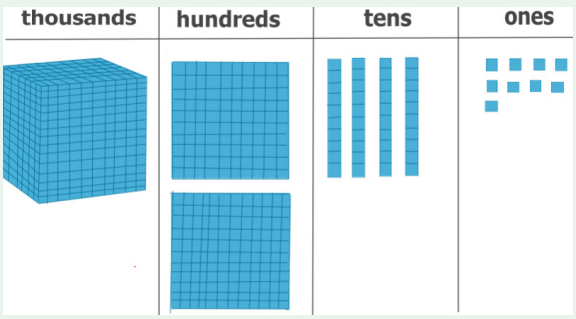
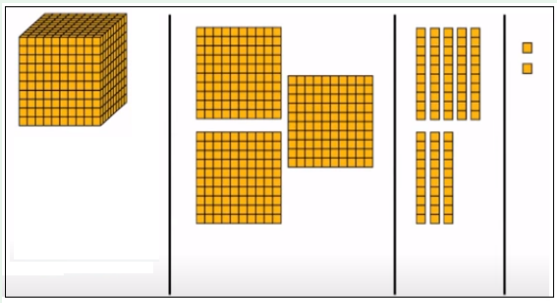
What have you leant in this lesson?

1.4 Expanded form of a number between 1000 and 2000

Activity 1.4.1

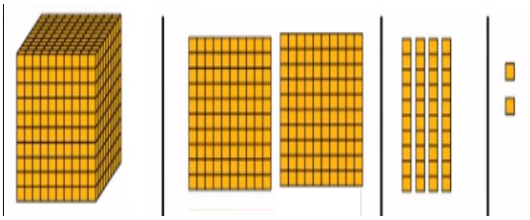
Complete the empty boxes

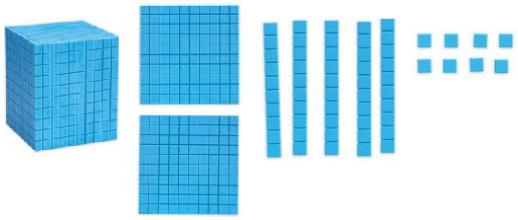
Example

Number presented by base ten blocks	Expanded form of the number
	1368 =1000+300+60+8
	____
	____

Activity 1.4.2

Fill in the missing number:

	1000+200+40+2 = 1 thousand 2 hundreds 4 tens 2 ones = 1242

	___thousand 2 hundreds ___tens ___ones =___+ ___+___+___ =1258

Activity 1.4.3

The expanded form of 1 675 is 1000+600+70+5.

Now complete the following:

1242 = ___thousand ___hundreds___tens___ones .

In the expanded form, 1242 = ___+___+___+___

Application activity 1.4

1. Break down the number into ones, tens, hundreds and thousands.

   1675 = 1 000 + 600 + 70 + 5

   1675 =___thousand___hundreds ___tens___ones

2. Write the number 1 874 into thousands, hundreds, tens, and ones.

   1 874 =___ thousand____hundreds _____tens____ ones

3. Use the table of place values and write the following numbers in expanded form.

Example 1 768

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)
1	7	6	8

1768= 1 thousand 7 hundreds 6 tens 8 ones = 1000 + 700+ 60 +8

Now, try these:

a) 1 265 =	c) 1 645 =	e) 1 997 =
b) 1 799 =	d) 1 436 =	f) 1 956 =

What have you leant in this lesson?

1.5 Writing numbers in words up to 2000

The number 1236 = 1 thousand 2 hundred 3 tens 6 ones.

It is expanded as 1236 =1000 +200 + 30 + 6.

a) Complete by **hundred** or **thousand**

1236	=	1000	One ___
+		200	Two ___
+		30	Thirty
+		6	Six

b) Circle the correct sentence:

1236 in words: one thousand two hundred and thirty-six.

1236 in words: one thousand two hundreds and three tens-six.

Activity 1.5.2

Complete the table

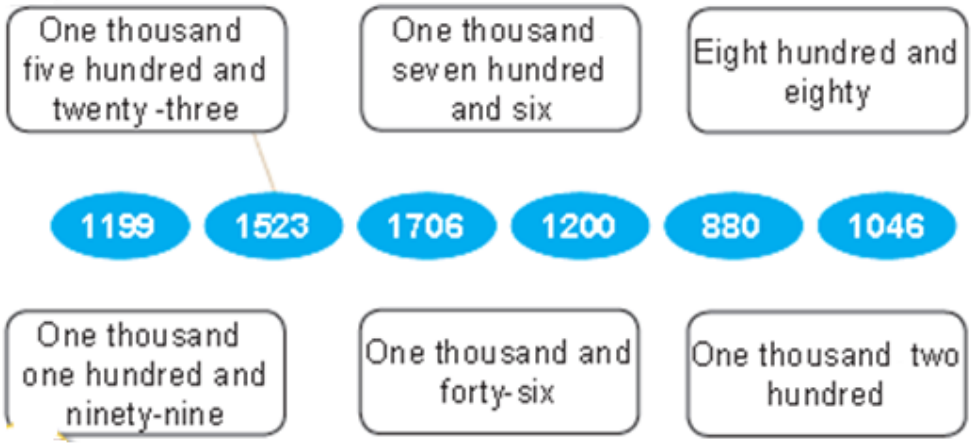
Number	Expanded form	Number in words
1 795	1000+700+90+5	__
1 324	__	__
1 299	__	One thousand two hundred and ninety-nine
1706	__	__

Application activity 1.5

1) Write the following numbers in words:

a) 1239 b) 1719 c) 1456 d) 1599

2) Match the number with the correct words.

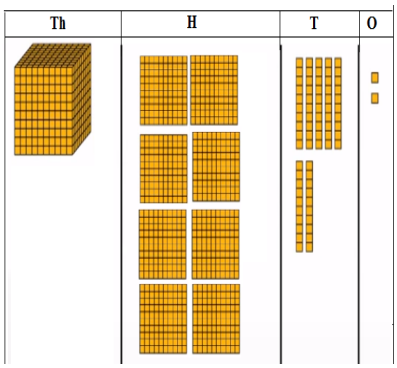
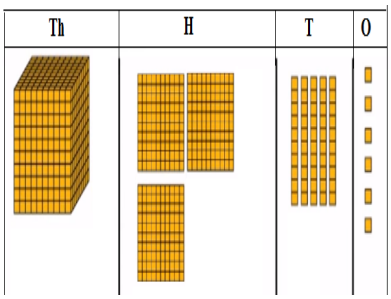


What have you leant in this lesson?

1.6 Comparing numbers less than or equal to 2000

Activity 1.6.1

Look at the table of place values and numbers. Compare the two numbers (1872 and 1356).

Place values		
Number	1872	1356

Complete by **greater than** or **less than**

a) 1872 is _____1356

b) 1356 is_____1872

Activity 1.6.2

Compare numbers using <, > or =

Example 1329 ____ 1408

Thousands	Hundreds	Tens	Ones
1	3	2	9
1	4	0	8

Answer: 1329 < 1408

Try these:

a) 1 356 ☐ 1 536

b) 1 905 ☐ 1 805

c) 1 037 ☐ 1 037

d) 1 709 ☐ 1 790

e) 1 206 ☐ 1 267

f) 1 670 ☐ 1 670

Activity 1.6.3

Look at the number of men, women, youth and the number of children in the table below.

Who are more or less than the others?

Men	**Women**	**Youth**	**Children**
1 395	1 421	1 432	999

Example Number of men: 1395, Number of women: 1421

Thousands	Hundreds	Tens	Ones
1	3	9	5
1	4	2	1

As 1421>1395, women are more than men.

Try these:

a) Compare the numbers of children and men.

b) Compare the numbers of women and children.

c) Compare the numbers of men and youth.

d) Compare the numbers of women and youth.

Application activity 1.6

Use <, > or = to compare the following numbers:

a) 1 905 ☐ 1 905

b) 1 714 ☐ 1 797

c) 1 926 ☐ 1 673

d) 1 532 ☐ 1 325

e) 1 647 ☐ 1 647

f) 1 351 ☐ 1 513

What have you leant in this lesson?

1.7 Arranging numbers up to 2000

Arranging numbers less than or equal to 2000 in increasing order (from the smallest to the biggest number)

Activity 1.7.1

Arrange the numbers in **increasing** order.

Example 1 649, 1836, 1598, 1752

Thousands	Hundreds	Tens	Ones
1	6	4	9
1	8	3	6
1	5	9	8
1	7	5	2

From the smallest to the biggest number, we have: 1 598, 1649, 1752, 1836

Now try these:

a) 1953,1 395, 10593

b) 1 613, 1 136, 1479

Arranging numbers less than or equal to 2000 in decreasing order (from the biggest to the smallest number)

Activity 1.7.2

Arrange numbers in **decreasing** order.

Example 1 897, 1 897, 1789

Thousands	Hundreds	Tens	Ones
1	9	8	7
1	8	9	7
1	7	8	9

Answer: From the biggest to the smallest number, we have:
1 987, 1 897, 1789

Try these:

Arrange the following numbers in **decreasing** order

1 769	1 976	1 679	1 796	1 967	1 697	1 919

Application activity 1.7

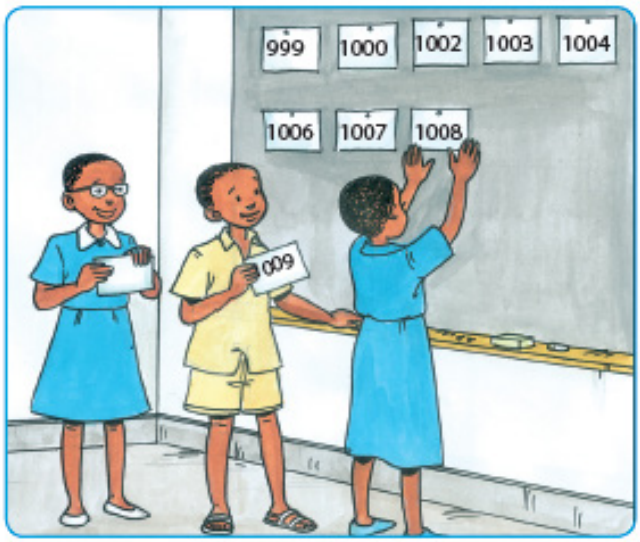
1. Using number cards, arrange the given numbers in increasing order. Follow the example on the picture.

A)

1 596	1 569
1 965	1 956
1 659	1 695

B)

1 475	1 745
1 457	1 754
1 574	1 547



1.8 Addition of numbers whose sum does not exceed 2000

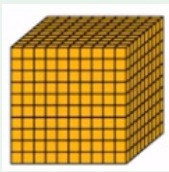
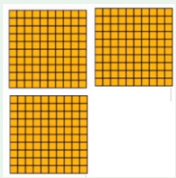
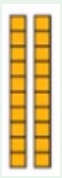
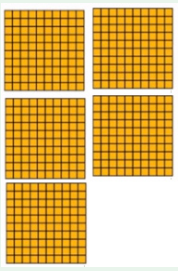
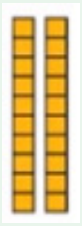
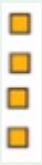
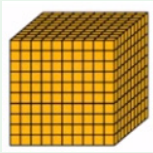
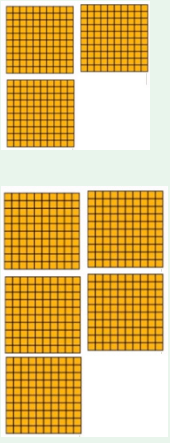
1.8.1 Addition without carrying

Activity 1.8.1

Add numbers:

Example 1 : 1325 + 524=

We can use the base ten blocks for each number and count the total:

		Thousands	Hundreds	Tens	Ones	Number in figure
	First number					1 3 2 5
+	Second number					5 2 4
	Sum					1 8 4 9

Example 2 : 1 324 + 675=

We can add by using the place value table: start by the ones, tens, then hundreds and end by thousands.

Thousands	Hundreds	Tens	Ones
1	3	2	4
+ ↓	6	7	5
1	9	9	9

1 324 + 675 = 1 999

Example 3:

We can add vertically: **1234 + 245 = ?**

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

Ones: 4 plus 5 equals 9

Tens: 3 plus 4 equals 7

Hundreds: 2 plus 2 equals 4

Thousands: I bring down 1

Therefore, 1234 + 245 = 2479.

The way of adding numbers downwards is called the standard written method.

Now, use any method and try these:

a) 1 156 + 823 =

b) 1543 + 456 =

c) 1235 + 704 =

d) 972 + 1 017 =

e) 675 + 1 323 =

f) 794 + 1 002 =

Application activity 1.8.1

1. Add vertically the numbers: Remember to add first the ones, then tens, hundreds and end by thousands.

a) 1 256 + 421

b)1 523 + 376

c)1 435 + 543

d) 1 124 + 872

e)1 154 + 549

2. Add the following:

a) 1 234 + 763 =

b) 567 + 134 =

c) 990 + 1 009 =

d) 1 099 + 900 =

e) 765 + 1 213 =

f) 1 002 + 691 =

What have you leant in this lesson?

1.8.2 Addition with carrying

Activity 1.8.2

Add numbers:

Example: 1425 + 575 =

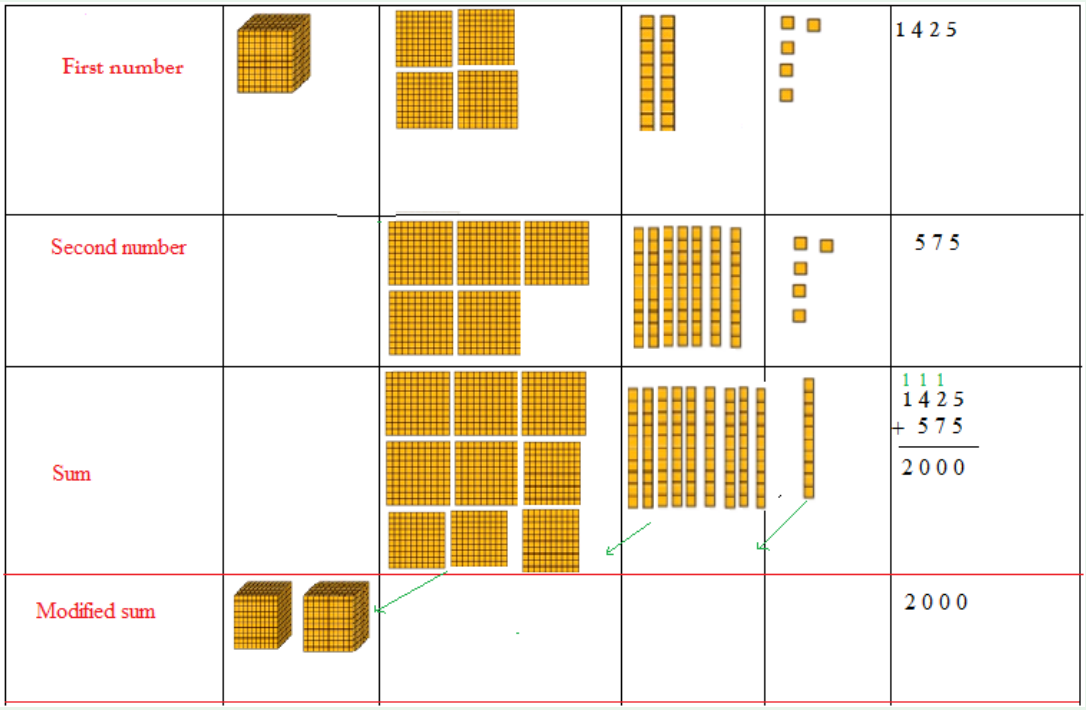
a) To get the answer, we can use the vertical addition in the place value table:

Finally, add thousands: 1+1= 2	Then,add hundreds:4+5 =9. 9+1=10, write 0 under hundreds, and carry1 to thousands.	Second, add tens,7+2=9 9+1= 10 write 0 under tens and carry 1 to hudreds.	First add ones, 5+5=10. Write 0 and carry 1 to tens.

Thousands	Hundreds	Tens	Ones
1	1	1	1
1	4	2	5
+	5	7	
2	0	0	0

Therefore, 1425 + 575 = 2000

b) We can use the base ten blocks:



Now, use one method and try these:

a) 934 + 799 =

b) 967 + 999 =

c) 999 + 1 001 =

d) 1 099 + 897 =

Activity 1.8.3

Use the following number cards and cards with + and = and do the task below:

A)	924	905	834	952	642	721	813
B)	897	997	789	879	858	999	979
C)	1 623	1 831	1 902	1 821	1 500	1 720	1 792

- Take one number card from A ;
- Take the card with addition sign + ;

- Take the number card from B which is below the one you chose from A
- Take the card with the sign [=];
- Then, select the correct answer from the cards in C.

Example:

924 + 897 = 1 821

Application activity 1.8.2

1. Add:

a) 1 197 + 654

b) 1 093 + 379

c) 1 395 + 499

d) 1 541 + 379

e) 1 154 + 779

2. Add the following numbers:

a) 1 056 + 899 =

b) 797 + 1 197 =

c) 1 235 + 757 =

d) 972 + 969 =

e) 675 + 979 =

f) 1 239 + 476 =

What have you leant in this lesson?

1.9 Word problems involving addition whose sum does not exceed 2000

Activity 1.9

Look at the following example and do the next activities.

Example:

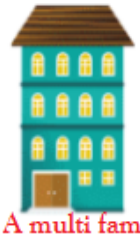
Last year Muhizi harvested 799 pineapples. This year he harvested 967 pineapples. Find the total number of pineapples he harvested in two years.

Given	Question	Solution
Pineapples of last year: 799 Pineapples of this year: 967	The total number of the harvested pineapples in two years	The total number of the harvested pineapples in two years is calculated as follows: 967+799 = **1765** 1 1 967 + 799 1 766

Try these:

1) In the city, there are 754 multi family houses and 969 single family houses. Find the total number of houses of the city.

A single family house



A multi family house

2) Kamali sold 1006 mangoes and Keza sold 979 mangoes in the market. How many mangoes were sold altogether?

3) There are 997 boxes of white chalk and 967 boxes of coloured chalk. Find the total number of boxes of chalk in the school.

4) Records of patients in the hospital were taken as follows: women were 799, children were 356 and men were 795. Find the total number of all patients at that hospital.

Application activity 1.9

1. In the main hall, there are 976 women and 779 men. How many people are in that hall?
2. In our cell, there are 357 women, 656 children, 337 men and 731 youth. How many people are in our cell?
3. In the bank, there are customers in the following category: 969 women, 656 men and 245 youth. How many customers are in the bank altogether?
4. In the sector, there are 675 modern houses, 199 flats and 992 low cost houses. How many houses are in the sector?

What have you leant in this lesson?

1.10 Subtraction of numbers less than or equal to 2000

1.10.1 Subtraction without borrowing of numbers less than or equal to 2000

Activity 1.10.1

Subtract:

Example: 1999 - 1675 = ?

a) We can use a **table of place values**:

Thousands	Hundreds	Tens	Ones
1	9	9	9
– 1	6	7	5
0	3	2	4

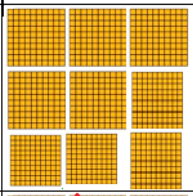
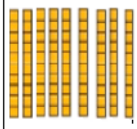
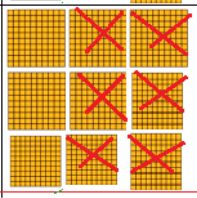
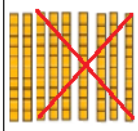
b) We can **subtract vertically**:

$$\begin{array}{r} 1\ 999 \\ -\ 1\ 675 \\ \hline 0\ 324 \end{array}$$

Ones: 9 minus 5 equals 4
Tens : 9 minus 5 equals 4
Hundreds: 9 minus 5 equals 4
Thousands: 9 minus 5 equals 4

Therefore: 1999 – 1675 = 324

c) We can use the base ten blocks: 1999 - 1675 =

	Thousnds	Hundreds	Tens	Ones	Number in figures
First number					1 9 9 9
Subtract (Take away and count the remaining blocks)					1999-1675 = 324 Vertically 1 9 9 9 - 1 6 7 5 0 3 2 4

Now, use one method and try these:

a) 1 975 – 1 543

b) 1 694 – 1 372

c) 1 799 – 1 249

d) 1 956 – 1 421 =

e) 1 599 – 1 376 =

Application activity 1.10.1

1. Work out the following:

a) 1 543 – 421

b) 1 835 – 704

c) 1 972 – 1 070

d) 1 675 – 1 323

e) 1 979 – 863

2. Subtract:

a) 1 1995 - 763 =

b) 1 567 - 1 341 =

c) 1 990 - 1 090 =

d) 1 999 - 979 =

e) 1 765 - 1 213 =

f) 1 956 - 923 =

What have you leant in this lesson?

1.10.2 Subtraction with borrowing of numbers less than or equal to 2000

Activity 1.10.3

Carry out the subtraction:

Example: 1282 – 967 =

a) We can subtract vertically in a place value table:

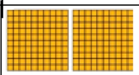
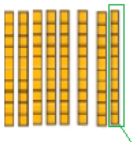
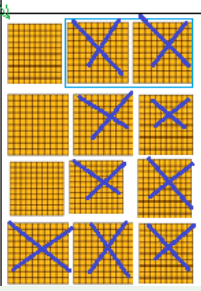
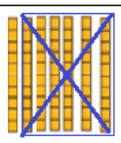
1 282

\- 967

Thousands	Hundreds	Tens	Ones
	2-9 is impossible. Borrow 1 from thousands and get 12. Then 12-9=3	7-6=1	2-7 is impossible. Borrow 1 ten from 8 and get 12. Then 12-7=5
	12	*7*	*12*
~~1~~	**2**	~~8~~	**2**
-	**9**	6	7
	3	1	5

Therefore, 1282 – 967 = 315

b) We can use the base ten blocks:

Step	Thousnds	Hundreds	Tens	Ones	Number in figures
First number					1 2 8 2
First number modified Subtract (take away blocks and count the remaining blocks)					1282 - 967= 315 Vertically 12 12 0 7 1 2 8 2 - 9 6 7 3 1 5

Therefore, 1282 – 967 = 315

Now, use one method and try these:

a) 1 243 − 979 b) 1 613 − 1 379 c) 1 345 − 769 d) 1 524 − 699 e) 1 241 − 979

Application activity 1.10.2

1. Use the following number cards and cards with − and = and do the task below:

A)	1 124	1 005	1 234	1 326	1 421	2 000	1 300
B)	1 099	987	978	879	786	1 979	1 299
C)	1	25	256	447	21	18	635

- Take one number card from A ;
- Take the card with subtraction sign − ;
- Take the number card from B below the card you chose from A;
- Take the card with the sign = ;
- Then, select the correct answer from the cards in C.

Example: 1282 – 967 =

1 124 − 1 099 = 25

2. Subtract the following numbers:

a) 1 567 − 1 399 b) 1 679 − 1 199 c) 1 799 − 999 d) 1 009 − 969 e) 1 234 − 979

3. Subtract the following numbers:

a) 1 034 – 799 =
b) 1 123 – 979 =
c) 1 234 – 1 196=
d) 1 345 – 997 =
e) 1 456 – 1 299 =
f) 1 789 – 1 236 =

What have you leant in this lesson?

1.11 Word problems involving subtraction of numbers less than or equal to 2000

Activity 1.11

Look at the given example and do the following activities

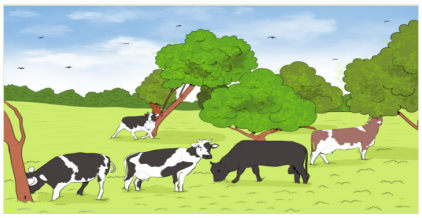
Example:

In my school, there are 1791 pupils. If there are 999 boys, find the number of girls in the school.

Given	Question	Solution
The number of all pupils is 1791 The number of boys is 999	The number of girls	The number of girls is calculated as follows: 1791 – 999 = 792 16 18 0 6 8 11 ~~1791~~ – 999 ~~0~~792 There are 792 girls.

1) Kaneza planted 1 917 trees. Then, 769 trees were eaten by cows.

How many trees remained?



2) Mutoni had 1 231 cows. She gave 523 cows to her friends. How many cows did Mutoni remain with?

3) A manufacturing company produced 1 721 sacks of sugar. 179 sacks of sugar were sold to Rukundo. Find the number of remained sacks.

Application activity 1.11

1) My school decided to plant 2 000 trees in one year. Today, 1 099 trees have been planted. How many trees are remaining to be planted?

2) The group members made 1 911 bricks. After one week, 975 bricks were used to build a poultry house. Find the number of the remaining bricks.

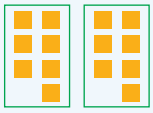
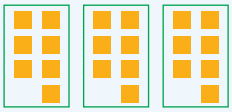
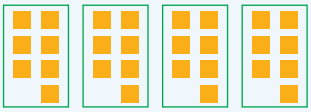
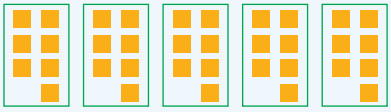
3) In my school, there are 1 921 people. School staff members are 124. Find the number of pupils in the school.

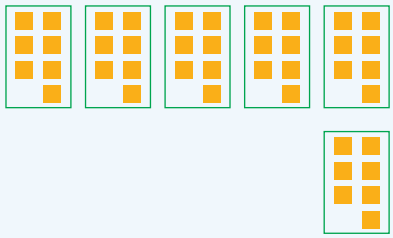
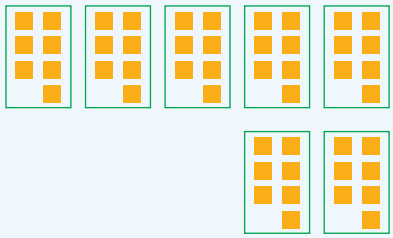
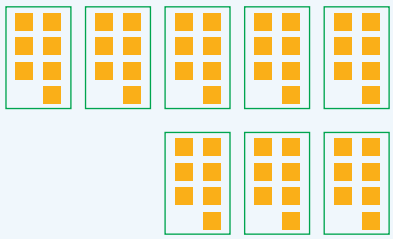
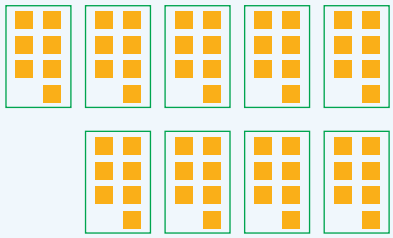
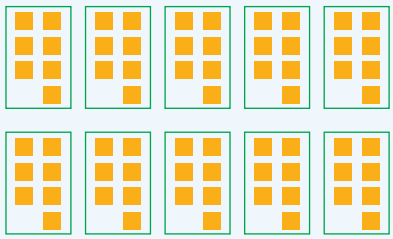
What have you leant in this lesson?

1.12 Multiples of 7 up to 70

Activity 1.12.1

1. Form different groups of 7 counters (beans or bottle tops).
2. Count the number of counters for 2 groups, 3 groups, 4 groups, etc.
3. Complete the total number of counters of the groups in the following table:

7		$1 \times 7 =$
$7 + 7 = 14$		$2 \times 7 =$
$7 + 7 + 7 = 21$		$3 \times 7 =$
$7 + 7 + 7 + 7 = 28$		$4 \times 7 =$
$7 + 7 + 7 + 7 + 7 = 35$		$5 \times 7 =$

7 + 7 + 7 + 7 + 7 + 7 = 42		6 × 7
7 + 7 + 7 + 7 + 7 + 7 + 7 = 49		7 × 7=
7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 56		8 × 7=
7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 63		9 × 7=
7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 + 7 = 70		10 × 7=

Activity 1.12.2

Read and complete:

Example:

Three times seven = 3x7 and it means 3 groups of 7 counters.

Try these:

1times 7 = 1 x 7=___

2 times 7 = 2 x 7=__

3 times 7 = 3 x 7=__

4 times 7 = 4x7=__

5 times 7 =5x7=__

6 times 7 = 6 x 7=__

7 times 7 = 7 x 7=__

8 times 7 = 8 x 7=__

9 times 7 = 9x7=__

10 times 7 = 10x7= __

Application activity 1.12

1. Fill in with the correct number

a) 7 = __ × 7

b) 14 =__ × 7

c) 21 = __ × 7

d) 28 = __ × 7

e) 35 = __ × 7

f) 42 = __× 7

g) 49 = __ ×7

h) 56 = __ × 7

i) 63 = __ × 7

j) 70 = __ × 7

2. Fill in with the correct number

a)

↓	1	2	3	4	5	6	7	9	9	10
× 7	___	___	___	___	___	___	___	___	___	___

b)

↓	___	2	___	4	___	6	___	9	___	10
× 7	7	___	21	___	35	___	49	___	63	___

3. Two brothers have **7** cows each. How many cows do they have altogether?

What have you leant in this lesson?

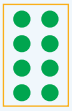
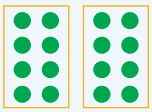
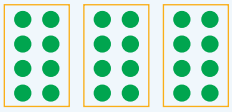
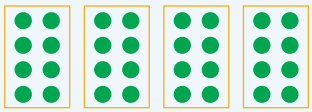
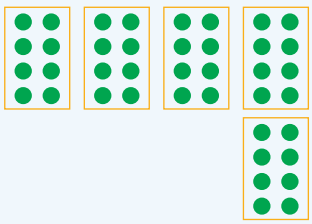
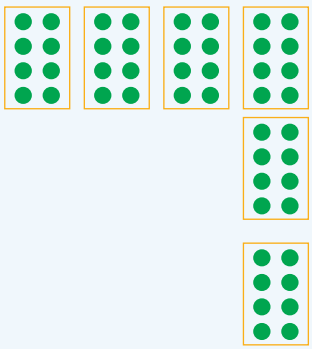
1.13 Multiples of 8 up to 80

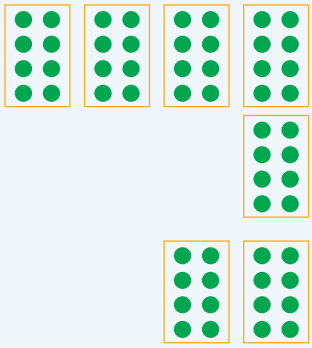
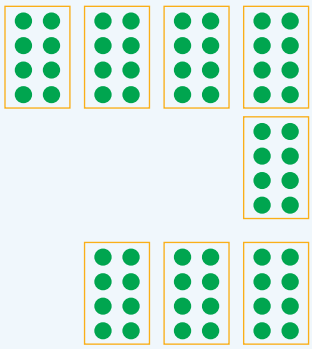
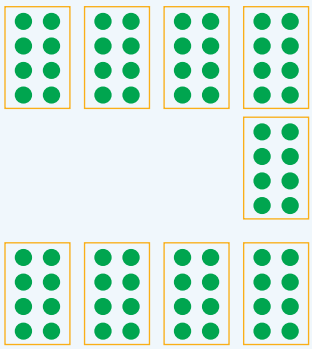
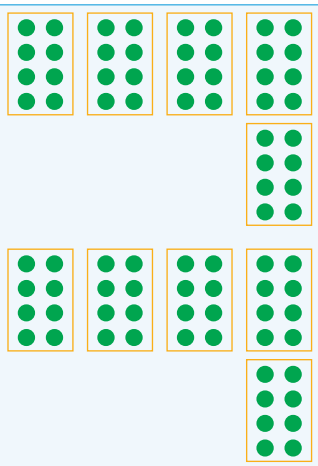
Activity 1.13.1

1) Form different groups of 8 counters (beans or bottle tops).

2) Count the number of counters for 2 groups, 3 groups , ...

3) Complete the total number of counters of groups in the following table:

8		1× 8=
8 + 8 = 16		2 × 8=
8 + 8 + 8 = 24		3 × 8=
8 + 8 + 8 + 8 = 32		4× 8=
8 + 8 + 8 + 8 + 8 = 40		5 ×8=
8 + 8 + 8 + 8 + 8 + 8 = 48		6 × 8=

8 + 8 + 8 + 8 + 8 + 8 + 8 = 56		7 × 8=
8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 64		8 × 8=
8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 72		9 × 8=
8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 = 80		10 × 8=

Activity 1.13.2

Read and complete:

Example:

Three times eight = 3x8 and it means 3 groups of 8 counters.

Example:

Try these:

1times 8 =1 x 8=__	6 times 8 =6 x 8= __
2 times 8 =2 x 8=__	7 times 8 =7 x 8=__
3 times 8 =3 x 8=__	8 times 8 =8 x 8=__
4 times 8 =4x8=__	9 times 8 =9x8=__
5 times 8 =5x8=__	10 times 8 =10x8=__

Application activity 1.13

1. Fill in with the correct number.

a) 8 = __ × 8

b) 16 = __ × 8

c) 24 =__ × 8

d) 32 =__ × 8

e) 40 = __× 8

f) 56 = __ × 8

g) 56 = __ ×8

h) 78 = ___ x8

i) 72 = ___ x8

j) 64=.___x8

2. Fill in with the correct number

a)

↓	0	1	2	3	4	5	6	7	9	9	10
× 8	__	__	__	__	__	__	__	__	__	__	__

b)

↓	0	__	2	__	4	__	6	__	9	__	10
× 8	__	8	__	24	__	40	__	56	__	72	__

3. Four farmers have **8 goats each**. How many goats do they have **altogether**?

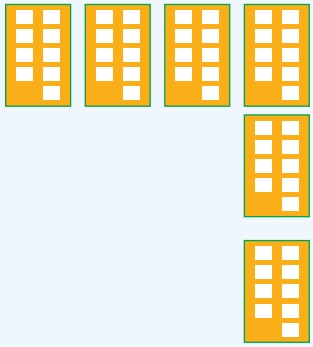
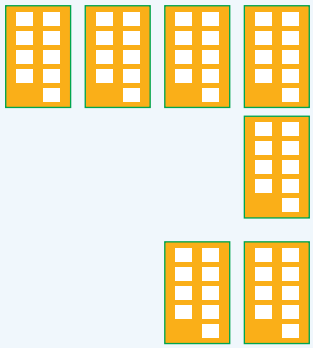
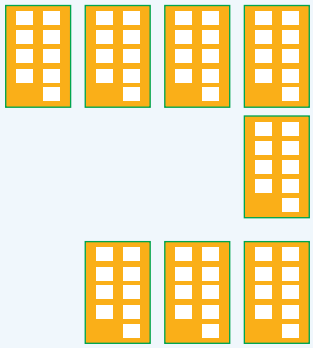
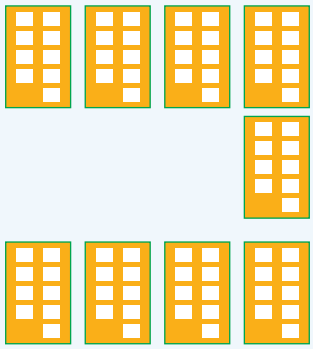
What have you leant in this lesson?

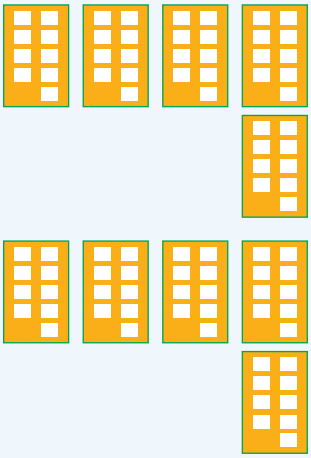
1.14 Multiples of 9 up 90

Activity 1.14.1

1. Form different groups of 9 counters (beans or bottle tops).
2. Count the number of counters for 2 groups, 3 groups, …
3. Complete the total number of counters for groups in the following table:

9		$1 \times 9 =$
9 + 9 = 18		$2 \times 9 =$
9 + 9 + 9 = 27		$3 \times 9 =$
9 + 9 + 9 + 9 = 36		$4 \times 9 =$
9 + 9 + 9 + 9 + 9 = 45		$5 \times 9 =$

9 + 9 + 9 + 9 + 9 + 9 = 54		6 × 9=
9 + 9 + 9 + 9 + 9 + 9 + 9 = 63		7 × 9=
9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 72		8 × 9=
9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 81		9 × 9=

9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 = 90		10× 9=

Activity 1.14.2

Read and complete

Example:

Four times nine means 4 groups of 9. It is 4x9 = 36.

1times 9 =1 x 9 =__	6 times 9 =6 x 9 = __
2 times 9 =2 x 9 =__	7 times 9 =7 x 9 =__
3 times 9 =3 x 9 =__	8 times 9 =8 x 9 =__
4 times 9 =4x9 =__	9 times 9 =9x9 =__
5 times 9 =5x9 =__	10 times 9 =10x9 =__

Activity 1.14.3

Read, complete and compare

Example:

4 x 9 = 36 and 9 x 4 = 36. Therefore, 4 x 9 = 9x4

This means that in the multiplication the order of numbers does not matter.

Try these:

a)7 x 9 = ___ 9 x 7 = _____. There fore, ___

b) 6 x 5 = ___ 5 x 6 = ___. Therefore, ___

c) 17 x 4 = 68, 4 x 17 = ___. Therefore, _____

Application activity 1.14

1) Fill in with the correct number

a) 9 = __ × 9

b) 18 = __ × 9

c) 27 =__ × 9

d) 36 =__ × 9

e) 45 = __× 9

f) 54 = __ × 9

g) 63 = __ ×8

h) 78 = ___ x8

i) 72 = ___ x8

j) 64 =___x8

2) Fill in with the correct number

a)

↓	0	__	2	__	4	__	6	__	9	__	10
× 9	__	9	__	27	__	45	__	63	__	81	__

b)

↓	__	1	__	3	__	5	__	7	__	9	__
× 9	0	__	18	__	36	__	54	__	72	__	90

3) There are 6 learners in a classroom.

If each learner raises 9 rabbits at home, how many rabbits do all learners raise altogether?

What have you leant in this lesson?

1.15 Multiplication of a number by a single digit number (7, 8 or 9)

Activity 1.15.1

Follow the example and multiply.

Example: 237 × 7 = 1 659

Thousand	Hundreds	Tens	Ones
	2	4	
	2	3	7
		×	7
1	**6**	**5**	**9**

Ones: 7 × 7 = 49, we write 9 under ones and we keep 4 to the next place value.

Tens: 7 × 3 = 21, we get 21 + 4 =25 and we write 5 under tens and keep 2 to the next place value.

Hundreds: 7 × 2 = 14, we get 14 + 2=16 and we write 6 under hundreds andwrite1 under the place of thousands.

Let us try these:

a) 175 × 7 b) 189 × 8 c) 197 × 9 d) 186 × 7 e) 167 × 8

Activity 1.15.2

Multiply numbers in this way:

Example: Expand the number and then, multiply by 8:

248 x 8 = (200 + 40 + 8) x 8 = (200 x 8) + (40 x 8) + (8 x 8)

= 1600 + 320 + 64

= 1 984

Try these :

a) 254 × 7 = c) 219 × 9 = e) 179 × 8 =

b) 245 × 8 = d) 198 × 7 = f) 209 × 9 =

Application activity 1.15

1) Multiply:

a) 274 × 5 b) 612 × 3 c) 176 × 8 d) 199 × 9 e) 129 × 6

2) There are 230 pupils in a school. Each pupil is given 8 pencils.

How many pencils will they get altogether?

Pencils for one pupil

What have you leant in this lesson?

1.16 Multiplication of a 3-digit number by a 2-digit number

Application activity 1.16.1

Multiply numbers to get the product.

Example: 123 x 12=

Housands	Hundreds	Tens	Ones	Steps
	1	2	3	I multiply by 2
	×	1	2	I multiply by 1
	2	4	6	to get the answer, I add the 2 products
+ 1	2	3		
1	**4**	**7**	**6**	

Therefore, **123 x 12=1 476**.

Try these:

a) 111 × 17

b) 105 × 19

c) 156 × 12

d) 179 × 11

e) 129 × 15

Application activity 1.16.2

Multiply:

a) 116 x 16 =

b) 116 x 15 =

c) 113 x 17 =

d) 110 x 16 =

What have you leant in this lesson?

1.17 Word problems involving multiplication of a 3-digit number by a 2-digit number

Activity 1.17.1

Discuss this worked example:

In the meeting room, there are 19 rows of chairs and on each row there are 105 chairs. Find the total number of chairs in the room.

Given	Question	Solution
The number of rows is 19	Total number of chairs in the meeting room =?	Total number of chairs is calculated as follow:
The number of chairs on each row is 105		105 x 19 = **1995 chairs**

```
   +4
   105
 x  19
  945
+105
 1995
```

Try these:

1) My father harvested bananas and loaded them equally in 17 lorries. Each lorry transported 117 bananas. What is the total number of the harvested bananas?

one lorry

2) The Hospital has 19 rooms for patients. There are 105 patients in each room. Find the number of all patients in the hospital.

3) In each box there are 148 voting papers. Find the number of voting papers in 13 boxes.

4) Mubumbyi makes 165 bricks every day. Find the number of bricks to be made in 12 days.

Application activity 1.17

1) There are **12** straight lines of trees in a field. There are **162** trees on each line. How many trees are there altogether?

2) Butera buys notebooks for 135 children in his cell. He buys 14 notebooks for every child. How many notebooks did Butera buy altogether?

3) A shopkeeper sells 124 soaps everyday. Find the number of soaps the shopkeeper will sell in 16 days.

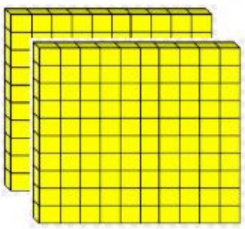
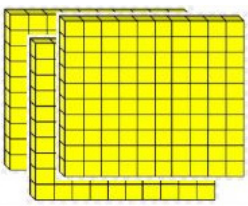
4) In the school, there are 18 classrooms and each classroom contains 15 desks. How many desks does the school have?

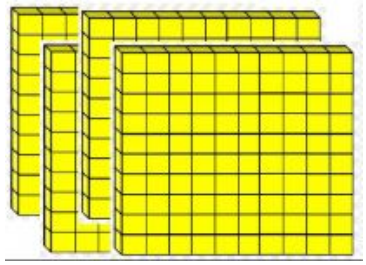
What have you learnt in this lesson?

1.18 Multiplication by 100 or 1000

Activity 1.18.1

1) Look at the following example and complete the table:

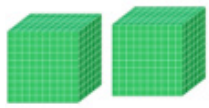
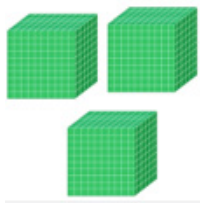
Hundreds	Number of flats	Total number of units	Multiplication by 100
	2	200	2x100 = 200
	3	__	3x100=__

	4	__	__

2) Complete: a) 16 x 100 =___ b) 18 x 100 = ___

Activity 1.18.2

1) Look at the following example and complete the table

Thousands	Number of cubes	Total number of units	Multiplication by 1000
	2	2000	2x1000 = 2000
	__	3000	__

2) Complete: a) 6 x 1000 =___ b) 8 x 1000 = ___

Activity 1.18.3

Do the quick multiplication.

Example:

a) 19 × 100 = 1 900 c) 1 × 1 000 = 1 000

b) 13 × 100 = 1 300 d) 2 × 1 000 = 2 000

Try these:

a) 12 × 100 = c) 1 × 1 000 = e) 19 × 100 =

b) 17 × 100 = d) 10 × 100 = f) 2 × 1 000 =

Application activity 1.18

Fill in with the correct number: 100 or1000.

a) ☐ × 13 = 1 300

b) 16 × ☐ = 1 600

c) 10 × ☐ = 1 000

d) 17 × ☐ = 1 700

e) ☐ × 1 = 1 000

f) 14 × ☐ = 1 400

g) 2 × ☐ = 2 000

h) 20 × ☐ = 2 000

What have you leant in this lesson?

1.19 Division without a remainder of a 4-digit number by a one digit number

Activity 1.19.1

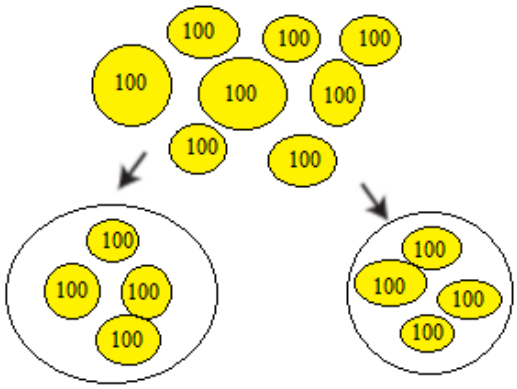
Fill in the missing numbers in the following table

↓	2	4	6	8	10	12	14	16	18	20
÷ 2	___	___	___	___	___	___	___	___	___	___
↓	3	6	9	12	15	18	21	24	27	30
÷ 3	___	___	___	___	___	___	___	___	___	___
↓	4	8	12	16	20	24	28	32	36	40
÷ 4	___	___	___	___	___	___	___	___	___	___
↓	5	10	15	20	25	30	35	40	45	50
÷ 5	___	___	___	___	___	___	___	___	___	___
↓	6	12	18	24	30	36	42	48	54	60
÷ 6	___	___	___	___	___	___	___	___	___	___
↓	7	14	21	28	35	42	49	56	63	70
÷ 7	___	___	___	___	___	___	___	___	___	___
↓	8	16	24	32	40	48	56	64	72	80
÷ 8	___	___	___	___	___	___	___	___	___	___

	9	18	27	36	45	54	63	72	81	90
÷ 9	___	___	___	___	___	___	___	___	___	___

Activity 1.19.2

There are 8 sacks. Each sack contains 100 counters. If sacks are shared equally in 2 groups, how many counters are in each group?



Then, complete: 800 ÷ 2 =__

Activity 1.19.3

Follow this example to divide.

Example: 1866÷6 = ? 1484 ÷ 7 = ? 1648 ÷ 8 = ?

We write the expression in the long division format:

1 866 ÷ 6 = 311

$$\begin{array}{r} 311 \\ 6\overline{)\,1866} \\ -18 \\ \hline 006 \\ -6 \\ \hline 06 \\ -6 \\ \hline 0 \end{array}$$

1 484 ÷ 7 = 212

$$\begin{array}{r} 212 \\ 7\overline{)\,1484} \\ -14 \\ \hline 008 \\ -7 \\ \hline 14 \\ -14 \\ \hline 0 \end{array}$$

1 648 ÷ 8 = 206

$$\begin{array}{r} 206 \\ 8\overline{)\,1648} \\ -16 \\ \hline 004 \\ -0 \\ \hline 48 \\ -48 \\ \hline 0 \end{array}$$

Therefore, 1 866 ÷ 6 = **311** , 1 484 ÷ 7 = **212,** 1 648 ÷ 8 = **206**

Try these

a) 1 236 ÷ 4 =
b) 1 575 ÷ 5 =
c) 1 648 ÷ 8 =
d) 1 989 ÷ 9 =
e) 1 768 ÷ 2 =
f) 1 326 ÷ 6 =

Application activity 1.19

Play the game of number cards

Use the following number cards and the sign cards: ÷ and =

A)	1 449	1 872	1 704	1 540	1 896	1 648	1 686
B)	7	9	8	5	6	4	3
C)	213	316	208	412	562	207	308

- Then, play the game as follows:
- Take one number card from A ;
- Take the card with division sign ÷ ;
- Take the number card from B below the card you chose from A;
- Take the card with the sign = ;
- Then, select the correct answer from the cards in C.

Example:

1 449 ÷ 7 = 207

What have you leant in this lesson?

1.20 Word problems involving the division without a remainder

Activity 1.20

Follow this worked example and do the following activities.

There are 96 pupils in P3. If they form 8 groups with equal number of pupils, how many pupils are in each group?

Given	Question	Solution
The number of all pupils is 96. There are 8 groups.	The number of pupils in each group.	The number of pupils in each group is calculated as follow **96÷ 8** = **12 pupils** 12 8) 96 –8 16 –16 0

1. 378 pupils were equally divided into 9 classrooms. How many pupils are in each classroom?
2. The district has 894 books to be equally distributed to 6 schools. How many books does each school receive?
3. Our sector has 1 985 mosquitonets to be equally distributed to 5 cells. How many mosquitonets does each cell receive?
4. A farmer harvested 1 359 sacks of irish potatoes to be equally loaded in 9 lorries. How many sacks of irish potatoes did each lorry carry?

Application activity 1.20

1. Keza has 1 768 eggs to be equally distributed in 8 boxes. How many eggs are put in each box?

2. Donors have 1 484 balls to be equally distributed to 7 districts. How many balls will be given to each district?
3. Mubumbyi makes 1 888 bricks in 8 days. Find the number of bricks Mubumbyi makes everyday.
4. Divide equally 1 845 textbooks to 5 schools.

What have you leant in this lesson?

End of unit assessment 1

1. Write 1 987 in words.
2. Which number has been expanded to give: 9 ones 8tens 1 thousand 7 hundreds?
3. Find the number which has been expanded:

   (1 × 1 000) + (7 × 100) + (9 × 10) + (8 × 1) =
4. What is the place value of the underlined digit?

   a) 1 856 b) 1 787 c) 1 324 d) 1 258
5. Compare numbers using the following symbols: <, > or =

   a) 1 095 ☐ 1 059 b) 1 741 ☐ 1 876
6. Arrange the following numbers in ascending order (from the smallest to the biggest number):

   1 789, 1 879, 1 798, 1 897, 1 978, 1 987
7. Arrange the following numbers in descending order (from the biggest to the smallest number):

   1 978, 1 987, 1 789, 1 798, 1 879, 1 897
8. Find the sum of the following numbers:

   a) 1 434 + 563 = b) 895 + 1 009 =
9. Try the subtraction:

   a) 1 785 – 762 = b) 1 967 – 1 356 =

10. Multiply the following numbers:

a)	156	b)	205	c)	209	d)	124	e)	147
	× 8		× 7		× 9		× 15		× 13

11. Divide:

a) 1 998 ÷ 9 = b) 1 875 ÷ 5 =

12. In Bibare cell, there are 367 men, 445 women, 461 youth and 723 children. Find the total number of people in Bibare cell. A school has 1 874 pupils. The number of girls is 987. Find the number of boys.

13. A training center has 7 meeting rooms and in each room there are 275 trainees. Find the number of all trainees at the training center.

14. Equally divide 1 998 mosquito nets to 6 villages. How many mosquito nets does each village receive?

UNIT 2

NUMBERS FROM 0 UP TO 5 000

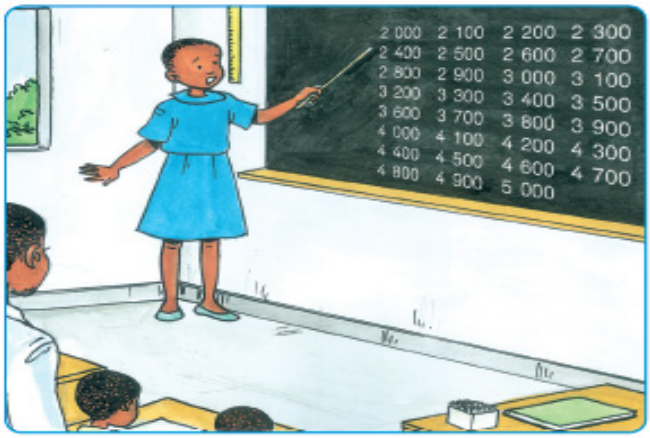
2.0 Introductory activity

Rugero has many chicken eggs. Rugero wants to sell eggs. After selling them, Rugero cannot know the number of eggs he sold. What does Rugero need to know in Mathematics?	

2.1 Reading numbers up to 5000

Activity 2.1.1

1. Look at the picture. Read the given numbers



Example

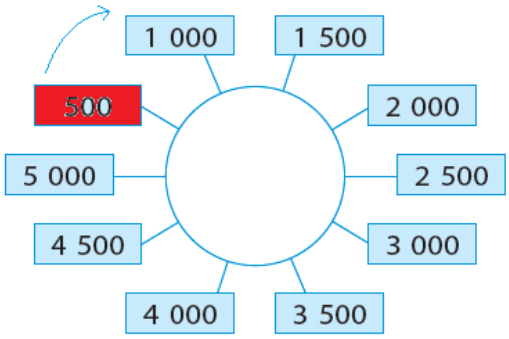
2000: Two thousand.

2300: Two thousand three hundred.

2.

a) Read the numbers on the diagram. Begin from 500.

b) Look at the numbers on the diagram. Which numbers have 4 digits?



Application activity 2.1

In the box, there are small papers with numbers 1 251; 2 437; 3 317.

Everyone can pick one paper and read aloud the number on the paper.

What have you leant in this lesson?

2.2 Writing numbers up to 5000 in figures

Activity 2.2.1

Use the following number cards and form 5 numbers between 2 000 and 5 000:

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

Read them aloud to your friends.

Activity 2.2.2

1) Find the missing numbers. Read them aloud to your friends.

a) 2 000 | 2100 | 2 200 | ☐ | 2 400 | ☐ | 2 600 | ☐ | 2800 | ☐ | 3 000

b) 3 000 | 3100 | 3 200 | ☐ | 3 400 | ☐ | 3 600 | ☐ | 3 800 | ☐ | 4 000

c) 4 000 | 4100 | 4 200 | ☐ | 4 400 | ☐ | 4 600 | ☐ | 4 800 | ☐ | 5 000

2) Find all numbers between:

a) 2 015 and 2 020 b) 2 070 and 2 075 c) 4 065 and4 070

Application activity 2.2

Form 6 numbers between 1 000 and 5 000, using the following number cards:

4	3	2	1

Use your notebook to write them and read aloud to your friends.

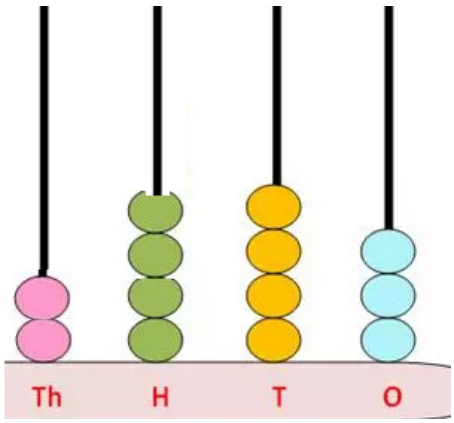
What have you leant in this lesson?

2.3 Place value of digits in the numbers from 0 up to 5000

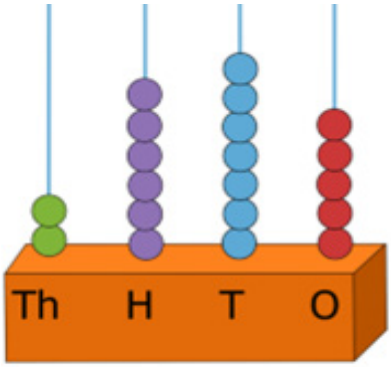
Activity 2.3.1

Write the correct number of thousands (Th), hundreds (H), tens (T) and Ones (O) which are shown on the abacus.

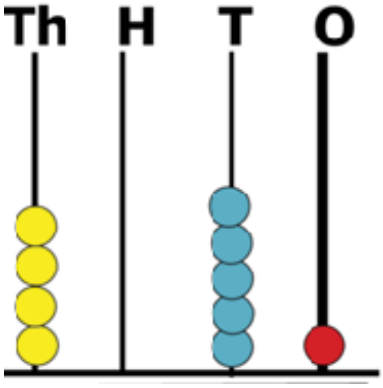
Example:



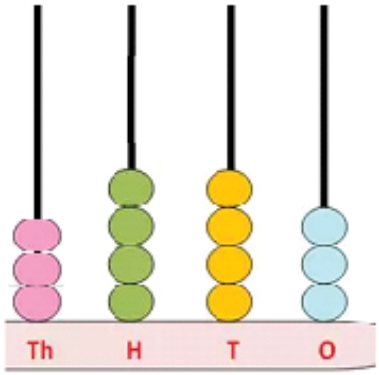
2	4	4	3	= 2 443



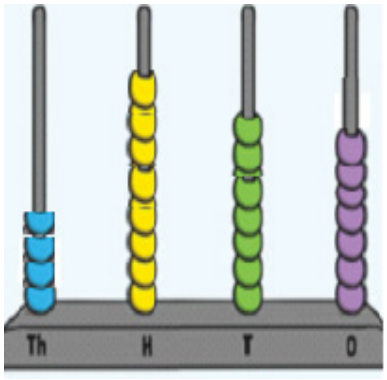
				=



				=



				=



				=

Activity 2.3.2

Fill the following numbers in the table of place values

Example: The number 2 456 is composed of 2 Thousands, 4 Hundreds,5 Tens and 6 Ones.

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (b)
2	4	5	6

Try these:

a) 3 546 c) 4 969 e) 4 935

b) 2 932 d) 2 794 f) 3 794

Activity 2.3.3

Use a table of place values and write each digit in the right place.

a. 2564 = ___Thousands___Hundreds ___Tens___Ones.

b. 3968 =___Thousands___Hundreds ___Tens___Ones.

c. 4975=___Thousands___Hundreds ___Tens___Ones.

d. 2936 =___Thousands___Hundreds ___Tens___Ones.

e. 3917 =___Thousands___Hundreds ___Ten___Ones.

f. 4795 =___Thousands___Hundreds ___Tens___Ones.

Application activity 2.3

Write the place value of each underlined digit

a) 3 56<u>4</u>

b) <u>4</u> 7<u>5</u>9

c) 2 3<u>4</u>2

d) 4 <u>9</u>25

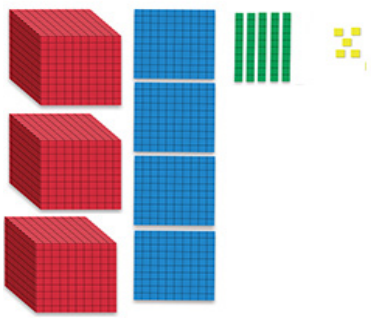
e) 2 9<u>1</u>7

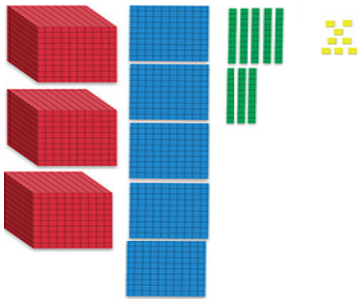
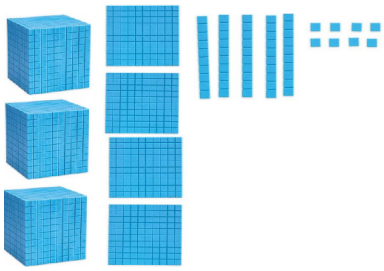
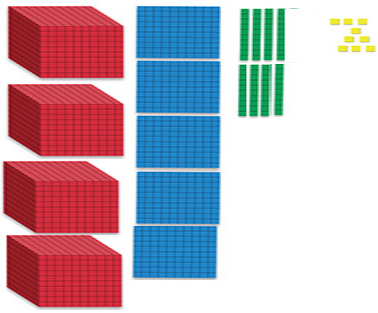
f) <u>3</u> 7<u>5</u>9

What have you leant in this lesson?

2.4 Expanded form of a number

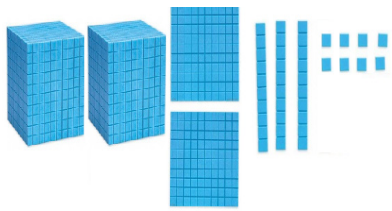
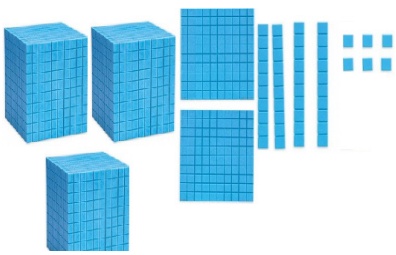
Activity 2.4.1

Number represented by the base ten blocks	Expanded form
Example: 	3455 =3000+400+50+5

	____
	____
	____

Application activity 2.4.2

Use the example and complete the missing number

	=2000+200+30+8 2 thousands+2 hundreds +3 tens +8 ones = 2238
	___thousands ___hundreds 4 tens ___ones =___+ ___+___+___ =_____

Activity 2.4.3

1) Expand the given numbers into thousands, hundreds, tens and ones.

Example

4765 = 4000+700+60+5

= (4x1000) + (7x100)+(6x10)+(5x1)

= 4 thousands 7 hundreds 6 tens 5 ones

Try these:

a) 4 652 =

b) 2 879 =

c) 3 574 =

d) 2 634=

e) 4971 =

f) 3695=

G) 3916

h) 2397

i) 4645

2. Find the number that was expanded into thousands (Th), hundreds (H), tens (T) and ones (O).

a. 5 ones, 4thousands, 7 tens, 9 hundreds

b. 7 ones, 4 tens, 3 thousands, 6 hundreds

c. 9tens, 2thousands, 6 ones, 7 hundreds

d. 5 hundreds, 8 ones, 2 tens, 3 thousands

e. 8 hundreds, 9 ones, 4 thousands, 7 tens

f. 7 ones, 2 thousands, 7 tens , 6 hundreds

Application activity 2.3

1. Expand numbers into thousands (Th), hundreds (H), tens (T) and ones (O).

a) 4 657 =

b) 2 726 =

c) 3 965 =

d) 4 425 =

e) 2 645 =

f) 3 371 =

2. Find the number that was expanded

a) (2 × 1 000) + (6 × 100) + (9 × 10) + (4 × 1) =

b) 4 000 + 500 + 40 + 9 =

c) 3 thousands + 4 hundreds + 7 tens + 5 ones

What have you leant in this lesson?

2.5 Writing the number in words

Activity 2.5

1) The number 3246 = 3 thousands 2 hundreds 4 tens 6 ones. It is expanded as 3246 =3000+200+40+6.

a) Complete by **hundreds** or **thousands**

2579	= 2000	Two ____
	+ 500	Five ____
	+ 70	Seventy
	+ 9	Nine

b) Circle the correct sentence:

i) 4853 in words is: Four thousand eight hundred and five tens three.

ii) 4853 in words is: Four thousand eight hundred and fifty-three.

2) Complete the table

Number	Expanded form	Number in words
3 976	3 000+900+70+6	Three thousand nine hundred and seventy-six.
		Two thousand five hundred and twenty-eight
4 291		
		Four thousand nine hundred and ninety-nine

Application activity 2.5

1) Write the following numbers in words

a) 2 139 b) 3 745 c) 3 416 d) 4 997

2) Write the following numbers in figures

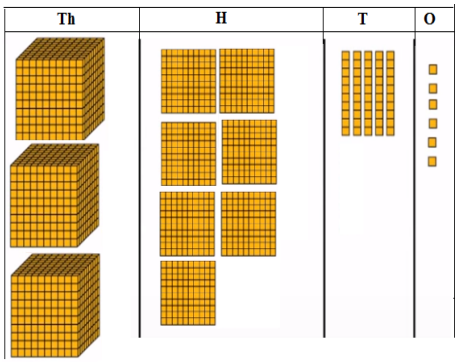
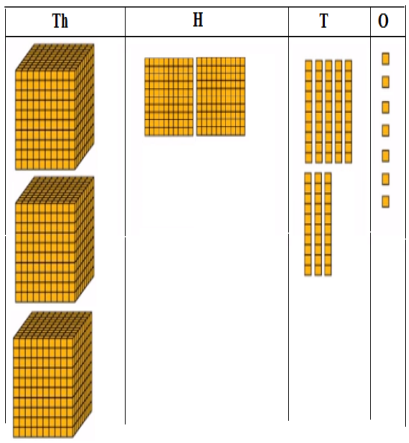
a. Three thousand seven hundred and forty-four
b. Four thousand nine hundred and thirty-five
c. Two thousand and twelve
d. Four thousand eight hundred and eighty-eight.

What have you leant in this lesson?

2.6 Comparing numbers less than or equal to 5000

Activity 2.6.1

Observe the numbers in the table of place values. Compare the two numbers 3756 and 3287.

Place values		
Number	3756	3 287

Complete by **greater than** or **less than**

a) 3756 is _____**3287** **b) 3287** is_____ **3756**

Activity 2.6.2

Compare numbers using <, > or =

Example 3956< 4187

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (b)
4	1	8	7
3	**9**	**5**	**6**

3956 is smaller than **4187.** then 3956< 4187

Try hese:

a) 4 958 ☐ 4 958

b) 3 174 ☐ 2 797

c) 2 962 ☐ 3 637

d) 4 253 ☐ 2 352

e) 3 764 ☐ 4 674

f) 2 315 ☐ 4 135

Application activity 2.6

1. Use <, > or = to compare the following numbers:

a) 4 958 ☐ 4 958

b) 3 174 ☐ 2 797

c) 2 962 ☐ 3 637

d) 4 253 ☐ 2 352

2. Use the table below to compare number of people in Kamukina village.

Men	**Women**	**Youth**	**Children**
1 823	1 987	3 298	4 567

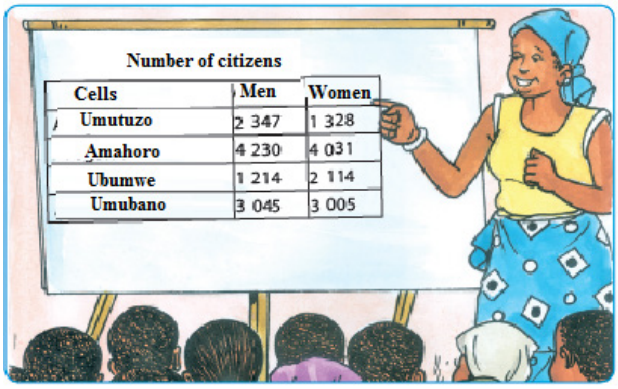
a. Compare the numbers of women and men

b. Compare the numbers of men and youth

c. Compare the numbers of children and men

d. Compare the numbers of men and children

3. Use the picture and compare the numbers of citizens in different cells.



In the given cells, which cell has :

a. A smaller number of men than women?

b. A smaller number of women than men?

c. A greater number of men than women?

d. A greater number of women than men?

e. Use the comparison signs < and > to compare the number of people:

Example

The number of men for Umutuzo Cell is greater than the number of men for Ubumwe Cell.

2347 > 1214

Now, try to compare:

- The number of men in Umutuzo cell and the number of men in Amahoro cell
- The number of men in Ubumwe cell and the number of men in Umubano cell
- The number of women in Amahoro cell and the number of women in Umubano cell
- The number of women in Umutuzo cell and the number of women in Ubumwe cell.

What have you leant in this lesson?

2.7 Arrange numbers between 2000 and 5000 in ascending or descending order

2.7.1 Arrange numbers in ascending order (from the smallest to the biggest)

Activity 2.7

See the picture below: Write numbers on sheets of paper.

Arrange the given numbers in ascending order: from the smallest to the biggest number

Example 4 725, 3 257, 4 752

Thousands	Hundreds	Tens	Ones
3	2	5	7
4	7	2	5
4	7	5	2

Answer: 3 257, 4 725, 4 752

Try these:

Arrange the following numbers in ascending order.

1) 3 248, 2 348, 4 832

3) 4 334, 3 438, 4 833

2) 3 247, 4 237, 2 743 4) 2 437, 3 472, 4 327

Activity 2.7.2

Write the given numbers in a place value table. Then, arrange them in ascending order (from the smallest to the biggest number).

2 456	3 271	1 937	4 010	4 101

What have you leant in this lesson?

2.7.2 Arrange numbers in descending order (from the biggest to the smallest number)

Activity 2.7.3

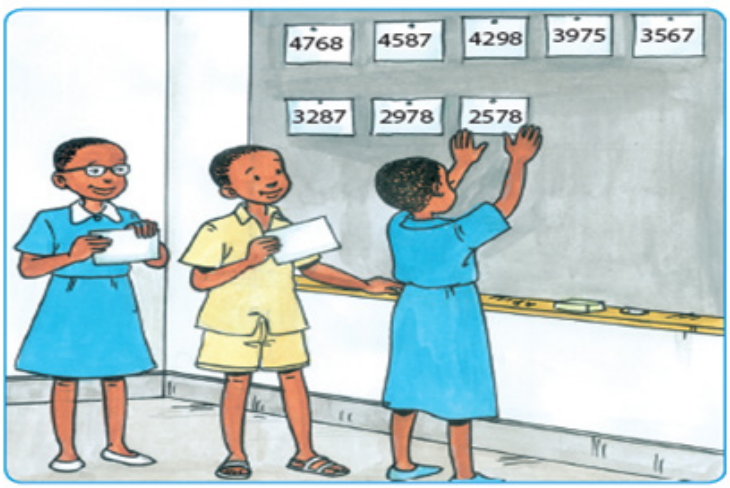
Imitate what children are doing in the picture. Use the number cards, and arrange numbers in descending order.

a)

4 321	3 214	2 431
4 231	3 412	2 312

b)

2 341	4 123	3 124
2 143	3 345	4 533



Activity 2.7.4

Arrange the given numbers in descending order.

Example 4 526, 4 735, 4 647

Thousands	Hundreds	Tens	Ones
4	7	3	5
4	6	4	7
4	5	2	6

Answer: 4 526, 4 647, 4 735

Now, try these:

1) 2 543, 3 254, 4 352
2) 4 235, 2 435, 3 453
3) 4 932, 2 439, 3 942
4) 3 294, 4 293, 3 492

Application activity 2.7

1. Arrange the following numbers in ascending order

a) 4 739, 4 973, 4 397
b) 3 479, 4 749, 4 973
c) 4 128, 4 182, 4 018, 4 108
d) 4 107, 4 701, 4 170, 4 071

2. Arrange the following numbers in descending order

a) 2 643, 4 362, 3 263
b) 3 647, 4 763, 4 367
c) 2 974, 2 479, 2 947
d) 3 238, 3 823, 3 283, 3 832

What have you leant in this lesson?

2.8 Addition of numbers whose sum does not exceed 5000

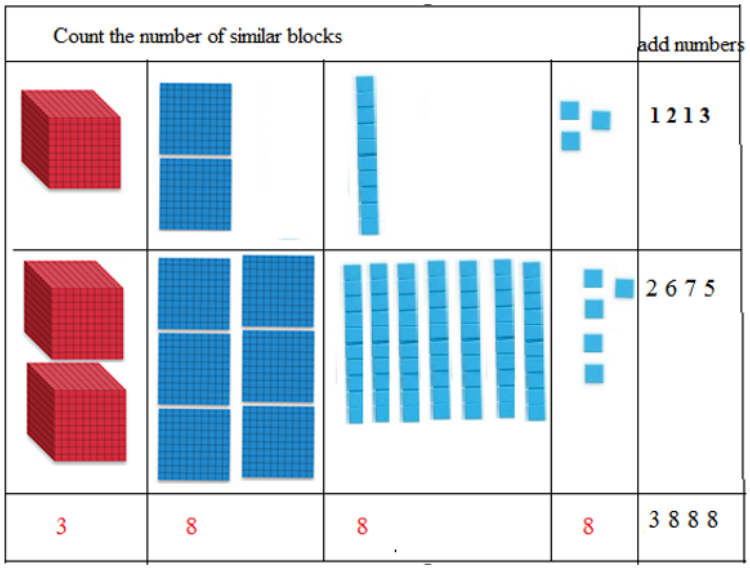
2.8.1 Addition without carrying

Activity 2.8.1

Add numbers:

Example 1 213 + 2 675 =

a) Using base ten blocks:



this is:

1 213
+ 2 675
3 888

b) Using table of place value:

Fourth	**Third**	**Second**	**First**
Finally, I add thousands	*I add hundreds*	*I add tens*	*I add ones*
Thousands	Hundreds	Tens	Ones
1 + 2	2 6	1 7	3 5
3	8	8	8

Use any method and try these:

a) 3 454 + 1 421 b) 2 523 + 2 175 c) 3 435 + 1 543 d) 4 017 + 972 e) 2 454 + 2 452

Activity 2.8.2

1. Add the following numbers:

a) 4 235 + 763 =
b) 2 567 + 1 421 =
c) 3 909 + 1 090 =
d) 2 990 + 2 009 =
e) 3 735 + 1 251 =
f) 4 056 + 823 =

Application activity 2.8.1

Add:

a) 3 543 + 1 456 b) 2 235 + 2 704 c) 3 972 + 1 017 d) 4 675 + 323 e) 2 454 + 2 452

What have you leant in this lesson?

2.8.2 Addition with carrying where the sum does not exceed 5000

Activity 2.8.3

Add the given numbers.

Example 2 725 + 1 579 = ___

Fourth	Third	Second	First
Finally, I add thousands: 2+1=3. Then, 3+1= 4	I add hundreds: 5+5=12. Then, 12+1=13. I write 3 and I carry 1 to thousands.	I add tens: 2+7=9 Then, 9+1=10. I write 0 and I carry 1 to hundreds.	I add ones, 5+9=14, I write 4 and I carry 1 to tens.
Thousands	Hundreds	Tens	Ones
1 2 + 1	1 7 5	1 2 7	 5 9
4	3	0	4

Then, 2 725 + 1 579 = 4 304

Now try these:

a) 2 897 + 1 654 b) 3 093 + 1 379 c) 1 395 + 3 499 d) 1 024 + 3 699 e) 1 154 + 3 779

Activity 2.8.3

1. Add

a) 2 943 + 1 979 =

b) 3 967 + 797 =

c) 1 239 + 3 678 =

d) 2 795 + 2 089 =

Application activity 2.8.2

Add:

a) 4 072 + 928

b) 3 235 + 757

c) 3 472 + 1 097

d) 3 765 + 997

e) 3 246 + 1 475

What have you leant in this lesson?

2.9 Word problems involving addition

Activity 2.9

Example

A book shop printed 2 567 books during the day and 2 433 books during the night. Find the total number of books printed.

Given	Question	Solution
The number of books printed during the day is 2 567 The number of books printed during the night is 967	The total number of books printed =?	The total number of books printed is calculated: 2 567 + 2 433 = 5 000 books 1 1 1 2 5 6 7 + 2 4 3 3 5 0 0 0

Now, try these:

1. A company makes 2 345 iron sheets in the morning and 2 649 iron sheets in the evening. Find the number of all iron sheets the company makes in a day.
2. Our cell planted 1 897 trees last year and 3 098 trees this year. Find the total number of trees planted in two years.
3. A school in our sector has 3 785 girls and 1 215 boys. How many pupils are in the school?
4. In the stadium, there are 2 178 women fans and 2 789 men fans. Find the number of all fans in the stadium.

Application activity 2.9

1) Our school has 1 765 seedlings of mango trees and 2 103 seedlings of orange trees. Find the total number of all seedlings.

2) In the morning prayers, 1 265 men, 1 620 women and 210 children were present. How many people are present in the morning prayers?

3) In the forest, there are 1 543 eucalyptus trees, 746 grevillea trees and 1 220 bamboo trees. Find the total number of trees in the forest.

What have you leant in this lesson?

2.10 Subtraction of numbers within the range of 5000

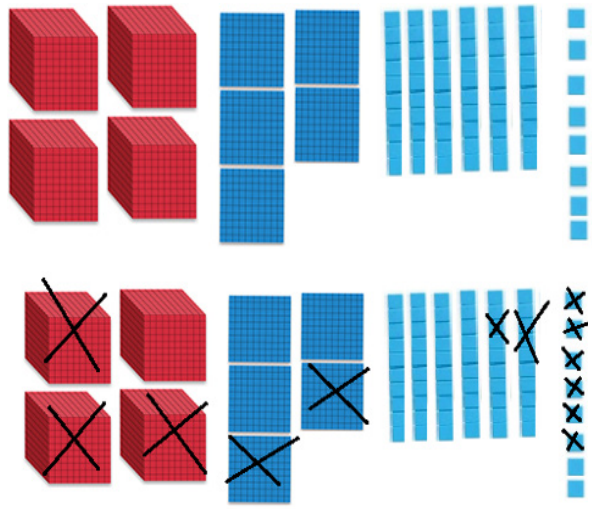
2.10.1 Subtraction without borrowing

Activity 2.9

Example 4 568 – 3 226 = ____

a) Use of base ten blocks:

use of base ten block



Numbers

4 5 6 8

4 568 - 3 226 = 1 342

Vertically:

4 568
– 3 226
1 342

End by: Subtract thousands from thousands	Subtract hundreds from hundreds	Subtract tens from tens	**Start by:** Subtract ones from ones

Thousands	**Hundreds**	**Tens**	**Ones**
4	5	6	8
- 3	2	2	6
1	3	4	2

Now, use one method of the example and try these:

a) 4 956 – 3 124 b) 3 599 – 3 467 c) 2 975 – 1 453 d) 3 694 – 2 573 e) 4 799 – 3 429

Application activity 2.10.2

Subtract:

a) 4 795 – 2 563 =
b) 3 765 – 2 431 =
c) 2 897 – 1 794 =
d) 4 965 – 3 941 =
e) 2 765 – 1 312 =
f) 3 956 – 2 932 =

Application activity 2.10.1

Work out the following:

a) 2 543 − 1 412 b) 4 745 − 3 230 c) 3 729 − 2 517 d) 2 765 − 1 523 e) 3 599 − 3 429

What have you leant in this lesson?

2.10.2 Subtraction with borrowing

Application activity 2.10.3

Subtract:

Example: 4 755 – 2 967 =

Thousands	Hundreds	Tens	Ones
	16	14	
3	6	4	15
~~4~~	~~7~~	~~5~~	5
– 2	9	6	7
1	7	8	8

Explanations:

Ones: 5 - 7 is impossible, I borrow1ten. I get 10+5=15. Then 15-7 =8

Tens: 4-6 is impossible; I borrow 1 from hundreds, I get 10+4=14. Then, 14-6 =8.

Hundreds: 6-9 is impossible; I borrow 1 from thousands and 10+6 =16. Then, 16-9 = 7.

Thousands: I have 3. Then 3-2= 1

Therefore, **4755 -2976 = 1788**

Now, try these:

a) 4 243 − 2 798 b) 3 613 − 2 379 c) 2 345 − 1 769 d) 3 524 − 2 659 e) 4 241 − 1 879

Application activity 2.10.4

1. Subtract

a) 4 571 – 3 796 =
b) 3 423 – 2 975 =
c) 4 234 – 3 596 =
d) 2 345 – 1 687 =
e) 4 567 – 2 789 =
f) 3 567 – 1 678 =

Application activity 2.10.2

Subtract the following:

a) 4 678 − 2 789 b) 2 785 − 1 806 c) 4 009 − 3 967 d) 3 234 − 2 567 e) 4 341 − 1 779

What have you leant in this lesson?

2.11 Word problems involving subtraction in real life situations

Activity 2.11

Read and find the answer:

In a cell, there are 4 352 citizens and 3 974 among them have medical insurance. Find the number of citizens with no medical insurance.

Given	Question	Solution
The number of all citizens is 4 352	The number of citizens with no medical insurance =?	Citizens with no medical insurance is calculated as 4 352 – 3 974 = 378 citizens **387 citizens have no medical insurance.**
The number of citizens with medical insurance is 3 974		

Try these:

1. Keza made 3 567 bricks. Because of the rain, 987 bricks got broken. How many bricks did Keza remain with?
2. Our school headmaster bought 4 123 textbooks and he gave 1 456 textbooks to pupils. How many textbooks did he remain with?
3. Umurerwa harvested 3 214 avocados and stored them to get ripe. After some days, 789 avocados were damaged. Find the number of avocados remained.

Application activity 2.10.2

1) Kamukina cell has 4 132 families and 1 968 among them have good houses. Find the number of families of Kamukina Cell without good houses.

2) In our cell, there are 4 356 houses and among them 2 789 are permanent houses. Find the number of tempolary houses in our cell.

What have you leant in this lesson?

2.12 Multiply a 3-digits number by a 2-digits number

Activity 2.9

Multiply a 3-digits number by a 2-digits number

Example: 198 x 24 =

a) We can use a place value table:

Thousands	Hundreds	Tens	Ones
	1	9	8
	×	2	4
	7	9	2
+ 3	9	6	
4	7	5	2

Steps:

I multiply 198 by 4

I multiply 198 by 2 and I write the answer starting by tens.

I add the two answers to get the product

Therefore, **198 x 24 = 4752**

b) We can multiply vertically:

```
   1 9 8
x    2 4
-------
   7 9 2
+3 9 6
-------
 4 7 5 2
```

a) I multiply 198 by 4

b) I multiply 198 by 2 and I write the answer starting by tens.

c) I add the two answers to get the product

Now, try these:

a)	295 × 15	b)	198 × 19	c)	356 × 12	d)	139 × 34
e)	108 × 45	f)	209 × 23	g)	247 × 19	h)	169 × 24

Application activity 2.12

Use the following number cards and cards with × and = and do the task below:

A)	237	159	368	193	219	317	412
B)	21	29	13	25	18	15	12
C)	4 784	3 942	4 977	4 755	4 825	4 944	4 611

- Take one number card from A ;
- Take the card with multiplication sign × ;
- Take the number card from B that is below the card you chose from A;
- Take the card with the sign = ;
- Then, select the correct answer from the cards in C.

Example: 237 × 21 = 4 977

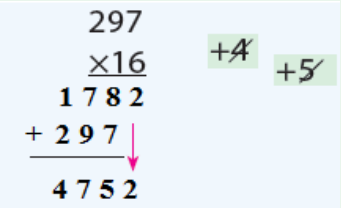
2.13 Word problems involving the multiplication of a 3-digit number by a 2-digit number

Activity 2.13

Read and find the answer.

Example: 198 x 24 =

In the church, there are 297 benches and each bench has 16 seats. Find the total number of people in the church.

Given	Question	Steps and solution	Explanations
The number of all benches is 297 The number of people to seat on each bench is 16	The number of people to seat on all benches =?	The number of people to seat on all benches is calculated as follow: 297 x 16 =.  297 x 16 = 4752 The number of people to seat on all benches is 4752.	**Multiplying 297 by 6 ones**: 6 × 7 = 42, we write 2 in the place value of ones, and we keep 4 in the place value of tens. 6 × 9 = 54, we add 4 to 54 and we get 58: we write 8 in the place value of tens and keep 5 in the place value of hundreds. 6 × 2 = 12, we add 5 to 12 and we get 17: we write 7 in the place value of hundreds andwrite 1 in the place value of thousands. Therefore: 297 x 6 =1782.

			Multiplying 297 by 1ten: 1x 7 =7, 1 x 9 = 9, 1 x 2 = 2. Therefore, 297 x 10 = 2970 **Finally, we add two numbers** 1 782 and 2970 to get the product 4752.

Now try these:

1. Gahire planted pineapples on 316 straight lines. Find the total number of pineapples, Gahire planted if each line had 15 pineapples.
2. Muhongerwa has 159 trays of eggs. If each tray carries 30 eggs, find the total number of eggs.

Activity 2.13

Read and find the answer:

1. In the room, there are 28 rows, and each row has 189 chairs. Find the total number of chairs in the room.
2. Soldiers make 245 straight lines and on each line, there are 19 soldiers. Find the total number of soldiers.

What have you leant in this lesson?

2.14 Multiply numbers by 100 and 1000

Activity 2.14

Follow the given example and work out quick multiplication..

Example:

To multiply the whole number by 100, I copy a given number then i write two zeros at the right side of that given number

a) 29 × 100 = 2 900

b) 45 × 100 = 4 500

To multiply the whole number by 1 000, I copy a given number then i write tree zeros at the right side of that given number

a) 5 × 1 000 = 5 000

b) 4 × 1 000 = 4 000

Try these:

a) 42 × 100 =

b) 37 × 100 =

c) 2 × 1 000 =

d) 36 × 100 =

e) 49 × 100 =

f) 1 × 1 000 =

Application activity 2.14

Fill in with the correct number 100 or1000.

a) ☐ × 3 = 3 000

b) 46 × ☐ = 4 600

c) 5 × ☐ = 5 000

d) 28 × ☐ = 2 800

e) ☐ × 4 = 4 000

f) 35 × ☐ = 3 500

g) 3 × ☐ = 3 000

h) 2 × ☐ = 2 000

What have you leant in this lesson?

2.15 Division without a remainder of a 4-digit number by a 1-digit number

Activity 2.15

Divide vertically:

Example:

a) 3 321 ÷ 9 =

$$\begin{array}{r} 369 \\ 9\overline{)\,3321} \\ -27 \\ \hline 62 \\ -54 \\ \hline 81 \\ -81 \\ \hline 0 \end{array}$$

b) 4 896 ÷ 8 =

$$\begin{array}{r} 612 \\ 8\overline{)\,4896} \\ -48 \\ \hline 009 \\ -8 \\ \hline 16 \\ -16 \\ \hline 0 \end{array}$$

c) 4 963 ÷ 7 =

$$\begin{array}{r} 709 \\ 7\overline{)\,4963} \\ -49 \\ \hline 006 \\ -0 \\ \hline 63 \\ -63 \\ \hline 0 \end{array}$$

Try these:

a) 3 975 ÷ 3 =

b) 4 648 ÷ 4 =

c) 4 985 ÷ 5 =

d) 2 706 ÷ 6 =

Activity 2.15.2

Use the following number cards and cards with ÷ and = and do the task below:

A)	4 095	4 563	4 956	4 864	3 966	4 868	4 896
B)	5	9	7	8	6	4	3
C)	1 632	608	708	819	1 217	661	507

- Take one number card from A ;
- Take the card with division sign ÷ ;
- Take the number card from B;
- Take the card with the sign = ;
- Then, select the correct answer from the cards in C.

Example:

4 095	÷	5	=	819

Application activity 2.15

1) Divide:

a) 4 985 ÷ 5 = c) 2 736 ÷ 9 =

b) 3 872 ÷ 8 = d) 4 963 ÷ 7 =

2) Find the missing number

a) _ ÷ 5 = 153 b) _ ÷ 4 = 124 c) _ ÷ 6 = 496

2.16 Word problems of division without remainder

Activity 2.16

Read and find the answer.

Example: Divide equally 4 875 mosquito nets to 5 villages. How many mosquito nets will each village get?

Given	Request	steps and solution
The number of all mosquito nets is 4 875 The number of villages is 5	The number of mosquito nets to be given to each village =?	The number of mosquito nets for each village is calculated as follows: 4 875÷ **5** = ? 975 5) 4875 −45 037 −35 025 −25 00

		4 875÷ **5** = 975. Each village will get 975 mosquito nets.

Try these:

1. 9 schools equally shared 4 581 Mathematics books. How many books did each get?
2. 7 health centers received 4 991 beds from donors. How many beds did each health center get?

Application activity 2.16

1. 8 schools in our district received 3 848 desks from donors to be shared equally. How many desks were given to each school?
2. Divide equally 2 598 iron sheets to 6 carpenters. How many iron sheets does every carpenter get?
3. A businessman distributed 4 764 cabbages to 4 army stations. How many cabbages did each station get?
4. Uwamahoro sells 4 365 sacks of cements equally in 3 months. How many sacks of cement does she sell every month?

What have you leant in this lesson?

End of unit assessment 2

1. Write 4 978 in words
2. Find the number which has been expanded.

   a) 7 ones, 5 tens, 4 thousands, 9 hundreds.

   b) 9 ones, 3 thousands, 6 tens, 7 hundreds.
3. Find the place value of the underlined digits

   a) 3 586 b) 2 789 c) 4 362 d) 3 978
4. Compare numbers using the following symbols: <, > and =

a) 4 659 ☐ 4 695 b) 4 871 ☐ 4 867

5. Arrange the following numbers in ascending order (from the smallest to the biggest)
   4 879, 4 897, 4 798, 4 789, 4 987, 4 978

6. Arrange the following numbers in descending order (from the biggest to the smallest)
   3 687, 3 678, 3 768, 3 786, 3 867, 3 876

7. Add numbers:

   a) 3 154 + 1 659 = b) 3 876 + 1 112 =

8. Subtract the following numbers:

   a) 4 587 – 3 267 = b) 3 967 – 2 563 =

9. Multiply the following numbers

a)	412	b)	105	c)	209	d)	124	e)	137
	× 12		× 47		× 19		× 35		× 36

10. Divide:

    a) 4 959 ÷ 9 = b)3 785 ÷ 5 = c)2 988 ÷ 6 =

11. In Nyakabanda cell there are 879 women, 839 men and 3 267 children. How many people are in Nyakabanda cell?
12. 4 789 people attended trainings. 2 097 are women; find the number of men who attended the training.
13. At the village there are 276 families and every family planted 18 trees. Find the number of trees which were planted.
14. Share equally 4 298 sacks of cement to 7 businessmen. How many will each businessman get?

UNIT 3

NUMBERS UP TO 10 000

3.0 Introductory activity

Emmy has 150 sacs of sorghum flour.

He has 500 eggs.

He wants to sell some of them. Clients can pay 100Frw at one sac of sorgum flour and 100Frw at one egg.

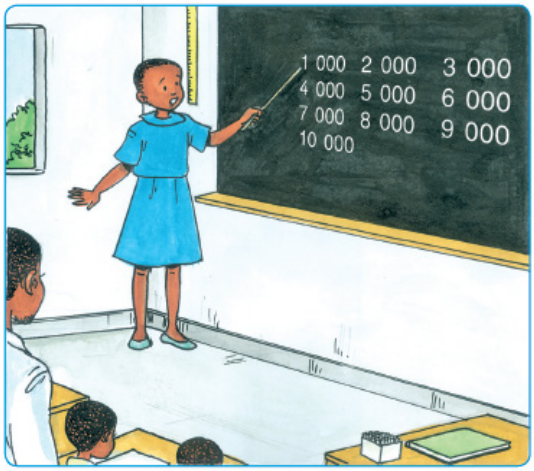
Emmy does not know Mathematics.

The client buys 50 sacs and 20 eggs. Can you help Emmy to find the money he can find? What do you need to learn in Mathematics so that you can help Emmy?

3.1 Read numbers up to 10 000

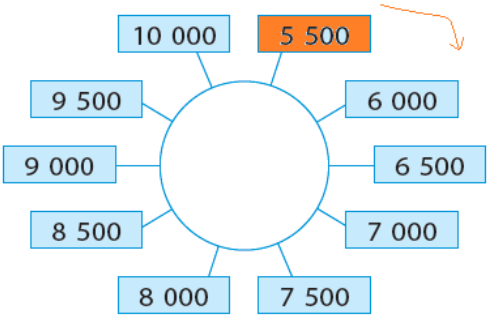
Activity 3.1.1

Use the picture to read aloud the given numbers



Activity 3.1.2

1) Read the numbers on the diagram. Begin with 5 500:



2) Take number cards containing the following numbers:

1	2	3	4	5	6	7	8	9	0

Form 5 different numbers and read them aloud. Numbers between:

a) 5 094 and 5 100

b) 5 500 and 5 596

c) 6 290 and 6 300

d) 7 400 and 7 410

e) 8 600 and 8 610

f) 9 800 and 9 810.

Application activity 3.1

Use the number forming cards and form numbers of 4 digits greater than 5000. Read them to your friends.

1	2	3	4	5
6	7	8	9	0

What have you leant in this lesson?

3.2 Write the numbers up to 10 000 in figures

Activity 3.2.1

Look at the numbers, count and find the missing numbers. Read them aloud to your friends.

a) 5 000 | 5 100 | 5 200 | ☐ | 5 400 | ☐ | 5600 | ☐ | 5 800 | ☐ | 6 000

b) 6 000 | 6 050 | 6 100 | ☐ | 6 200 | ☐ | 6 300 | ☐ | 6 400 | ☐ | 6 500

c) 8 000 | 8 200 | 8 400 | ☐ | 8 800 | ☐ | 9 200 | ☐ | 9 600 | ☐ | 10 000

Activity 3.2.2

Use the following number cards and form 5 numbers between 5 000 and 10 000:

1	2	3	4	5

Read them to your friends.

Application activity 3.2

1) Use the following number cards to form 6 numbers between 5 000 and 10 000:

Read and write them in figures

8	2	3	4

2) Look at numbers, count and fill in the missing numbers:

9 099 | 9 199 | 9 299 | ☐ | 9 499 | ☐ | 9 699 | ☐ | 9 899 | ☐

3) Read the numbers in the table below:

a) 9 794	**d)** 6805	**g)** 6 732
b) 7305	e) 5 936	**h)** 8709
c) 8 935	**f)** 9557	**i)** 8 719

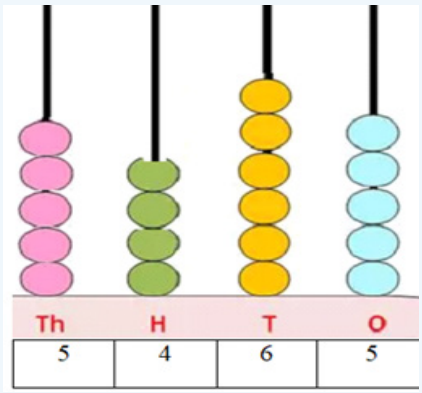
What have you leant in this lesson?

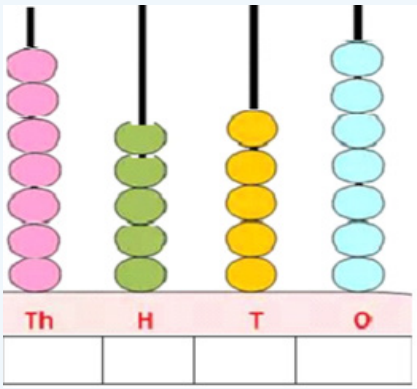
3.3 Place value of digits in the numbers from 0 up to 10 000

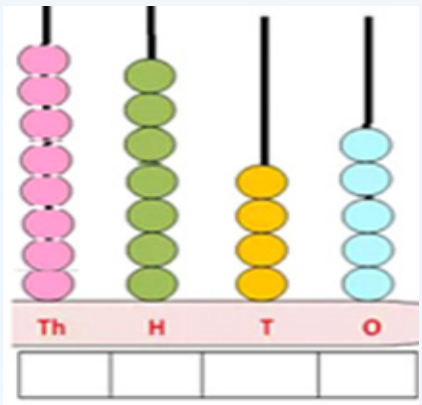
Activity 3.3.1

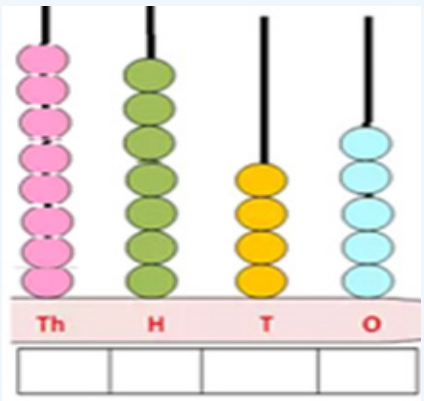
Write the correct number which is shown on the abacus.

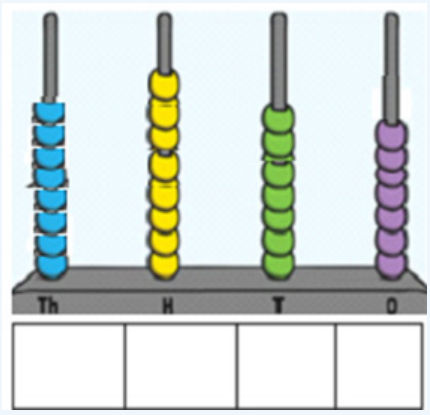
Example:











Activity 3.2.2

Write numbers in the place value table by showing thousands, hundreds, tens and ones.

Example:

The number 5 465 is composed with 5Thousands, 4 Hundreds, 6Tens and 5Ones.

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)
5	4	6	5

Try these

a) 5 465 c) 7 968 e) 9 539

b) 6 392 d) 8 974 f) 6 749

Activity 3.3.3

Use a table of place values and write each digit in the right place.

a. 8 654 = ___Thousands___Hundreds ___Tens___Ones.

b. 6 974 = ___Thousands___Hundreds ___Tens___Ones

c. 7 935= ___Thousands___Hundreds ___Tens___Ones

d. 5 923 =___Thousands___Hundreds ___Tens___Ones.

e. 6 179 =___Thousands___Hundred ___Tens___Ones.

f. 9 756 =___Thousands___Hundreds ___Tens___Ones.

Application activity 3.3

Write the place value of the undelined digit

a) 9 465 c) 7 237 e) 5 871

b) 8 957 d) 6 958 f) 6 597

What have you leant in this lesson?

3.4 Expanded form of a number.

Activity 3.4.1

Expand the given numbers into thousands, hundreds, tens and ones.

Example:

8 745 = 8 000 + 700 + 40 + 5

= (8 × 1 000) + (7 × 100) + (4 × 10) + (5 × 1)

= 8 thousands + 7 hundreds + 4 tens + 5 ones

Try these:

a) 6 248 = d) 7 649 = g) 9 761 =

b) 5 879 = e) 6 719 = h) 7 367 =

c) 7 574 = f) 8 659 = i) 8 625 =

Activity 3.4.2

1) Find the number that was expanded to give the following:

a. (8 × 1 000) + (5 × 100) + (4 × 10) + (7 × 1) =

b. 9 000 + 800 + 70 + 6 =

c. 7 thousands + 2 hundreds + 5 tens =

2) Write down the number that was expanded.

a. 6 thousands, 7 tens, 5 ones and 3 hundreds
b. 9 ones, 6 hundreds ,7 thousands and 1 ten
c. 7 hundreds, 4 ones, 6 tens and 5 thousands
d. 5 tens, 8 hundreds, 8 thousands and 9 ones
e. 7 ones 9 tens 9 thousands and 9 hundreds
f. 9 tens, 7 thousands, 4 ones and 4 hundreds

Application activity 3.4

1) Expand the following numbers

a) 8 567 = c) 9 615 = e) 6 435 =
b) 7 526 = d) 6 452 = f) 7 361 =

2) Find the correct number

a. 8 ones, 5thousands, 7 tens, 9 hundreds
b. 3 ones, 6 tens, 3 thousands, 1 hundred
c. 3 tens, 7thousands, 6 ones, 7 hundreds
d. 5 hundreds, 8 ones, 7 tens, 2 thousands
e. 8 hundreds, 2 ones, 9 thousands, 7 tens
f. 3 ones, 8 thousands, 7 tens , 6 hundreds

What have you leant in this lesson?

3.5 Writing the number in words

Activity 3.5.1

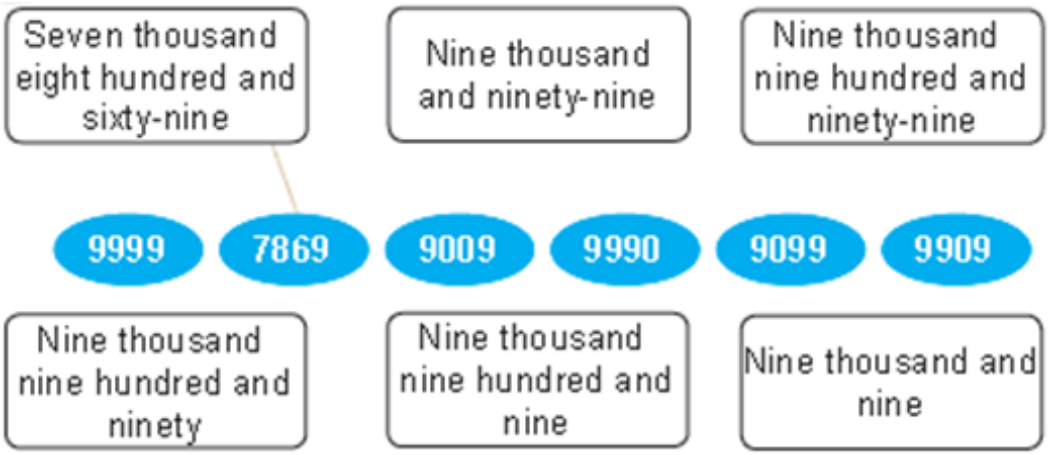
Complete the table

Number	Expanded form	Number in words
9 763	9 000 + 700 + 60 + 3	Nine thousand seven hundred and sixty-three.

...	...	Seven thousand four hundred and eighty-two
9 999	...	...
...	...	Four thousand, nine hundred and ninety-nine
10 000	...	...

Activity 3.5.2

Match the numbers to the appropriate words.



Application activity 3.5

Expand the following numbers and wrte them in words

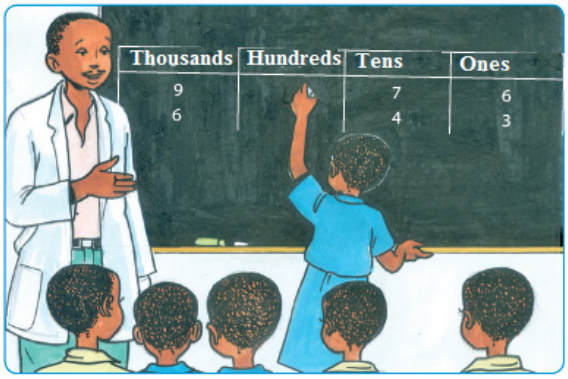
a) 5211 b) 6417

What have you leant in this lesson?

3.6 Comparing two numbers less than or equal to 10 000

Activity 3.6.1

Look at the picture. Learners want to say the biggest and the smallest number.



Example:

6543 is smaller than 9876.It is written as follows: 6 543 < 9 876

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)
9	8	7	6
6	5	4	3

Now, try these:

a) 7 456 ☐ 8 336 b) 9 576 ☐ 9 321

Activity 3.6.2

Use the given number cards and cards with comparison signs. Compare numbers.

Example: 7 649 < 8 295

a) 7 649 6 930 7 850 < > =

b) 5 315 6 479 8 295

Activity 3.6.3

Compare numbers using the following: <, > and =

a) 9 723 ☐ 9 327

b) 6 472 ☐ 6 742

c) 7 215 ☐ 7 152

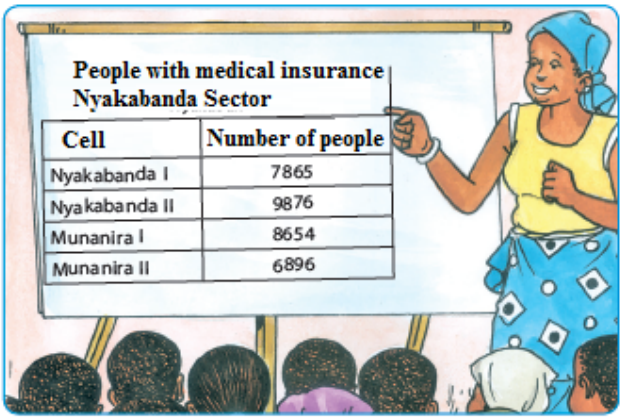
d) 8 617 ☐ 6 817

e) 5 241 ☐ 7 514

f) 6 072 ☐ 6 072

Activity 3.6.4

Look at the picture. Compare number of people with medical insurance in Nyakabanda sector.



Use "**is greater than**", "**is less than**" or "**is equal to**" to compare the following:

a. The number of people with health insurance in Nyakabanda I ____ the number of people with health insurance in Nyakabanda II.

b. The number of people with health insurance in Nyakabanda I ____ the number of people with health insurance in Munanira I

c. The number of people with health insurance in Nyakabanda I ____ the number of people with health insurance in Munanira II

d. The number of people with health insurance in Nyakabanda II ____ the number of people with health insurance in Munanira I

e. The number of people with health insurance in Nyakabanda II____ the number of people with health insurance in Munanira II.

f. The number of people with health insurance in Nyakabanda I ____ the number of people with health insurance in Nyakabanda II

g. The number of people with health insurance in Munanira I ____ the number of people with health insurance in Munanira II.

Application activity 3.6

1) The number of patients at King Fissal Hospital every week is given below:

Men	Women	Children
1678	2087	6167

Use <, > or = to compare :

a. Compare the number of men and the number of women.

b. Compare the number of women and the number of children.

c. Compare the number of men and the number of children.

2) Use <, > and = to compare numbers

a) 8 459 ☐ 8 459

b) 7 384 ☐ 7 249

c) 9 628 ☐ 9 657

d) 5 493 ☐ 5 234

e) 6 734 ☐ 6 734

f) 7 835 ☐ 8 435

g) 5 919 ☐ 9 919

h) 6 828 ☐ 8 821

i) 7 732 ☐ 7 732

j) 8 643 ☐ 6 643

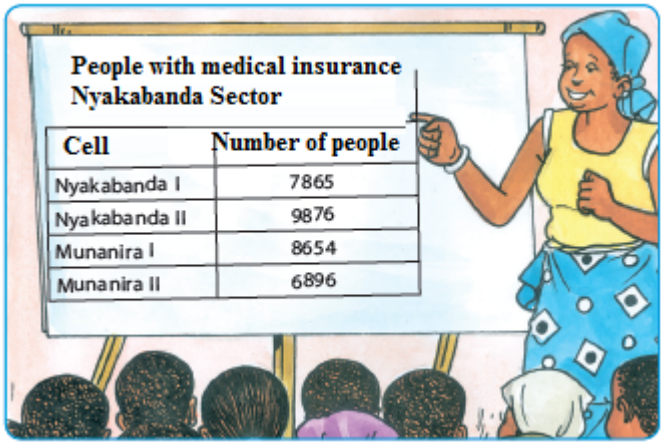
What have you leant in this lesson?

3.7 Arrange numbers between 2000 and 10 000 in ascending or descending order

3.7.1 Arrange numbers in ascending order

Activity 3.7.1

Observe the following picture of people with medical insurance in Nyakabanda sector.



a. Which cell has least number of people with health insurance?

b. Which cell has a biggest number of people with health insurance?

c. Arrange the cells of Nyakabanda Sector from biggest number to least number of people with medical insurance.

Activity 3.7.2

Follow the example and arrange the given numbers in ascending order (from the smallest to the biggest number).

Example:

Arrange the given numbers in ascending order.

6 572, 7 852, 5 792, 7 562

Thousands (Th)	Hundreds(H)	Tens (c)	Ones (O)
5	7	9	2
6	5	7	2
7	5	6	2
7	8	5	2

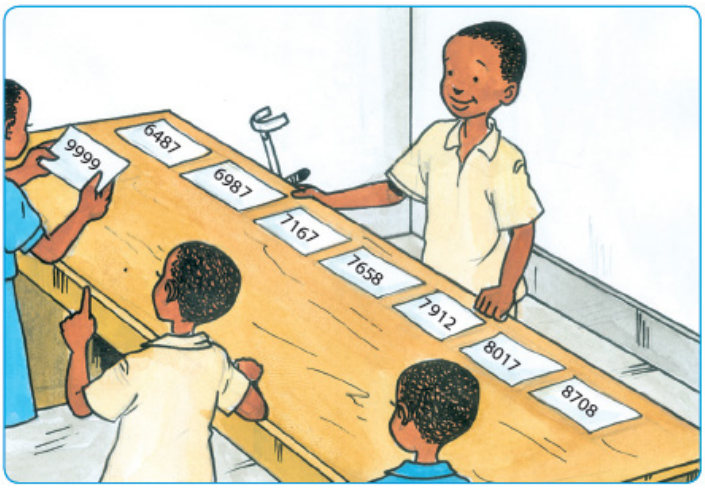
Then, the given numbers in ascending order are: 5 792, 6 572, 7 562, 7 852

Try these:

1) 7 804, 6 218, 5 386 2) 7 358, 6 804, 5 748

Application activity 3.7.1

1) Follow the example on the picture and arrange the given numbers in ascending order



a. 6 439, 9 825, 7 564, 8 943, 9 754

b. 5 842, 6 347, 7 845, 8 015, 6 497

c. 5 739, 9 384, 8 049, 7 193, 7 496

d. 9 437, 8 391, 6 427, 7 409, 8 274

2) Copy the following numbers and shade by blue colour to show the smallest number and by red colour to show the largest number in each row. See for example the first and the last row.

1234	4567	9876	7654	8901	4356
4567	9999	8976	5409	2139	3985
9888	9576	9187	9987	9234	9483
1100	1001	1100	1011	1111	1101
9999	9099	9990	9900	9909	9000

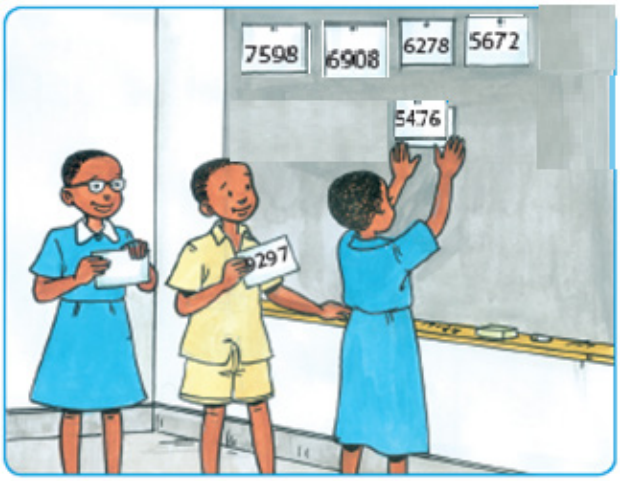
What have you leant in this lesson?

3.7.2 Arrange numbers in descending order

Activity 3.7.3

Look at the picture, imitate what children are doing.

Use the number cards, and arrange the given numbers in descending order.



a. 5 734, 9 354, 6 5 07

b. 6 709, 9 675, 5084

c. 6 901, 8 654, 5 789

d. 6 057, 8765, 5 293

Activity 3.7.4

Arrange numbers in descending order (from the biggest the to the smallest number)

Example: 9 126, 8 965, 5 869, 6 739, 7 629, 8 469

Thousands	Hundreds	Tens	Ones
9	1	2	6
8	9	6	5
8	4	6	9
7	6	2	9
6	7	3	9
5	8	6	9

The given numbers in descending orders are 9 126, 8 965, 8 469, 7 629, 6 739, 5 869.

Try these:

1) 7 483, 8 534, 5 192

2) 7 345, 9 567, 6 978

3) 8 876, 7 456, 6 012

4) 7 105, 9 271, 6 823

Application activity 3.7.2

Arrange the numbers in descending order (from the biggest to the smallest number)

a. 5 923, 9325, 5 392

b. 6 541, 5 146, 6 154

c. 6 789, 7 698, 9 876

d. 8 279, 8 972, 8729

What have you leant in this lesson?

3.8 Addition of numbers whose sum does not exceed 10 000

3.8.1 Addition without carrying

Activity 3.8.1

Add numbers.

Example: 5 432 + 4 567 = ___

4th: I add thousands	3rd: I add the hundreds	2nd: I add the tens	1st: I add the ones
5	4	3	2
+ 4	5	6	2
9	9	9	2

Then, 5 432 + 4 567 = **9 999**.

Try these

a) 6 543 + 2 310

b) 4 567 + 3 421

c) 5 123 + 3 754

d) 9 217 + 682

e) 8 012 + 987

Application activity 3.8.1

a) 5643 + 256 = c) 4572 + 4316 =

What have you leant in this lesson?

3.8.2 Addition with carrying

Activity 3.8.3

Add numbers

Example: 7 698 + 1 479 =___

Fourth	Third	Second	First
Finally, I add thousands: 7+1=8; 8+1=9	I add hundreds: 6+4=10. 10+1=11. I write 1 and carry 1 to thousnds.	I add tens: 9+7=16. 16+1=17. I write 7 and carry 1 to hundreds.	I add ones, 8+9=17. I write 7 and carry 1 to tens.

Thousands	Hundreds	Tens	Ones
1	1	1	
7	6	9	8
+ 1	4	7	9
9	1	7	7

Then, 7 698 + 1 479 = 9 177

Try these:

1) Add

a)1 943 + 7 689 = b) 2 976 + 6 387 = c) 3 987 + 5 679 =

d)4 239 + 4 876 = e) 5 795 + 3 498 = f) 6 467 + 2 944 =

Activity 3.8.4

Use the following number cards and cards with + and = and do the task below:

A)	3 294	6 095	5 324	4 852	2 698	7 689	8 437
B)	5 789	2 987	3 678	4 897	6 574	1 567	1 389
C)	9 826	9 272	9 083	9 749	9 256	9 082	9 002

- Take one number card from A ;
- Take the card with addition sign [+] ;
- Take the number card from B;
- Take the card with the sign [=] ;
- Then, select the correct answer from the cards in C.

Example:

3 294 + 5 789 = 9 083

Application activity 3.8.2

Add the following

a) 7 568 + 1 928

b) 8 532 + 987

c) 9 274 + 389

d) 6 765 + 2 579

e) 4 723 + 5 187

What have you leant in this lesson?

3.9 Word problems involving addition where the sum does not exceed 10 000

Activity 3.9

Read and find the answer.

Example:

On Monday, group members planted 4 567 cabbage seedlings and on Tuesday, 3 978 cabbage seedlings were planted. How many cabbage seedlings did the group members plant in two days?

Given	Question	Steps and solution
The number of planted seedlings on Monday is 4 567 The number of planted seedlings on Tuesday is 3 978	The total number of planted seedlings in two days =?	The total number of planted seedlings in two days is calculated as follows: 4 567 + 3 978 = 8 545 seedlings 1 11 4 567 + 3 978 8 545

Try these:

1. This year, the numbers of vaccinated children in Huye District are the following: 5 321 boys and 3 789 girls. How many children were vaccinated altogether?
2. In 2018, Gatsibo planted 3 657 coffee seedlings. In 2019, it planted 5 794 coffee seedlings. Find the total number of coffee seedlings which were planted in two years.
3. Girinka Munyarwanda program distributed 5 423 cows in one district, 3 798 cows in another district. How many cows were distributed in two districts?

Application activity 3.9

1. 7 543 men and 1 978 women watched a football match between Gasabo and Kicukiro districts. How many people watched the match altogether?
2. During the last census, 4 987 families were registred in Kamurehe sector, and 4 678 families in Kabuye sector. How many families were registred in the two sectors?

What have you leant in this lesson?

3.10 Subtraction of numbers within the range of 10 000

3.10.1 Subtraction without borrowing

Activity 3.9

Subtract numbers:

Example: 6 789 – 5 676 = ___

I subtract thousands from thousands	I subtract hundreds from hundreds	I subtract tens from tens	I subtract ones from ones
Thousands	**Hundreds**	**Tens**	**Ones**
6	7	8	9
- 5	6	7	6
1	1	1	3

Then, 6 789 – 5 676=1 113

Try these:

a) 8 569 – 5 417

b) 9 738 – 6 315

c) 7 686 – 5 452

d) 8 679 – 7 543

e) 6 974 – 6 432

Activity 3.10

Use the following number cards and cards with – and = and do the task below:

A)	9 876	8 567	7 456	6 345	9 234	8 456	7 986
B)	7 645	5 435	4 142	4 203	6 023	5 031	3 654
C)	2 142	4 332	3 425	2 231	3 314	3 211	3 132

- Take one number card from A ;
- Take the card with subtraction sign – ;
- Take the number card from B which is next to the one you got from A;

- Take the card with the sign [=];
- Then, select the correct answer from the cards in C.

Example:

9 876 [−] 7 645 [=] 2 231

Application activity 3.10.1

Work out the subtraction:

a) 8 589 − 5 046

b) 7 953 − 5 720

c) 6 789 − 5 417

d) 5 765 − 3 612

What have you leant in this lesson?

3.10.2 Subtraction with borrowing

Activity 3.10.3

Subtract the following:

Example: 9 531 – 6 789 =

Subtract using a place value table

Subtract using a place value table

Thousands (Th)	Hundreds (H)	Tens (T)	Ones (O)
	14	12	11
8	4	2	
~~9~~	~~5~~	~~3~~	1
– 6	7	8	9
2	7	4	2

Subtract vertically

$$\begin{array}{r} {\scriptstyle 8\ \ 4\ \ 2}\ \ {\scriptstyle 14\ 12\ 11} \\ 9\ 5\ 3\ 1 \\ -\ 6\ 7\ 8\ 9 \\ \hline 2\ 7\ 4\ 2 \end{array}$$

Therefore, 9 531 – 6 789 = 2742

Explanations:

We have 9531 – 6789 =

a. I write the second number under the first number as per place values: ones under ones, tens under tens, hundreds under hundreds and thousands under thousands.

b. I subtract starting from the right:

- For Ones: 1 -9 is impossible, I borrow 1 ten from 3 and I get 10 +1= 11. Then, 11-9 = 2
- For tens: I remained with 3-1= 2. Then, 2-8 is impsssible, I borrow 1 hundred from 5. I get 10 tens +2tens = 12tens. Then, 12-8 = 4.
- For hundereds: I remained with 5-1= 4. Then, 4 – 7 is impossible, I borrow 1 thousand from 9. I get 10 hundreds + 4 hundreds = 14 hundreds. Then, 14 – 7 = 7.

For thousands: I remained with 9 -1 = 8. Then, 8 – 6 = 2.

Therefore, 9 531 – 6 789 = 2742.

Now, try these:

a) 7 234 – 5 897 b) 6 013 – 5 739 c) 9 543 – 8 796 d) 8 250 – 6 592 e) 5 123 – 2 768

Activity 3.10.4

Use the following number cards and cards with – and = and do the task below:

A)	5 321	6 024	7 431	8 143	9 012	6 503	8 432
B)	2 789	4 658	5 865	6 759	8 945	3 967	6 579
C)	2 536	1 853	1 384	1 366	2 532	67	1 566

- Take one number card from A ;
- Take the card with subtraction sign – ;

- Take the number card from B which is next to the one you got from A;
- Take the card with the sign [=];
- Then, select the correct answer from the cards in C.

Example:

5 321 [–] 2 789 [=] 2 532

Application activity 3.12

Carry out the subtraction:

a) 6 120 – 3 249 =
b) 7 432 – 4 567 =
c) 8 105 – 5 258 =
d) 9 043 – 6 398 =

What have you leant in this lesson?

3.11 Word problems involving subtraction in real life situations

Activity 3.11

Read and find the answer

Example:

Our Province organized a poem writing competition and 9768 pupils were registered. If at the first selection 8 989 pupils were not allowed to, find the number of pupils allowed to continue the competition.

Given	Question	Steps and solution
The number of all registered pupils is 9768 The number of not allowed pupils is 8989	The number of pupils allowed to continue competition = ?	The number of pupils to continue the competition is calculated as follows: 9 768 – 8 989 = 779 pupils. 8 16 15 18 ~~9~~ ~~7~~ ~~6~~ 8 – 8 9 8 9 ~~0~~ 7 7 9

Try these:

1. In a refugee camp, there are 9 732 refugees. If 7 986 refugees received donations, find the number of refugees who didn't receive donations.
2. In the school there are 9 321 pupils. If 5 867 are girls, how many boys are in the school?
3. In a cell, there are 6 830 families and 5 987 among them received mosquito nets. Find the number of families which did not receive mosquito nets.

Application activity 3.11

1. Gisa harvestes 7 120 cabbages and sells 6 987 cabbages. How many cabbages does he remain with?
2. Last year, our sector registered 9 123 children to be vaccinated and 879 among them have not received all vaccinations. Find the number of children who received all vaccinations.

3.12 Multiply a 3-digit number by a 2-digit number

Activity 3.12.1

Multiply a 3-digit number by a 2-digit number.

Example: 325 × 29 = ___

Thousands	Hundreds	Tens	Ones
	3	2	5
1	×	2	9
2	9	2	5
+ 6	5	0	
9	**4**	**2**	**5**

steps:

1. Multiply 325 ones: 325 X 9 - 2925
2. I multiply 325 by 2 tens 325 X 2 = 650
3. Add the 2 products.

```
  3 2 5
X   2 9
-------
  2 9 2 5
+ 6 5 0
-------
  9 4 2 5
```

Now, try these:

a) 295 × 15

b) 198 × 19

c) 356 × 12

d) 139 × 34

e) 108 × 45

f) 265 × 35

g) 425 × 16

h) 444 × 22

i) 502 × 22

j) 636 × 13

Activity 3.12.2

Use the following number cards and cards with × and = and do the task below:

A)	378	529	638	439	297	907	412
B)	25	18	15	21	29	11	24
C)	9 977	9 219	9 888	9 450	8 613	9 522	9 570

- Take one number card from A ;

- Take the card with multiplication sign [×] ;
- Take the number card from B which is next to the one you got from A;
- Take the card with the sign [=] ;
- Then, select the correct answer from the cards in C.

Example:

[378] [×] [25] [=] [9 450]

Application activity 3.12

Multiply the following numbers.

a) 789 × 12 b) 697 × 13 c) 874 × 11 d) 527 × 15 e) 472 × 16

What have you leant in this lesson?

3.13 Word problems of multiplication of a 3-digit number by a 2-digit number

Activity 3.13

Read and find the answer for the following activities.

Worked Example:

A coffee plantation has trees on 357 rows and on each row, there are 28 trees. Find the total number of trees in the coffee plantation.

The number of rows in the plantation is 357.	The number of all trees in the coffee plantation =?	The number of all trees in the plantation is calculated as follows: 357 x 28 =

		3 5 7 1. Multiply 357 by 8 X 2 8 2. I multiply 357 by 2 2 8 5 6 3. Add the 2 products. + 7 1 4 ↓ 9 9 9 6 357 x 28 = 9 996 Therefore, The number of all trees in the plantation is 9996.

Try these:

1. 416 sectors were given cows and each sector received 23 cows. Find the total number of cows received by 416 sectors.
2. In the hall, there are 798 rows of chairs and on each row, there are 12 people. Find the total number of people in the hall.
3. Find the number of pupils to be in 29 schools if in each school there are 287 pupils.

Application activity 3.13

A cooperative has 479 hens. Each hen produces 18 chicks every year. Find the total number of chicks produced by all hens per year.

What have you leant in this lesson?

3.14 Multiply numbers by 100 and 1000

Activity 3.14.1

Study the given example and explain how it is done.

Example

1) 75 × 100 = 7 500 2) 5 × 1 000 = 5 000

Work out the following numbers:

1) 8 × 1 000 =
2) 9 × 1 000 =
3) 67 × 100 =
4) 5 × 1 000 =

Activity 3.14.2

Do quick multiplication of the following numbers

a) 99 × 100 =
b) 7 × 1 000 =
c) 6 × 1 000 =
d) 78 × 100 =
e) 57 × 100 =
f) 9 × 1 000 =

Application activity 3.14

Fill in with the correct number 100 or1000.

a) ☐ × 3 = 3 000
b) 69 × ☐ = 6 900
c) 8 × ☐ = 8 000
d) 87 × ☐ = 8 700
e) ☐ × 7 = 7 000
f) 76 × ☐ = 7 600
g) 6 × ☐ = 6 000
h) 5 × ☐ = 5 000

What have you leant in this lesson?

3.15 Division without a remainder of a 4-digits-number by a 1-digit number

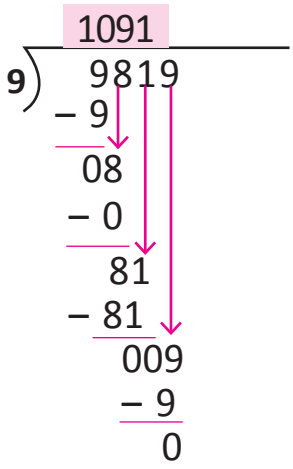
Activity 3.15.1

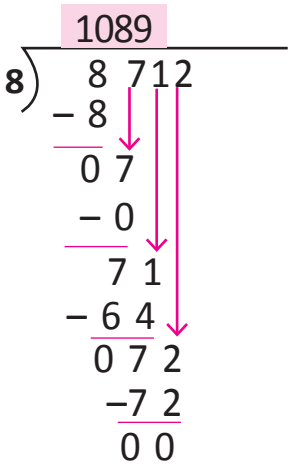
Follow the example and divide:

Example

a) 9 819 ÷ 9 = ? b) 8 712 ÷ 8 = ?

We use the long division method:





Therefore, a) 9 819 ÷ 9 = 1091 b) 8 712 ÷ 8 = 1089

Now, try these:

1) 7 496 ÷ 8 = 2) 6 327 ÷ 9 = 3) 7 049 ÷ 7 =

Activity 3.15.2

Use the following number cards and cards with ÷ and = and do the task below:

A)	8 984	6 576	8 952	8 172	7 985	8 491	9 879
B)	8	4	6	9	5	7	3
C)	908	1 213	1 597	1 492	1 644	3 293	1 123

- Take one number card from A ;
- Take the card with division sign ÷ ;
- Take the number card from B which is next to the number you got from A;
- Take the card with the sign = ;
- Then, select the correct answer from the cards in C.

Example

8 984	÷	8	=	1 123

Application activity 3.15

Work out the following:

a) 9 549 ÷ 9 = b) 8 728 ÷ 8 = c)7 952 ÷ 7 =

d) 6 906 ÷ 6 = e) 6 585 ÷ 5 = f) 8 976 ÷ 4 =

What have you leant in this lesson?

3.16 Word problems involving division without remainder

Activity 3.16.1

Read and find the answer.

Example

Divide equally 9 872 books among 8 schools. How many books can each school get?

Given	Question	Solution
Number of books is 9 872 Number of schools to get books is 8	The number of books to be given to each school=?	The number of books for each school is 9 872÷ **8** = 1 234 books. Each school will get 1 234 books.

Now, try these:

1. There are 9 891 cows from the District to be distributed equally to 7 sectors. How many cows will each Sector receive?

2. The total of 7 992 voting cards were equally distributed to 8 voting centers. Find the number of voting cards to be received by each center.
3. Equally distribute 5 490 notebooks into 9 boxes. What is the number of notebooks will be put in each box?
4. Kaneza made 9 896 bricks to be used in constructing 4 equal houses. Find the number of bricks to be reserved for each house.

Activity 3.16.2

1. At the end of lower Secondary, 7 895 students were equally sent to 5 schools to continue their studies. Find the number of students received by each school.
2. There are 6 797 laptops to be distributed equally to 7 districts. Find the number of laptops to be distributed to each district.

Application activity 3.16

1. A group of workers plants 8 750 trees in 5 days. He plants the same number of trees per day. How many trees do workers plant per day.
2. Equally share 9 400 fruit seedlings to 4 cells. How many fruit seedlings does each cell receive?

What have you leant in this lesson?

End of unit assessment 3

1. Write 9 678 in words
2. Find the number with:

   a) 8 ones 9 tens 7 thousands 6 hundreds

   b) 5 ones 8 thousands 4 tens 3 hundreds
3. Find the number.

5 000 + 900 + 60 + 8 =

4. Find the place value of the undelined digits

   a) 8 759 b) 7 645 c) 6 975 d) 9 542

5. Compare numbers using the following symbol: <, > or =

   a) 8 189 ☐ 8 819 c) 7 689 ☐ 7 689

   b) 6 583 ☐ 6 538 d) 9 587 ☐ 9 578

6. Arrange numbers in ascending order (from the smallest to the biggest number)

   7 365, 7 356, 5 746, 4 784, 8 497, 6 479

7. Arrange numbers in descending order (from the biggest to the smallest number)

   5 708, 6 718, 4 738, 9 786, 6 827, 8 710

8. Add:

   a) 6 574 + 2 695 = b) 7 865 + 1 879 =

9. Subtract:

   a) 7 856 – 5 976 = b) 8 761 – 6 819 =

10. Multiply:

a)	b)	c)	d)	e)
198 × 49	265 × 37	349 × 28	573 × 16	497 × 17

11. Divide:

    a) 7985 ÷ 5 = b) 8526 ÷ 6 =

12. Kaneza buys 8 759 sacks in the morning. In the afternoon Kaneza sells 5 784 sacks from them. How many sacks does he remain with?

13. If one lorry carries 300 sacks of cement, how many sacks will be carried by 24 Lorries?

14. Equally distribute 981 mangoes in 9 baskets. Find the number of mangoes to be in each basket.

UNIT 4

FRACTIONS HAVING A DENOMINATOR LESS THAN OR EQUAL TO 10

4.0 Introductory activity 4

Mugiraneza has 3 children.

Mugiraneza buys one bar of soap.

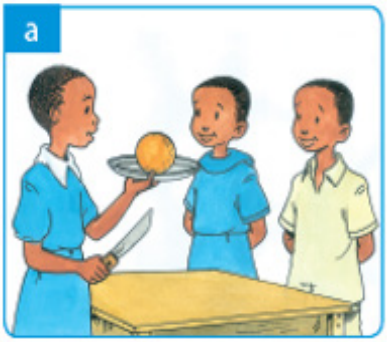
Mugiraneza wants to share equally a bar of soap to children but he does not know how to explain the number of pieces of soap for each child. What does Mugiraneza need to know in Mathematics?

4.1 Reading and writing fractions.

Activity 4.1.1

Look at the picture. Pupils are sharing an orange. At each picture, how many equal parts of the whole orange are there?

a



b

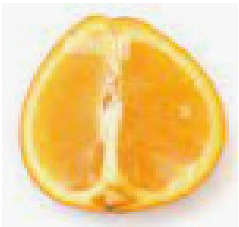
c

d

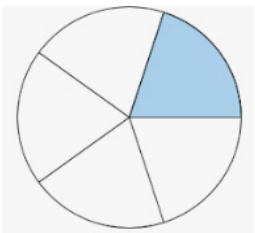
e

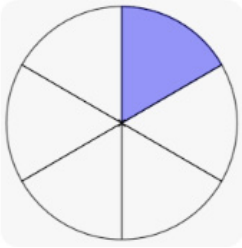
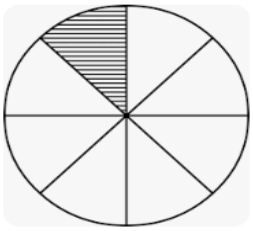
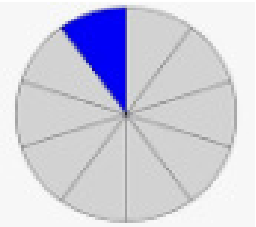
Activity 4.1.2

Read and study the whole orange and parts of an orange.

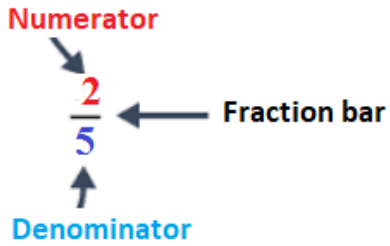
Representation	Fraction	Names
 A whole orange	1	A whole
		A half
		A third
		A quarter

Now look at the shaded part of a whole:

		A fifth

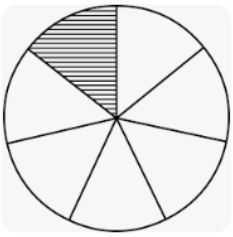
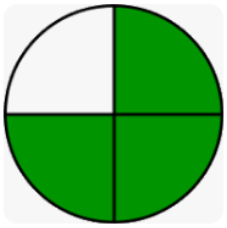
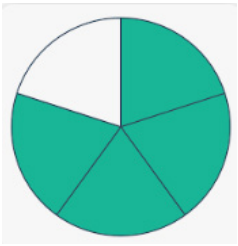
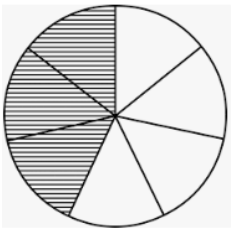
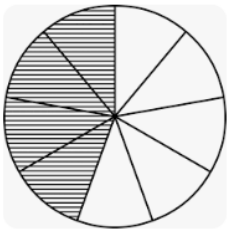
		A sixth
		An eighth
		A tenth

The numbers such as $\frac{1}{6}$, $\frac{1}{10}$ and $\frac{2}{5}$ are fractions. Let us consider the fraction $\frac{2}{5}$:



The denominator shows the total number of all parts divided in a whole.In our fraction $\frac{2}{5}$, we have the total of 5 parts.

The numerator shows the number of parts we have to be considered. In our fraction $\frac{2}{5}$, we have 2 parts that were shaded. Then, complete the fraction of the shaded part.

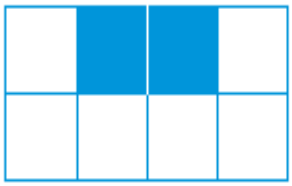
Representation	Fraction	Names	Meaning
 *Red color*		Two thirds	2 parts are shaded in a total of 3 parts.
		A seventh	1 part is shaded in a total of 7 parts.
	___	Three quarters	3 parts are shaded in a total of 4 parts
	____	Four fifths	4 parts are shaded in a total of 5 parts.
	____	Three sevenths	3 parts are shaded in a total of 7 parts.
	____	Four ninths	4 parts are shaded in a total of 9 parts.

	___	Five eighths	5 parts are shaded in a total of 8 parts.

Activity 4.1.3

Write in words and in figures the colored fraction

a) 

b) 

c) 

Application activity 4.1

1. Write a fraction represented by the following color:

a. Red b. Blue c. Black d. Yellow

2. Read and write in figures the following fraction:

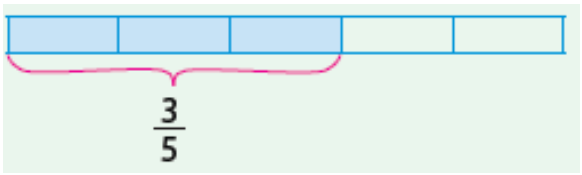
a. Nine tenths:___
b. Seven eighths:___
c. Seven ninths: ___
d. Five tenths:___
e. Seven tenths:___
f. Five eighths:___

What have you leant in this lesson?

4.2 Shading and illustrating fractions

Activity 4.2.1

Study the picture and answer by **True** or **False**.



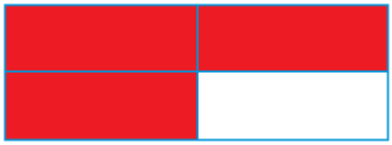
a) $\frac{3}{5}$ of this image is shaded. ____

b) $\frac{1}{5}$ of this image is shaded. ____

c) $\frac{2}{5}$ of this image is not shaded. ____

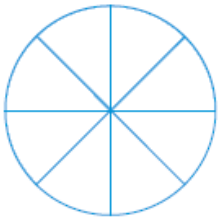
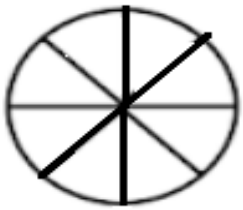
Activity 4.2.2

Write **in figures** the fraction of the shaded and unshaded parts

	Picture	**Fraction of shaded part**	**Fraction of unshaded part**
a)		___	___
b)		___	___

Activity 4.2.3

Shade the part related to the the fraction and fill in the missing fractions

	Picture	Fraction of shaded part	Fraction of unshaded part
a)		$\frac{7}{9}$	___
b)		—	$\frac{3}{9}$
c)		—	$\frac{1}{4}$
d)		$\frac{2}{8}$	—

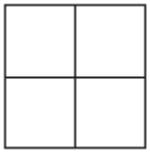
Application activity 4.2

1) Shade the parts equal to the following fractions:

a) $\frac{4}{5}$ c) $\frac{3}{8}$ e) $\frac{6}{7}$

b) $\frac{2}{3}$ d) $\frac{7}{9}$ f) $\frac{4}{10}$

2) Shade $\frac{3}{4}$ of this image:

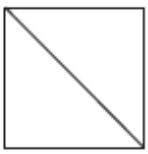
a) 

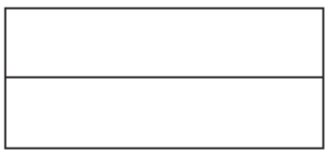
b) 

c) 

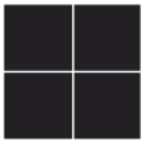
3) Shade $\frac{1}{2}$ of this image:

a) 

b) 

c) 

4) Write in words and in figures the fraction represented by each shaded fraction in the diagrams below:

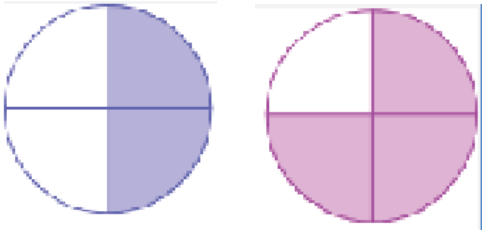
Diagram	Fraction in figures	Fraction in words
	___	___
	___	___
	$\frac{4}{4}$	___

What have you leant in this lesson?

4.3 Comparing fractions with a common denominator

Activity 4.3.1

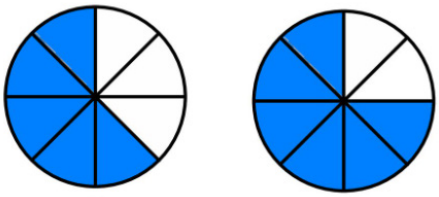
Observe the shaded parts and complete by: **greater than** or **less than**



$\frac{2}{4}$ $\frac{3}{4}$

The blue part is smaller than the pinck part

$\frac{2}{4}$ is _____ $\frac{3}{4}$



$\frac{5}{8}$ $\frac{6}{8}$

$\frac{6}{8}$ is ____ $\frac{5}{8}$

Activity 4.3.2

Study the shaded fractions and complete by: > (greater than), < (less than) or = (equal)

1) 

$\frac{1}{4}$ < $\frac{2}{4}$

2) 

$\frac{3}{6}$ ____ $\frac{5}{6}$

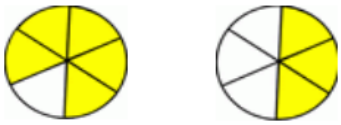
3) 

$\frac{2}{8}$ ____ $\frac{4}{8}$

4) 

$\frac{2}{4}$ ____ $\frac{1}{4}$

5)



$\frac{5}{6}$ ____ $\frac{3}{6}$

6)

$\frac{3}{4}$ ____ $\frac{1}{4}$

7)

$\frac{2}{6}$ ____ $\frac{3}{6}$

8)

$\frac{2}{8}$ ____ $\frac{3}{8}$

Activity 4.3.3

Use <, > or = to compare fractions.

Example: Use <, > or = to compare the following fractions

a) $\frac{1}{3} < \frac{2}{3}$ b) $\frac{2}{4} < \frac{1}{4}$ c) $\frac{2}{3} = \frac{2}{3}$

Try these:

a) $\frac{3}{8} \square \frac{1}{8}$ c) $\frac{1}{2} \square \frac{1}{2}$ e) $\frac{4}{6} \square \frac{5}{6}$

b) $\frac{5}{9} \square \frac{2}{9}$ d) $\frac{5}{5} \square \frac{5}{5}$ f) $\frac{1}{4} \square \frac{4}{4}$

Application activity 4.3

a) $\frac{1}{3} \square \frac{2}{3}$ d) $\frac{2}{5} \square \frac{3}{5}$ g) $\frac{1}{6} \square \frac{4}{6}$

b) $\frac{1}{4} \square \frac{3}{4}$ e) $\frac{4}{7} \square \frac{1}{7}$ h) $\frac{4}{10} \square \frac{7}{10}$

c) $\frac{4}{5} \square \frac{2}{5}$ f) $\frac{5}{6} \square \frac{5}{6}$ i) $\frac{7}{9} \square \frac{8}{9}$

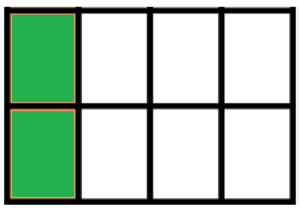
What have you leant in this lesson?

4.4. Ordering like fractions

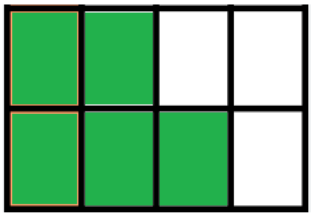
4.4.1 Ordering like fractions from the smallest to the greatest

Activity 4.4.1

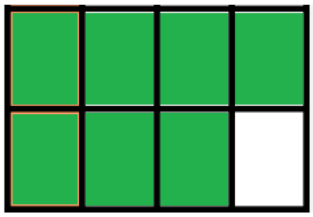
Study the number of shaded parts of a whole in each diagram.



$\frac{2}{8}$



$\frac{5}{8}$



$\frac{7}{8}$

Compare the numbers of shaded parts and complete:

Numerators from the smallest to the greatest: ___ , ___ , ___.

Fractions from the smallest to the greatest: ____ , ___, ___

Activity 4.4.2

Study this order of fractions and answer by **yes** or **no**.

Example:

$\frac{5}{6}, \frac{3}{6}, \frac{2}{6}, \frac{1}{6}, \frac{6}{6}, \frac{4}{6} \longrightarrow \frac{1}{6}, \frac{2}{6}, \frac{3}{6}, \frac{4}{6}, \frac{5}{6}, \frac{6}{6}$

Are fractions arranged from the smallest to the greatest?

Activity 4.4.3

Arrange these fractions from the lowest to the greatest

a) $\frac{5}{10}, \frac{3}{10}, \frac{2}{10}, \frac{1}{10}, \frac{6}{10}$

b) $\frac{2}{9}, \frac{1}{9}, \frac{6}{9}, \frac{4}{9}, \frac{5}{9}$

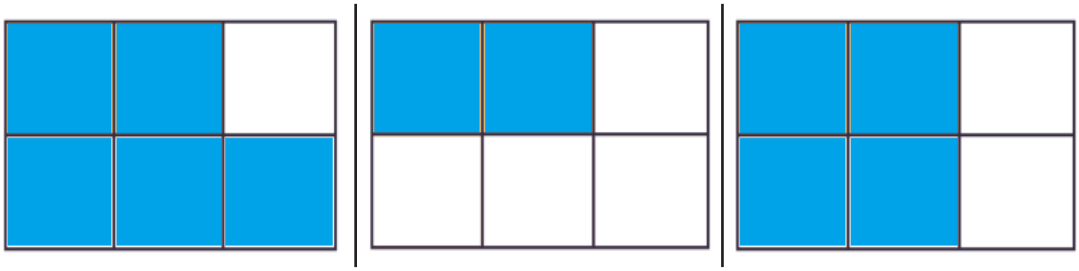
c) $\frac{4}{10}, \frac{8}{10}, \frac{10}{10}, \frac{7}{10}, \frac{9}{10}$

d) $\frac{6}{8}, \frac{3}{8}, \frac{5}{8}, \frac{1}{8}, \frac{2}{8}$

4.4.2 Ordering like fractions from the greatest to the lowest

Activity 4.4.4

Study the number of shaded parts of a whole in each diagram.



$\frac{5}{6}$ $\frac{2}{6}$ $\frac{4}{6}$

The 3 fractions starting by the greatest to the lowest: ___, ____, ____.

Activity 4.4.5

Use the example to arrange fractions from the greatest to the lowest.

Example:

$\frac{5}{7}, \frac{3}{7}, \frac{2}{7}, \frac{7}{7}, \frac{6}{7}, \frac{4}{7} \longrightarrow \frac{7}{7}, \frac{6}{7}, \frac{5}{7}, \frac{4}{7}, \frac{3}{7}, \frac{2}{7}$

Try these:

a) $\frac{5}{6}, \frac{3}{6}, \frac{2}{6}, \frac{1}{6}, \frac{6}{6}$

b) $\frac{4}{4}, \frac{3}{4}, \frac{2}{4}, \frac{1}{4}$

c) $\frac{2}{5}, \frac{1}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$

d) $\frac{3}{3}, \frac{1}{3}, \frac{2}{3}$

Application activity 4.4

1. Arrange these fractions from the smallest to the biggest.

a) $\frac{3}{7}, \frac{2}{7}, \frac{7}{7}, \frac{6}{7}, \frac{4}{7}$

b) $\frac{10}{10}, \frac{2}{10}, \frac{8}{10}, \frac{6}{10}, \frac{9}{10}$

c) $\frac{8}{9}, \frac{1}{9}, \frac{6}{9}, \frac{9}{9}, \frac{5}{9}$

d) $\frac{2}{5}, \frac{1}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$

2. Arrange from the greatest fraction to the lowest.

a) $\frac{3}{8}, \frac{2}{8}, \frac{7}{8}, \frac{6}{8}, \frac{4}{8}$

b) $\frac{5}{6}, \frac{2}{6}, \frac{4}{6}, \frac{6}{6}, \frac{1}{6}$

c) $\frac{3}{4}, \frac{1}{4}, \frac{2}{4}, \frac{4}{4}$

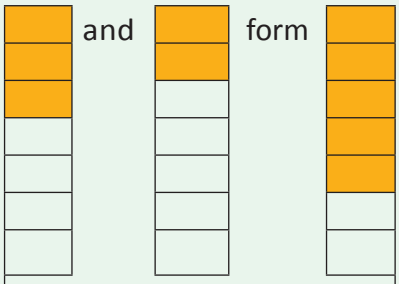
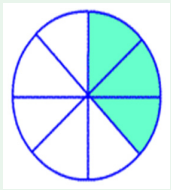
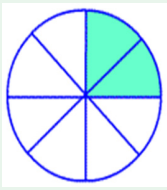
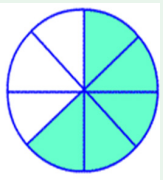
d) $\frac{2}{3}, \frac{1}{3}, \frac{3}{3}$

What have you leant in this lesson?

4.5 Addition of fractions with common denominator

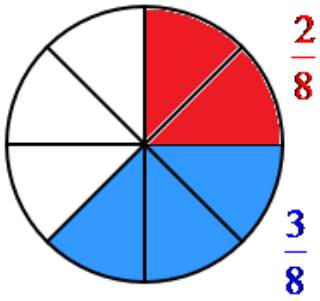
Activity 4.5.1

Study the example

Example:	Then, complete:
 and form	 and  form 
$\frac{3}{7} + \frac{2}{7} = \frac{5}{7}$	$\frac{\quad}{\quad} + \frac{\quad}{\quad} = \frac{\quad}{\quad}$

Activity 4.5.2

Look at the part shaded in red color and the part shaded in blue color. What fraction do they make altogether?



$$\frac{2}{8}+\frac{3}{8}=\text{—}$$

Activity 4.5.3

Add fractions

Example: Add the following fractions

a) $\frac{5}{9}+\frac{2}{9}=$

$\frac{5}{9}+\frac{2}{9}=\frac{5+2}{9}=\frac{7}{9}$

b) $\frac{4}{10}+\frac{5}{10}=$

$\frac{4}{10}+\frac{5}{10}=\frac{4+5}{10}=\frac{9}{10}$

Try These:

a) $\frac{3}{8}+\frac{1}{8}=$

b) $\frac{2}{9}+\frac{7}{9}=$

c) $\frac{2}{7}+\frac{3}{7}=$

d) $\frac{2}{4}+\frac{1}{4}=$

e) $\frac{3}{8}+\frac{1}{8}=$

f) $\frac{4}{10}+\frac{1}{10}=$

Word problems involving addition of fractions having common denominators

Activity 4.5.4

Read and add fractions

Example: Add the following fractions

Kalisa planted $\frac{1}{8}$ of trees in his garden. His workers planted $\frac{5}{8}$ of trees in the same garden.Find the fraction of trees planted by kalisa and his workers altogether.

Data	Question	Steps and solution
Fraction planted by Kalisa: $\frac{1}{8}$ Fraction planted by workers of Kalisa: $\frac{5}{8}$.	Total of fractions.	The total of fractions: $\frac{1}{8}+\frac{5}{8}=\frac{1+5}{8}=\frac{6}{8}$

Try these:

1)Mutesi uses $\frac{3}{5}$ of her notebooks in the first term. In the second term she uses $\frac{1}{5}$ of her notebooks. What fraction of notebooks used by Mutesi in the first and the second terms?

2) Mutunzi has a farm of cows. $\frac{3}{10}$ of cows are milking cows. Mutunzi buys other milking cows equal to $\frac{6}{10}$ of his cows. What is the fraction of milking cows for Mutunzi in his farm?

3) In the morning a shopkeeper sells $\frac{2}{7}$ of the sack of sugar. Afternoon the shopkeeper sells $\frac{4}{7}$ of the sack of sugar. What is the fraction of the sack of sugar does the shopkeeper sell altogether?

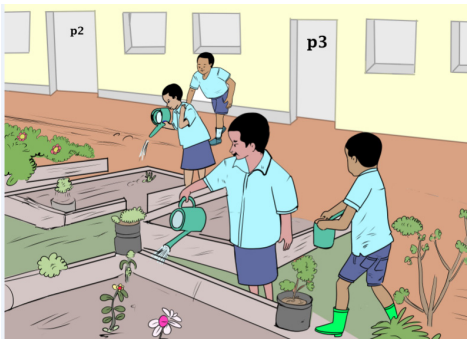
Application activity 4.5

1) Find the sum of the following fractions.

a) $\frac{4}{8}+\frac{2}{8}=$ b) $\frac{2}{10}+\frac{5}{10}=$ c) $\frac{3}{9}+\frac{1}{9}=$ d) $\frac{2}{7}+\frac{1}{7}=$

2) Uwera shares the bread to children. In the morning, uwera gives them $\frac{5}{10}$ of the bread. In the afternoon, Uwera gives them $\frac{3}{10}$ of the bread. What total fraction of bread does Uwera give them in the morning and in afternoon?

3) Pupils of P3 prepared $\frac{4}{9}$ of the school's garden. Pupils of P2 prepared $\frac{2}{9}$ of the same garden. What fraction of the compound is prepared by P3 and P2 pupils?



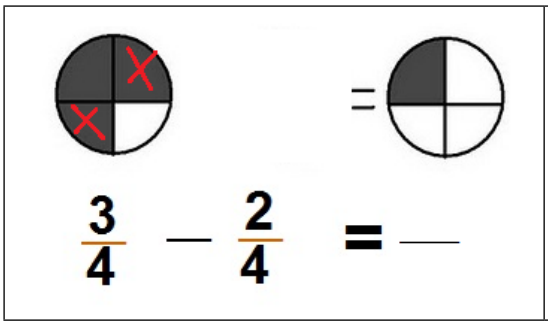
4) A tourist covered $\frac{3}{8}$ of his journey before noon and $\frac{4}{8}$ of it in the afternoon.What fraction of the journey did he cover?

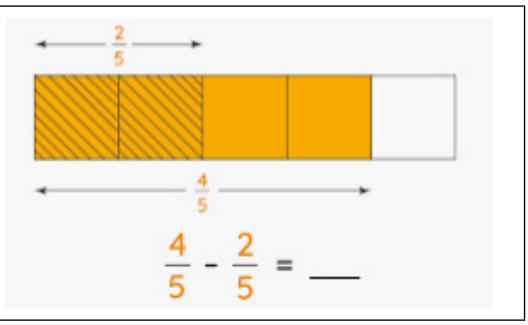
What have you leant in this lesson?

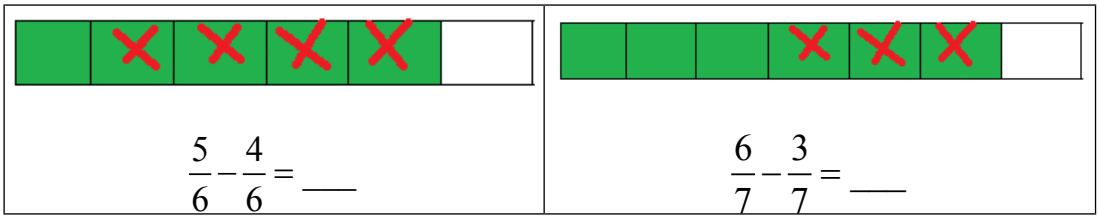
4.6 Subtraction of like fractions

Activity 4.6.1

Subtract fractions







$\frac{5}{6} - \frac{4}{6} = \_\_\_$

$\frac{6}{7} - \frac{3}{7} = \_\_\_$

Activity 4.6.2

Complete these fractions

$\frac{3}{5} - \_\_\_ = \frac{1}{5}$

$\_\_\_ - \frac{3}{8} = \frac{4}{8}$

Activity 4.6.3

Use the given model example to find the difference of these fractions

Example

a) $\frac{8}{10} - \frac{6}{10} =$

$\frac{8}{10} - \frac{6}{10} = \frac{8-6}{10} = \frac{2}{10}$

b) $\frac{8}{9} - \frac{3}{9} =$

$\frac{8}{9} - \frac{3}{9} = \frac{8-3}{9} = \frac{5}{9}$

Try these:

a) $\frac{7}{9} - \frac{4}{9} =$

b) $\frac{8}{9} - \frac{7}{9} =$

c) $\frac{5}{6} - \frac{4}{6} =$

d) $\frac{5}{8} - \frac{4}{8} =$

e) $\frac{4}{5} - \frac{2}{5} =$

f) $\frac{10}{10} - \frac{8}{10} =$

What have you leant in this lesson?

Word problems involving Subtraction of fractions with the common denominator

Activity 4.6.4

Read and subtract:

Gisa has $\frac{3}{4}$ of a cake. Gisa gives $\frac{1}{4}$ of a cake to his cousin, what fraction of cake remained?

Given data	Question	Steps and answer
Fraction of cake : $\frac{3}{4}$ Fraction of cake given to the cousin: : $\frac{1}{4}$	Fraction of remained cake	The fraction of remained cake: $\frac{3}{4}-\frac{1}{4}=\frac{2}{4}$

Let us try these

1. Mutoni has $\frac{9}{10}$ of sugarcane. If she eats $\frac{3}{10}$ of it, what fraction of sugarcane does she remain with?

2. The garden of Karabo has 9 equal parts. If the maize is planted only in $\frac{4}{9}$ of the garden, what fraction of the garden has not the maize?

3. Our teacher had $\frac{9}{10}$ of pieces of chalk in his chalk box. In the first week of the term he used $\frac{3}{10}$ of pieces of chalk. What fraction of the pieces of chalk remained?

Application activity 4.5

a) $\frac{9}{10} - \frac{4}{10} - \frac{3}{10} =$

b) $\frac{8}{8} - \frac{1}{8} - \frac{6}{8} =$

c) $\frac{7}{9} - \frac{2}{9} - \frac{3}{9} =$

d) $\frac{6}{7} - \frac{3}{7} - \frac{2}{7} =$

Work out these

1. We had $\frac{6}{7}$ of the water in the jerrycan at home. In the morning we use now $\frac{3}{7}$ of water. What fraction of water is remaining?

2. Kariza washed $\frac{7}{8}$ of her clothes. If $\frac{5}{8}$ of them dried, what fraction of clothes which did not dry?

What have you leant in this lesson?

4.7 Finding the complement of a fraction to form a unit fraction

Activity 4.7.1

Given fraction	Complement	The whole
 $\frac{3}{4}$	 $\frac{1}{4}$	 $\frac{4}{4}=1$

Then complete the following sentence:

The complement of $\frac{3}{4}$ is ___ because $\frac{3}{4}+\frac{1}{4}=\frac{4}{4}=1whole$.

Activity 4.7.2

To find the complement of $\frac{5}{9}$ we write as follows:

$\frac{5}{9} + \frac{\square}{9} = \frac{9}{9} \rightarrow \frac{9}{9} - \frac{5}{9} = \frac{9-5}{9} = \frac{4}{9}$

Then, complete the sentence:

The complement of $\frac{5}{9}$ is ___ because $\frac{5}{9} + \frac{4}{9} = \frac{9}{9} = 1$ whole.

Activity 4.7.3

Find the complement of each of the following fractions:

a) $\frac{4}{7}$ c) $\frac{3}{5}$ e) $\frac{2}{6}$ g) $\frac{1}{6}$ i) $\frac{2}{10}$ k) $\frac{7}{10}$

b) $\frac{6}{9}$ d) $\frac{5}{8}$ f) $\frac{3}{5}$ h) $\frac{4}{5}$ j) $\frac{2}{3}$ l) $\frac{7}{9}$

Application activity 4.7

Complete to form the correct fraction

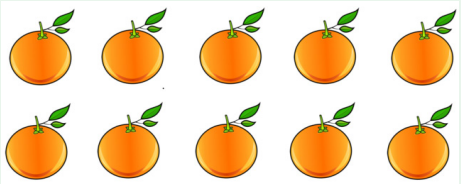
a) $\frac{\square}{7} + \frac{3}{7} = \frac{7}{7}$, b) $\frac{4}{9} + \frac{\square}{9} = \frac{9}{9}$,c) $\frac{6}{8} + \frac{\square}{8} = \frac{8}{8}$,d) $\frac{\square}{10} + \frac{1}{10} = \frac{10}{10}$

What have you leant in this lesson?

4.8 Fraction for a number of real objects

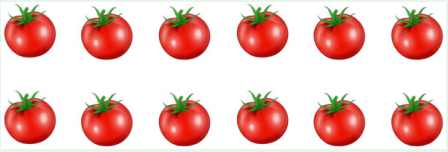
Activity 4.7.3

Example Count and write the requested number



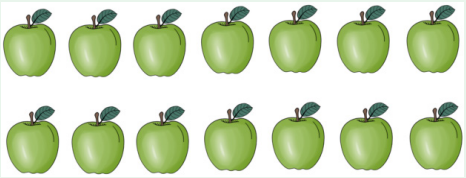
$\frac{1}{2}$ **of 10 oranges: 5 oranges.**

I put all oranges in 2 groups and I count oranges for 1 group.



$\frac{5}{6}$ **of these 12 tomatoes**: --------

I put all tomatoes in 6 groups and count tomatoes for 5 groups.



$\frac{3}{7}$ **of these 14 apples**: ----------

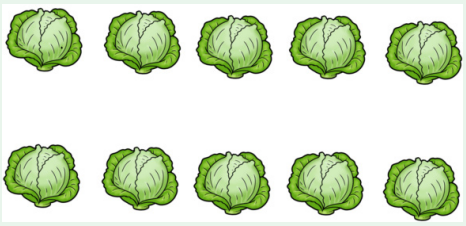
I put all apples in 7 groups and I count apples for 3 groups.

$\frac{7}{8}$ **these 16 jugs**: ----------

I put all jugs in ___ goups and I count jugs for ___groups.

$\frac{5}{9}$ **these 9 pawpaw**: ----------

I put all pawpaw in ___ groups and I count pawpaw for 5 groups.



$\frac{7}{10}$ **these 10 cabbages**: ----------

I put all cabbages in 10 groups and I count the cabbages for 7 groups.

Activity 4.8.2

Find the fraction of a whole number.

Example 1

There are 16 jugs

$\frac{7}{8}$ of 16 jugs : I put jugs in 8 groups. Each group has 2 jugs.

	I count the total number of jugs for 7 groups. I find 14 jugs. Therefore, $\frac{7}{8}$ of 16 jugs make 14 jugs. This is the same as: $\frac{7}{8}$ of 16 = $\frac{7}{8}\times 16 = \frac{7\times 16}{8} = \frac{112}{8} = 112 \div 8 = 14$

Example 2 :

a) $\frac{1}{2}$ of 16 $= \frac{1 \times 16}{2}$

$= \frac{16}{2} = 16 \div 2 = 8$

b) $\frac{2}{3}$ of 9 $= \frac{2 \times 9}{3}$

$\frac{2}{3}$ of 9 $= \frac{18}{3} = 18 \div 3 = 6$

Now try these:

a) $\frac{2}{3}$ of 45 =

b) $\frac{4}{5}$ of 15 =

c) $\frac{3}{7}$ of 14 =

d) $\frac{5}{8}$ of 40 =

e) $\frac{3}{10}$ of 70 =

f) $\frac{4}{7}$ of 35 =

Application activity 4.8

1) Find the fraction of a whole number:

a) $\frac{1}{8}$ of 64 =

b) $\frac{5}{9}$ of 54 =

c) $\frac{7}{10}$ of 50 =

d) $\frac{1}{10}$ of 70 =

e) $\frac{9}{10}$ bya 30 =

f) $\frac{7}{8}$ bya 56 =

2) Use a small stick to match up the questions with the answer. One number can match different fractions

$\frac{1}{2}$ of 230	$\frac{1}{10}$ of 180	$\frac{1}{2}$ of 70	$\frac{1}{5}$ of 40	$\frac{1}{3}$ of 27	$\frac{2}{10}$ of 200	$\frac{2}{3}$ of 27	$\frac{1}{4}$ of 32	$\frac{6}{10}$ of 300
115	18	18	180	8	35	40	9	18

What have you leant in this lesson?

4.9 Word problem involving fraction of a whole number.

Activity 4.9.1

Discuss this worked example:

Example 2 :

Uwase has 40 cows; she needs to sell $\frac{3}{4}$ of them. How many cows can Uwase sell?

Data	Question	Solution
Number of cows = 40Fraction of cows Uwase can sell $= \frac{3}{4}$	Number of cows Uwase can sell = ?	Number of cows she can sell: $\frac{3}{4}$ of 30 = $\frac{3\times 40}{4}$ = 30 cows Uwase can sell 30 cows.

Try these

1. Muhongerwa has 200 bananas, $\frac{3}{4}$ of them are ripe. Find the number of bananas which are ripe.

Ripe bananas

2. There were 120 sacks of cement in the store. If $\frac{5}{8}$ of them have been used when building the house, how many sacks were used?

3. In the hall there are 126 people. If $\frac{2}{3}$ of them have come with a laptop, find the number of people who came with laptops.

Importance of fractions

Activity 4.9.3

Look at each picture: People are sharing objects.

What are those objects?

How can you share objects at home?

Is it better to get equal shares?

Do you prefer to have more than others?

Application activity 4.8

Complete by **True** or **False**

1.

- People can use fractions when sharing things: notebooks, sugar-cane, money, etc. ___
- Fractions can help people to share things equally. _____
- Fractions help people to understand the number of parts to be considered in a whole. ___
- Fractions can help people to distribute equally the tasks. ___

2) In our village there 240 houses. $\frac{5}{6}$ of them are covered with iron sheets. Find the number of houses with iron sheets.

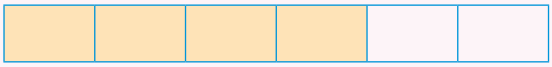
3) In a classroom, there are 45 pupils. If $\frac{2}{3}$ of them are boys, how many boys and girls are there in that classroom?

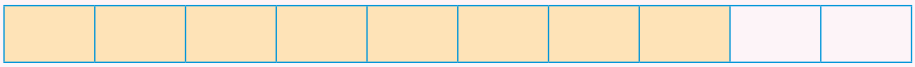
4) In the transportation company there are 84 cars. $\frac{4}{7}$ of the cars operate in the provinces. Find the numbers of cars which operate in the provinces.

What have you leant in this lesson?

End of unit assessment 4

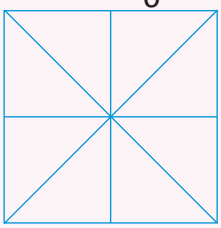
1. Write in words and in figures the fractions represented by the shaded parts

a) 

b) 

2. Draw and shade the following fractions

a) $\frac{5}{8}$ b) $\frac{2}{5}$ c) $\frac{4}{6}$ d) $\frac{3}{7}$ e) $\frac{4}{9}$

3. Shade $\frac{5}{8}$ of this image 

4. Use <, > or = to compare the fractions below:

a) $\frac{5}{7}$ ☐ $\frac{6}{7}$ c) $\frac{5}{9}$ ☐ $\frac{8}{9}$ e) $\frac{1}{5}$ ☐ $\frac{3}{5}$

b) $\frac{4}{6}$ ☐ $\frac{2}{6}$ d) $\frac{3}{4}$ ☐ $\frac{3}{4}$ f) $\frac{1}{8}$ ☐ $\frac{8}{8}$

5. Arrange the following fractions from the smallest to the biggest

a) $\frac{3}{8}, \frac{2}{8}, \frac{7}{8}, \frac{6}{8}, \frac{4}{8}, \frac{1}{8}, \frac{5}{8}, \frac{8}{8}$

b) $\frac{2}{5}, \frac{1}{5}, \frac{3}{5}, \frac{4}{5}, \frac{5}{5}$

6. Arrange the following fractions from the biggtest to the smallest

a) $\frac{3}{7}, \frac{2}{7}, \frac{7}{7}, \frac{6}{7}, \frac{4}{7}, \frac{1}{7}, \frac{5}{7}$

b) $\frac{2}{6}, \frac{1}{6}, \frac{3}{6}, \frac{5}{6}, \frac{4}{6}$

7. Find the complement of each of the following fractions to form a unit fraction.

a) $\frac{4}{7}$ b) $\frac{3}{8}$ c) $\frac{5}{9}$ d) $\frac{4}{10}$

8. Add the following fractions

a) $\frac{3}{7} + \frac{2}{7} =$ b) $\frac{4}{9} + \frac{2}{9} =$ c) $\frac{2}{5} + \frac{1}{5} =$

9. Subtract the following fractions

a) $\frac{8}{9} - \frac{5}{9} =$ b) $\frac{9}{10} - \frac{3}{10} =$ c) $\frac{6}{7} - \frac{4}{7} =$

10. Find the value of each fraction of the given whole numbers:

a) $\frac{3}{4}$ of 100 b) $\frac{7}{8}$ of 64 c) $\frac{5}{6}$ of 60

11. Gwiza ate $\frac{2}{5}$ of her bread in the morning and $\frac{1}{5}$ in the evening. What fraction of bread did she eat altogether?

12. Gatare uses $\frac{5}{7}$ of his water from the tank for making bricks. What fraction of water is remaining in the tank?

13. Friday Shema read $\frac{3}{8}$ of a book. He also read $\frac{4}{8}$ of the book on Saturday. What fraction of the book did he read altogether?

14. There are 96 pupils in a school, $\frac{7}{8}$ of them paid school fees. How many pupils who paid school fees?

UNIT 5

THE RELATIONSHIP BETWEEN LENGTH MEASUREMENTS

5.1 Introductory activity:

Gahire has a big farm of cows.

Gahire goes to borrow money from the bank. The bank manager needs the size of the farm but Gahire doesn't know it.

What does Gahire need to learn so as he may be able to tell the size of his farm?

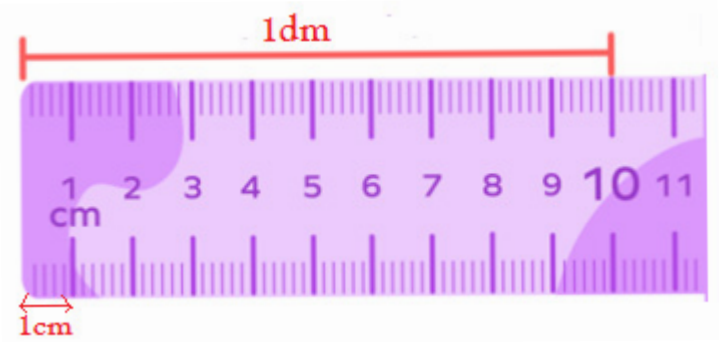
Example: Gahire needs to learn how to measure the length.

5.1. Relationship between length measurements and their conversion

The relationship between length measurements

Activity 5.1.1

Compare the length of 1dm and the length of 1cm on a ruler.



Complete:

1 dm = ___cm

Then, use the **conversion table** of length measurements:

Length measurements greater than meter			Standard unit of length measurements	Length measurements smaller than meter		
km	hm	dam	m	dm	cm	mm
1	0					
	1	0				
		1	0			
			1	0		
				1	0	
					1	0

We see that **1dm = 10cm**. So, if you have 1 dm, write 1 in the cell under dm. Then, **add 0** in the next cell of the table to have the value in cm. **Each cell has to contain one digit only**.

Now, do the same and complete:

a. 1 km = ___ hm b. 1 hm = 10 dam = ___ m

c. 1 dam = ___ m d. 1 m = ___ dm

e. 1 dm = ___ cm..... f. 1 cm = ___ mm

Converting length measurement from the greater unit to the lower unit

Activity 5.1.2

km	*hm*	*dam*	*m*	*dm*	*cm*	*mm*
8	**0**					

Example:

8 km = 8**0** hm. We write 8 under km and we **add 0 under hm**. This means that we multiply 8 by 10 to get 80hm.

To convert a length measurement **from the greater unit to the next lower unit, we multiply by ten.**

Try these:

Complete:

a. 8 km = __hm b. 7 hm = __dam c. 2 hm = ___dam

d. 4 hm = ___m e. 4cm = __mm

Converting length measurements from the lower unit to the greater unit

Activity 5.1.3

Use the conversion table of length measurements to convert.

km	*hm*	*dam*	*m*	*dm*	*cm*	*mm*
1	*0*					
	1	*0*				

Example:

a) 10 hm = 1 km. We write 10 in the table such that the 0 for ones is under hm. Then, we read the number which is made under km.

b) 10 dam = 1 hm. We write 10 in the table such that the 0 for ones is under dam. Then, we read the number which is made under hm.

So, in the table, we delete one zero when we convert from a unit to the next greater unit. To convert a length measurement from a unit to the next greater unit, we divide by ten.

Try these:

Refer to examples and convert:

a) 10 hm = ___ km b) 10 dam = __ hm c) 10 m = __ dam

d) 10 dm =__ m e) 10 cm = __ dm f) 10 mm = __ cm

g) 90 hm = __km h) 800 dam = __km i) 60 dam =__ hm

j) 500 m =__ hm

Application activity 5.7

1) Complete:

a) 450 m = __ dam

b) 13 hm = ___ m

c) 56 dam = ___ dm

d) 3500 mm = ___dm

e) 4300 dm = ___ m

f) 234 dam = ___ m

g) 8 km = ___ m

h) 4 dm = ___ mm

i) 6 m = ___ dm

j) 9 dam = ___ cm

2) Use a small stick to match the length with the answer

1500cm	20m	2km	40mm	5m	6dm	7cm	5000m

2000m	60cm	5km	2dam	500cm	15m	4cm	70mm

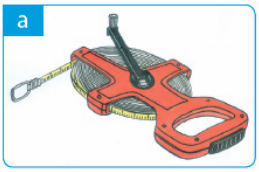
What have you leant in this lesson?

5.2 Measuring the length of objects

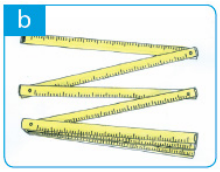
Activity 5.2.1

The tools used to measure the length: There is a decametre tool, a tape measure, a measuring tape for tailors, a folding ruler, or a ruler. What is the name of the following?

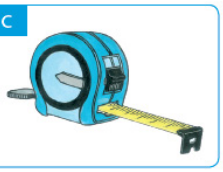
a



b



c



d

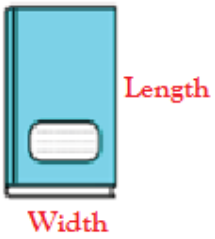
Activity 5.2.2

1) Use a ruler to measure:

a. The length and the width of a mathematics book

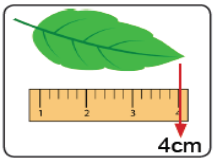
b. The length and the width of a big notebook.

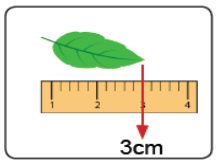
c. The length of a pen.

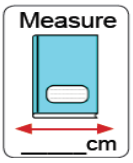


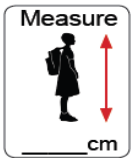
2) Measure the length using a ruler. Complete the missing information

Example: The big leaf is 4cm. The small leaf is **3cm**









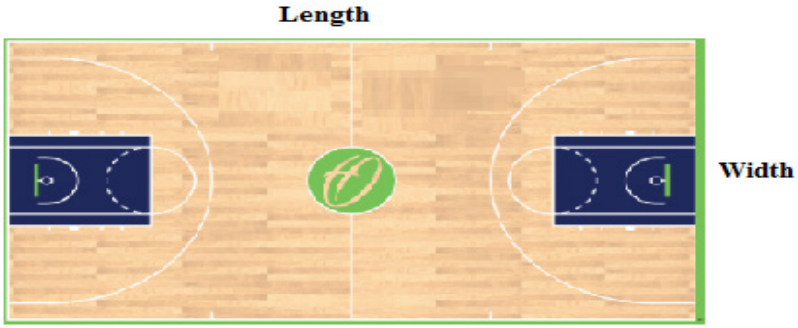
Activity 5.2.3

Use a metre rule to measure:

a. The width of the basketball play ground.

b. The length of the chalk board.

c. The width of the door of the classroom.



Activity 5.2.4

What is the tool that can be used for measuring the length of the following object?

a) A flat b)A dress c A garden d. A cupboard e. School uniforms

Application activity 5.2

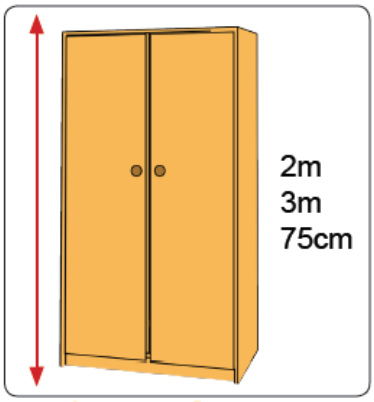
1) Write the right word: **Metre, km, hm, dam, 10, dm, cm, mm, decametre**

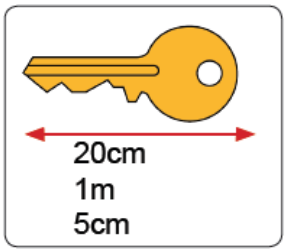
a. ---------- is the standard unit of length measurements

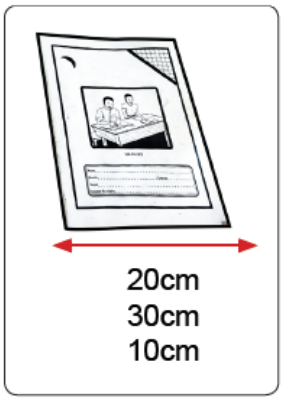
b. Length measurements follow the rule of ----------times

c. We use a ---------- to measure the perimeter of a house.

2) Circle the length that you think is correct.





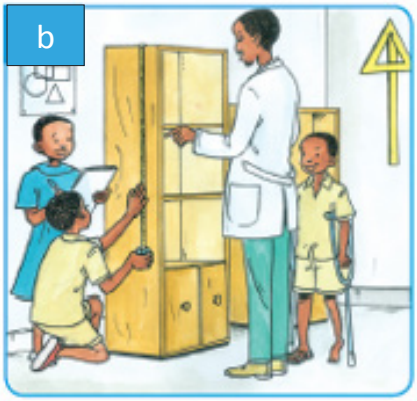


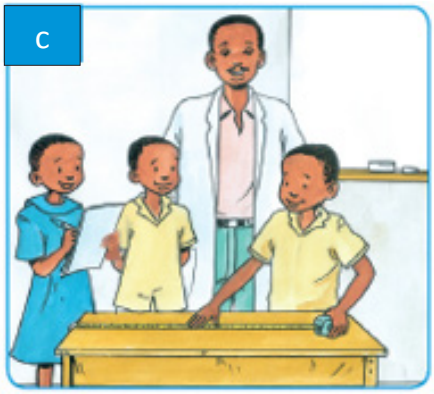
What have you leant in this lesson?

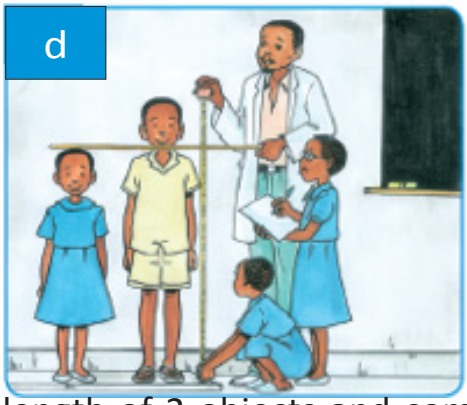
5.3 Comparing length measurements

Activity 5.3.1

Look at each picture. What are people doing? What are they using?







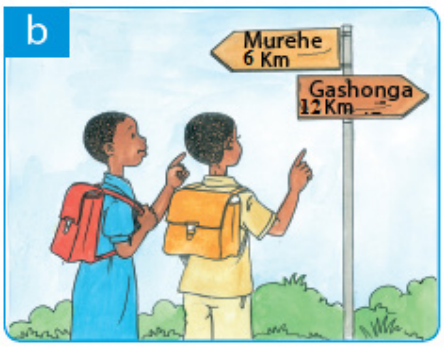
Take a metre rule, measure the length of 2 objects and compare them.

Example:

A pen has 20cm, a table has 1m =100cm. We see that a table is longer than a pen because 100cm > 20cm.

Activity 5.3.2

Observe and describe using "**is longer than"** or "**is shorter than"**.



Example: A pen **is shorter** than a table.

Activity 5.3.3

Use >, < or = to compare the following length measurements

Example: Compare the following

a) 20 dam ☐ 20 hm

First, I convert!

km	hm	dam
	2	0
2	0	0

20 hm = 200 dam
Therefore,
20 dam < 20 hm

b) 450 m ☐ 9 km

First, I convert!

km	hm	dam	m
	4	5	0
9	0	0	0

9 km = 9000 m
Therefore,
450 m < 9 km

c) 7 dm ☐ 58 cm

First, I convert!

dm	cm	mm
7	0	
5	8	

7 dm = 70 cm
Therefore,
7 dm > 58 cm

Now, try these.

a) 234 m ☐ 23 hm
b) 3 km ☐ 300 dam
c) 49 dm ☐ 9 m
d) 87 dam ☐ 8700 dm
e) 256 cm ☐ 25 dm
f) 57 mm ☐ 5 cm

Application activity 5.3

Use >, < or = to compare the following:

a) 3 km ___ 30 hm
b) 4 hm ____ 407 m
c) 575 dm _____ 57 m
d) 49 dam _____ 9 hm

What have you leant in this lesson?

5.4 Ordering length measurements

Ordering the length measurements from the smallest to the biggest

Activity 5.4.1

Arrange the following from the smallest to the biggest.

Example:

5 Km, 700 dam, 57 hm ⟶ 5 km= 500 dam, 700dam, 57 hm = 570 dam.

km	hm	dam	m	dm	cm	mm
5	0	0				
7	0	0				
5	7	0				

In ascending order: 5km, 57hm, 700dam

Now, try these:

a) 125 m, 2 hm, 8 dam

b) 34 cm, 240 mm, 5 dm

Ordering the length measurements from the biggest to the smallest

Activity 5.4.2

Arrange the following from the biggest to the smallest.

Example: 45 hm, 295 dam, 846m ⟶ 45 hm, 295 dam, 846 m

km	hm	dam	m	dm	cm	mm
4	5	0	0			
2	9	5	0			
	8	4	6			

Try these:

a. 785 m, 9 hm, 54 dam

b. 247 m, 79 dam, 76 hm

c. 39 cm, 91 mm, 49 dm

d. 237 dam, 8 km, 56 hm

Application activity 5.4

1) Arrange the following from the smallest to the biggest.

   a. 7 m, 985 mm, 565 cm

   b. 897 dm, 79 m, 9 dam

   c. 324 cm, 765 mm, 8 m

2) Arrange the following from the biggest to the smallest.

   a. 6 km, 9124 m, 698 dam

   b. 74 hm, 9 km, 768 dam

   c. 7 dam, 987 dm, 3695 cm

What have you leant in this lesson?

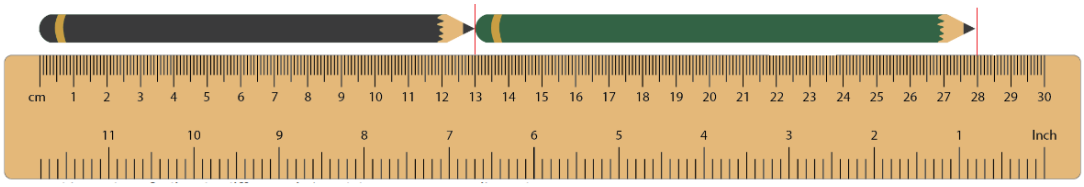
5.5 Addition of length measurements

Activity 5.5.1

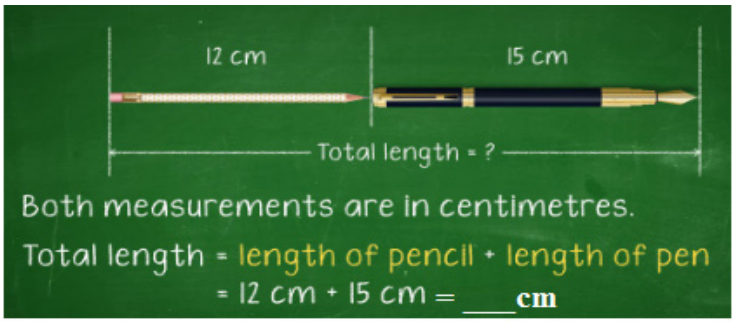
Observe the pencils on the ruler

Complete:

1) 13cm + 15cm =___cm



2) 12cm+15cm= ___cm



Activity 5.5.2

Add length measurements

Example: 8 km + 18 dam = _____ m

km	hm	dam	m	dm	cm	mm
8	0	0	0			
+ ↓	1	8	0			
8	**1**	**8**	**0**			

Then, 8 km + 18 dam = 8180 m

Try these:

a. 9 km + 789 m = ___m

b. 56 hm + 238 m = ___ m

c. 400 dam + 2 500 m = ___hm

d. 5 m + 500 cm = ___dam

e. 300 dm + 20 m = ___dam

f. 35 cm + 9 m = ____ cm

Word problems involving addition of length measurements

Activity 5.5.3

Read and add length measurements:

Muhoza walked 7 km on Monday, 80hm on Tuesday and 400 dam on Wednesday. How many km did she walk altogether?

Given	**Question**	**Solution**
On Monday:7 km On Tuesday: 80hm On Wednesday: 400 dam	Total number of km	Total number of km: 7 km + 80 hm + 400 dam =7km + 8 km + 4km = **19 km**

Try these:

1. A car runs 359 km on Monday and 4 360 hm on Tuesday. How many km does the car run altogether?
2. Mutesi has 175 m of cloth. His brother Gasana has 1250 dm.

How many metres of cloth do they have altogether?

3. Mukiza buys a rope of 150 m in the morning. He buys 2 500 dm in the afternoon. Find the total length of both ropes.

Application activity 5.5

1) Complete:

a) 47 hm + 930 dam = ___ dam

b) 3 m + 25 dm = ___cm

c) 45 m + 5 500 cm = ___cm

d) 145 m + 2 855 m = __ m

e) 74 hm + 260 dam = ____ m

2) The distance from Kigali to Huye is 125km. The distance from Huye to Rusizi is 1600hm. Find the total distance from Kigali to Rusizi in kilometres.

3) The first garden of Kaneza is 95m of the length. The second garden is 105m. Find the total length of both gardens.

What have you leant in this lesson?

5.6 Subtraction of length measurements

Activity 5.6.1

The distance of a rope from A to C is 200 cm.

They cut the part of 50 cm from B to C.

What is the length of the remaining rope?

Activity 5.6.2

Subtract the length measurements.

Example: 425 dam – 3 km = _____ dam

km	hm	dam	m	dm	cm	mm
4	2	5				
– 3	0	0				
1	**2**	**5**				

Then, 425 dam – 3 km = **125** dam

Try these:

a. 5 hm –298 m = _____m b. 9 km –832 dam = ____dam

c. 74 dm –490 cm =____dm d. 75 cm –579 mm = ____mm

e. 753 dam – 69 hm =____ m f. 835 dm –7 dam = _____dm

Word problems involving subtraction of length measurements

Activity 5.6.3

Read and find the answer

Example:

Road workers want to repair a road of 56 km. How many km did they remain with if so far they finished to repair 4600 dam?

Data	Request	Steps and solution
1) Length of the road= 56km 2) Length of repaired road= 4600 dam	Length of the road remained to be covered	Length of the road remained to be covered:56 km – 4600 dam = **10 km**

Now try these:

1) Gisa was running on a distance of 42 km. He became tired after running 2900 dam. How many hectometres were remaining to complete?

2) Kariza buys a piece of cloth with 175 m. If he gives 9 dam of that cloth to his brother Mucyo, What is the length in metres of the remained cloth?

3) The height of Muhizi is 186 cm. The height of Kaneza is 169 cm. Who is taller than the other? What is their difference in cm?

Application activity 5.6

1) Use the conversion table of length measurements. Then fill in the missing value.

a) 5 km –28 hm = ___hm

b) 9 hm –73 dam = _____dam

c) 724cm –62 dm = _____ cm

d) 415 dam – ___ = 1 150 m

e) 64 dam –440 m = _____m

f) 36 m –973 cm =___cm

2) Gisa had 12 dam of a cloth. She uses 20 m of it to make face masks. How many metres did he remain with?

3) Ishimwe and Mugisha played long jump. Ishimwe jumped 3 m while his friend Mugisha jumped 25 dm. Who is good at jumping? What is the difference of their jump in cm ?

What have you leant in this lesson?

5.7 Multiplication of length measurements by a whole number

Activity 5.7.1

There are 4 equal parts of sugarcane. Each one is 25 cm.

25 cm 25 cm 25 cm 25 cm

What is their total length when they are put together?

The total lengh is 25 cm × 4 = _____ cm

Activity 5.7.2

Read and find the answer.

Example: 125 m × 4 = ___m=___ hm

km	*hm*	*dam*	*m*	*dm*	*cm*	*mm*
	1	*2*	*5*			
×			*4* ~~*+2*~~			
	5	*0*	*0* ~~*+1*~~			

Then, 125 m × 4 = **500** m=**5** hm

Now try these:

a. 203 cm × 3 = ___cm

b. 375 m × 2 =____m

c. 5 hm × 2 = ____m

d. 81 m × 5 = _____dm

Word problems involving multiplication of length measurements by a number

Activity 5.7.3

Read and find the answer

Example:

4 shopkeepers sold 25 m of piece of cloth each. What is the total lengh of pieces of cloth in hm did they sell altogether?

Data	Request	Steps and solution
Number of shop keepers: **4** Length of piece of cloth sold by each shopkeeper: **25 m**	Total length of piece of cloth	Total length of piece of cloth: 25 m x 4 = 100 m = 1 hm

Now try these:

1) Find the length of 6 pieces of cloth if each piece measures 50 metres.

2) Shema has 3 rolls of electric wires measuring 30 m each. How many metres of electric wire does he have altogether?

3) Kazuba buys 56 sticks. Each stick measures 2 m. How long are all sticks when they are put on a straight line?

Application activity 5.7

1) Use the conversion table and complete

a) 42 dam × 5 = ____hm b) 72 m × 3 = _____

c) 45 hm × 4 = _____km d) 4 dam × 5 = ____m

e) 4 m × 6 = _____ f) 215 dm × 8 = ____

2) Find the length of a flat of 8 floors if each floor measures 4 m of length?

3) Mahoro has 9 small pieces of thread. Each piece is 100 m. Find the total length of all pieces of thread.

What have you leant in this lesson?

5.8 Dividing length measurement by a number

Activity 5.8.1

Use conversion table of length measurements and the example given to work out the following activities

Example: 820 dam ÷ 5 = 1 64 dam = 1 640 m

```
  164
5)820
 -5
  32
 -30
  020
 -20
   00
```

km	*hm*	*dam*	*m*	*dm*	*cm*	*mm*
1	**6**	**4**	**0**			

Try these:

a) 580 dm÷ 5 = ___dm

b) 2 400 dam÷ 6 = ___ dam

c) 5 400 mm÷ 9 = ___ mm

d) 480 cm÷ 8 = _____ cm

e) 1200 m÷ 3 = ___ m

f) 2000 dm÷ 4 = ___dm

Word problems involving dividing length measurement by a number

Activity 5.8.2

Read and find the answer

Example: 8 tailors shared equally a piece of cloth measuring 96 m. Find the share of each tailor.

Data	Request	Steps and Solution
Number of tailors = 8 Length of shared piece of cloth= 96 m	Length of each share	Length of each share 96 m ÷ 8 = 12 m

Now try these:

1) 6 shopkeepers who sell electric wires shared equally a wire of 240m. Find the length in dam of wire for each shopkeeper.

2) 9 people shared equally a sugar cane of 18 dm. How many cm of sugarcane did each get?

3) Our Sector employed 8 workers for constructing a road of 8 hm. How many hm did each construct?

Application activity 5.8

1) Divide and use the conversion table of length measurements to complete the missing unit

a. 248 hm÷ 8 = ___ 485 dam÷ 5 = _____

b. 2800 m÷ 7 = _____

2) A shopkeeper cuts equally 49m of cloth into 7 small pieces. Find the length of each piece.

What have you leant in this lesson?

End of unit assessment 5

1) Convert the following units into the required unit.

a) 2 km =___ m b) 240 dm =___m

c) 7 m = ___mm d) 2400 dm =___dam

2) Use <, > or = to compare the following.

a) 456 m _____ 8 hm b) 8 km ___ 789 dam

c) 46 mm___ 4 cm d) 7 dam _____79 m

3) Arrange from the lowest to the greatest:

259m, 2 hm, 29 dam

4) Arrange from the greatest to the lowest:

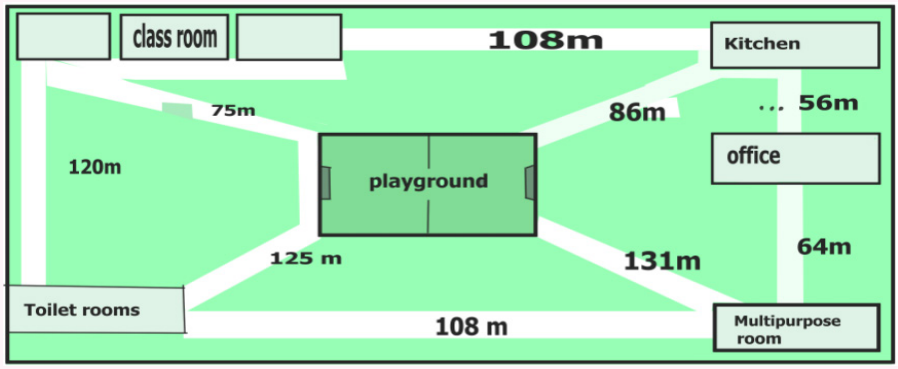
6 km, 608 hm, 68 dam

5) Complete:

a) 75 dam × 4 = ___km b) 590 m÷ 5 = _____dm

c) 4 m × 5 = ___ dm

6) Study the following image and answer the question



Question

a. How many dm are there between the classrooms and the playground?

b. How many dam are there between the classrooms and the toilets?

c. How many m are there between the classrooms and the offices?

d. How many m are there between the classrooms and the kitchen?

e. Kamana ran from the classroom to the kitchen, to the office, to the toilet and to the playground. He returned to the classroom through the same route. How many metres did he cover altogether?

f. During break time Peter runs 500 m six times. How many km does he run in total?

g. Uwase makes a rope of 36m for jumping. She cuts it into 9 equal pieces. Find the length of each piece of rope in cm.

UNIT 6

MASS MEASURMENTS FROM KILOGRAM TO GRAM

6.0 Introductory activity

Sano is a farmer in our Sector.

He wants to sell Irish potatoes.

But Sano does not know to use a balance.

What does Sano need to learn in Mathematics?

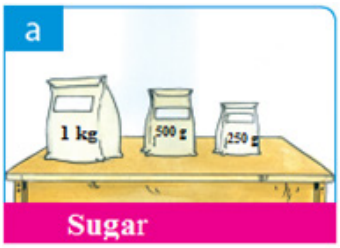
Can you read the mass of the rice on a balance?

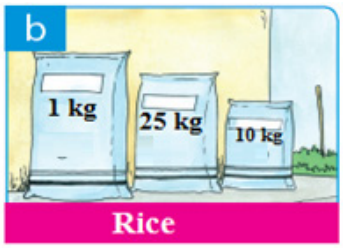
6.1 Mass measurements

Activity 6.1.1

What do you see?

When you lift each object, which one is **heavy?**



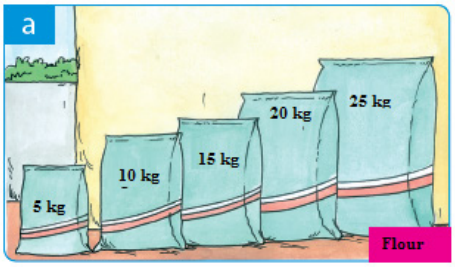


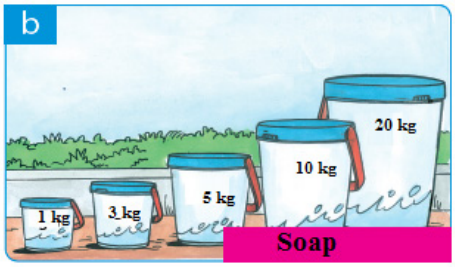
Activity 6.1.2

Look at the pictures. What are people doing?

Activity 6.1.3

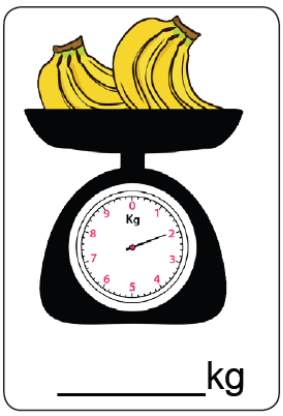
Read and write the mass of the objects from the pictures

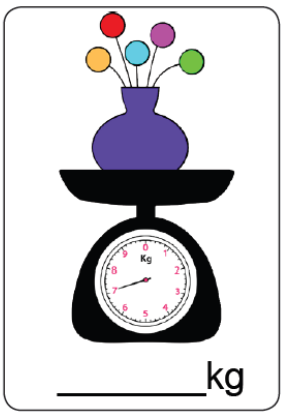


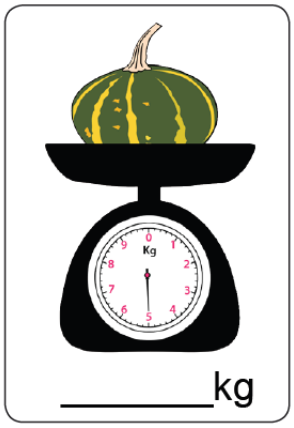


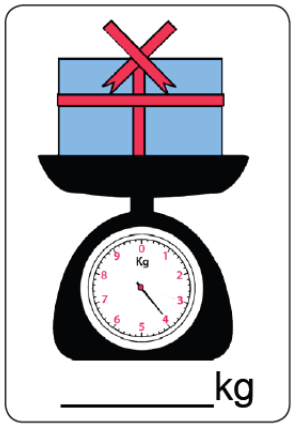
Activity 6.1.4

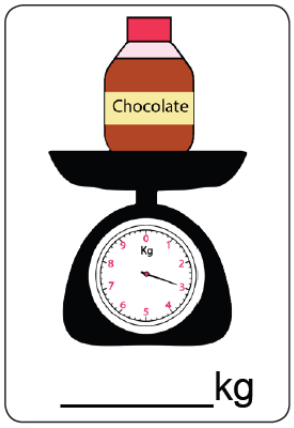
Weigh and read the mass of objects on the balance:











Application activity 6.1

Match the picture to the correct mass. Read your answer.

Example: An elephant weighs 6000kg.

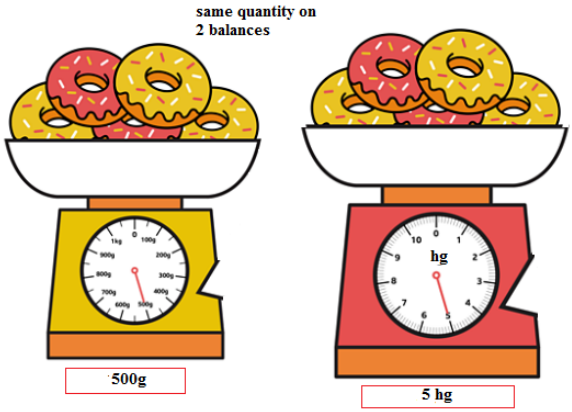
What have you leant in this lesson?

6.2 Relationship between mass measurements and their conversion

Activity 6.2.1

Does the same quantity have the same mass on different balances?

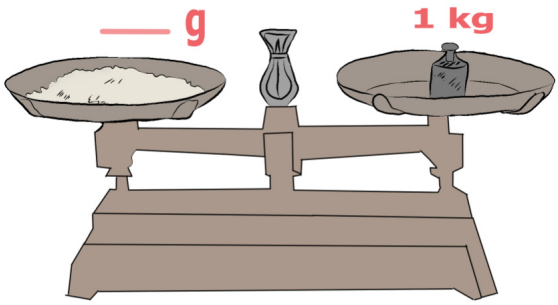
Is 500g heavier than 5hg?



Then, complete by: >, < or = 5hg _____500g

Activity 6.2.2

1) Look at the balance. How many grams are there?



Then complete: 1kg = _____g.

2) Look at the conversion table of mass measurements and compare them

kg	*hg*	*dag*	*g*
1	0		
	1	0	
		1	0
		1	0
	1	0	0
1	0	0	0

When I convert mass unit from the biggest to the smallest unit, I write zero on the right for small unit.

When I convert mass unit from smallest to biggest, I remove zero from the right side of this unit.

1kg =10hg; 1hg =10 dag; 1dag =10g; 1hg =100g ; 1kg = 1000g.

It means that when we convert the mass measurements;

- From the big unit to the next smaller unit, we multiply by 10.
- From the small unit to the next bigger unit, we divide by 10.

Activity 6.2.2

Read and match the abreviations of mass units

kg	Hectogram
hg	Gram
dag	Kilogram
g	Decagram

2) Answer by **true** or **false**

a. It is good to buy objects for which the mass is not measured. _____

b. A Kilogram (kg) is the standard unit of mass measurements. _____

Activity 6.2.4

Use the conversion table to do the following activities

kg	**hg**	**dag**	**g**
5	0	0	
1	2		
	4	3	
	4		

Complete and read the answer:

a) 5 kg = 500 dag

b) 12 hg = _____ dag

c) 43 dag = ___ g

d) 4 hg =___ g

Application activity 6.2

1) Match the same masses

490 dag | 3 kg | 80 dag | 200 dag | 60 kg | 400 g | 9 kg | 270 g

3000 g | 800 g | 40 dag | 2 kg | 9000 g | 4900 g | 6000 dag | 27 dag

2) Fill in the missing number

Example: 490dag = 4900g.

a) 145 dag = ___g

b) 9 kg =___ g

c) 7800 g =____ hg

d) 600 dag =___ kg

e) 7 hg =____ g

f) 4 kg = ___g

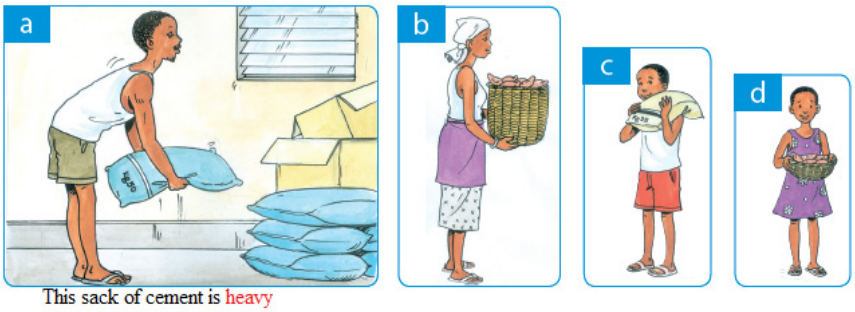
What have you leant in this lesson?

6.3 Comparing mass measurements

Comparing mass measurements by lifting

Activity 6.3.1

Lift and say if it is **heavy** or **light**.

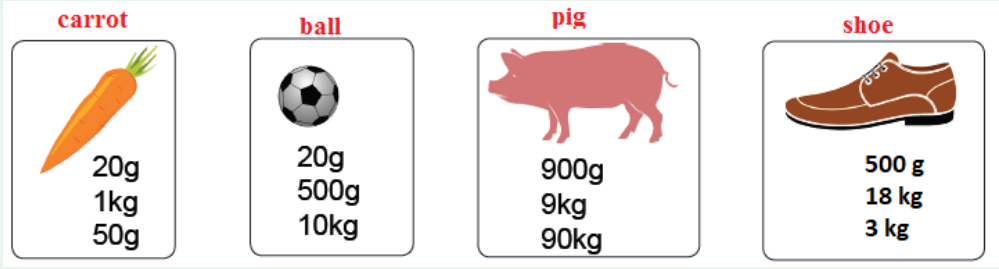


This sack of cement is heavy

Activity 6.3.2

Estimate the correct mass of the object.

Example: The carrot is about 50g.



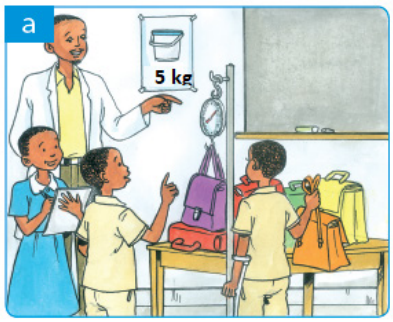
Comparison of mass measurements by weighing on a balance

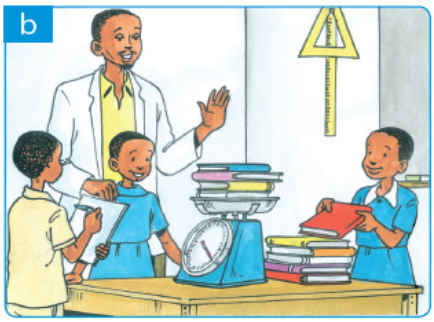
Activity 6.3.3

Use a balance to weigh objects and compare their masses.

Example: My bag is 2kg. Your bag is 3kg.

As a mass of 3kg **is greater** than 2kg, your bag **is heavier** than mine.





Activity 6.3.4

Convert all given masses into the given smallest unit. Then,use **<, >** or **=** to compare them

a. 2 kg _____ 200 dag

b. 60 hg _____ 670 dag

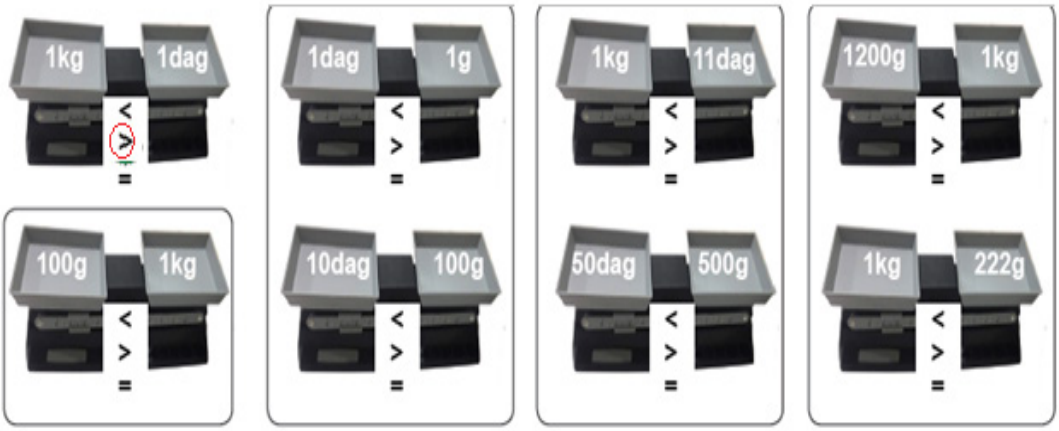
c. 800 dag _____ 81 kg

Application activity 6.3

1) Circle the correct comparison sign: **<, >** or **=**

Example:

Try these:



2) Convert all given masses into the smallest unit and then compare them using **<, >** or **=**

a) 908 g _____ 9 hg

b) 5 kg _____ 75 hg

c) 135 dag _____12 hg

What have you leant in this lesson?

6.4 Arranging objects according to their mass

6.4.1 Ordering mass measurements from the smallest to the biggest

Activity 6.4.1

Arrange mass measurements from the smallest to the biggest.

Example

9 kg, 895 dag, 79hg **becomes**
79 hg, 895 dag, 9 kg

kg	hg	dag	g
9	0	0	
8	9	5	
7	9	0	

The smallest unit is dag. I convert all measurements in dag; Then, I compare the results.

The answer is:

790dag, 895dag, 900dag.
That is: 79hg, 895dag, 9kg.

Then, write these sentences in A in the correct order in B:

A	B
- Convert all measurements in the smallest unit. - Find the smallest unit. - Compare the values obtained.	1) ___ 2) ___ 3) ____

Activity 6.4.2

Arrange mass measurements from the smallest to the largest

a) 45 dag, 79 hg, 530 g

b) 52 hg, 549 dag, 9 kg

c) 79 dag, 310 g, 48 hg

d) 76 hg, 4 kg, 576 dag

e) 345 dag, 8 kg, 56 hg

f) 271 g, 54 dag, 9 kg

6.4.2 Ordering mass measurements from the biggest to the smallest.

Activity 6.4.3

Arrange the given mass measurements from the biggest to the smallest

Example: 789 dag, 85 hg, 497g → 85 hg, 789 dag, 497 g

kg	hg	dag	g
7	8	9	
8	5	0	
4	9	7	

Try these:

a) 791 g, 7 kg, 65hg

b) 24 dag, 869 g, 4kg

c) 153 dag, 68 hg, 9kg

d) 64 dag, 5 kg, 245hg

Application activity 6.4

1) Arrange the following masses from the smallest to the biggest

a) 54 dag, 184 g, 6 hg

b) 27 hg, 45 dag, 9 kg

c) 87 dag, 58 g, 7 hg

d) 96 dag, 97 g, 6 kg

2) Arrange the following masses from the biggest to the smallest

a) 897 g, 57 hg, 5 kg

b) 29 dag, 18 hg, 47 g

6.5 Addition of mass measurements from kg up to g

Activity 6.5.1

Use the conversion table and example below to answer the given exercises

Example: 4 kg + 25 hg = ___ dag.

kg	hg	dag	g
4	0	0	
+ 2	5	0	
6	5	0	

Then, 4 kg+25 hg= 650 dag

Try these:

a) 100 dag + 70 hg = ___ kg

b) 50 hg + 400 dag =___ kg

c) 80 dag + 7 00g =___ hg

d) 7 kg + 3 hg =___ dag

Word problems involving addition of mass measurements from kg up to g

Activity 6.5.2

Read and find the answer

Example:

Baho, Gaju, Teta and Gisa used a balance and recorded the following weight.

Baho : 36 kg Gaju: 33 kg Teta: 35 kg Gisa : 34 kg

Find their total weight. Their total weight is:
36kg+33kg+35kg+34kg =138kg.

Try these

1. Masabo buys 56 kg of sorghum flour and 195 kg of wheat. If he mixes them, how many kg of mixture of flour does he get?
2. Butera has 987kg of coffee. His fried brings him 9100dag of coffee. What is the total number of kg of coffee does Butera have?

Application activity 6.5

1) Use conversion table of mass measurements to complete the missing units

a) 52 g + 75 dag = ___g

b) 78 dag + 220 g = ___g

c) 6 kg + 24 dag = ___dag

2) A trader buys 1000 hg of beans and 50 kg of sugar.

Find the mass in kg of all products the trader buys.

3) Nganji goes to the shop and buys 5 000g of salt and 10 hg of meat. Find the total mass in kg of all the products.

What have you leant in this lesson?

6.6 Subtraction of mass measurements from kg up to g

Activity 6.6.1

Use the conversion table and the example given to answer the following:

Example: 425 dag –3 kg = _____dag

kg	hg	dag	g
4	2	5	
– 3	0	0	
1	**2**	**5**	

Then, 425 dag-3kg=125 dag

Try these

a) 321 g –27 dag =_____g

b) 756 dag –5 kg =_____dag

c) 98 hg –95 dag =_____g

Word problems involving subtraction of mass measurements

Activity 6.6.2

Read and find the answer

Example:

When I was in Primary two, my weight was 32kg. How many hg have I added on if I am now weighing 390 hg i primary three?

Data	Request	Steps and solution
My weight in primary two = 32kg My weight in primary three = 390 hg	Difference of weight = ?	Difference of weight is 390 hg - 32kg = **70 hg**

Now, try these:

1. Manzi bought 65 kg of sugar. How many kg can he remain with if he gives 390hg of it to her sister Annet?

2. My family bought 50 kg of rice and gave 1200dag of it to our neighbors. How many kg of rice did my family remain with?

Application activity 6.6

1) Subtract and complete the missing number

a) 7 kg – 2800 g = ___ hg

b) 498 dag –39 hg = ___g

c) 970 g – 8 hg = ___dag

2) Kayitare needs to keep 800hg of sugar at home. He has 5000dag of sugar. How much more sugar in kg will Kayitare find?

3) Usanase bought 100kg of sorghum. She used 4500 dag in the evening. How many kg did she remain with?

What have you leant in this lesson?

6.7 Multiplication of mass measurements by a number

Activity 6.7.1

Multiply the mass of objects

Example:

There are 6 men. Every man carries 8 kg of maize flour. What is the total weight of maize flour in hg for all 6 men?

8kg × 6 = 48 **kg = 480hg**

Try these:

a) 275 dag × 2 = ----hg

b) 125 g × 8 =------ kg

c) 225 g × 4 = ------hg

d) 184 g × 5 =----- dag

e) 145 dag × 6 =-----

Word problems involving multiplication of mass measurements

Activity 6.7.2

Worked Example:

Nziza bought 8 boxes of soap. Each box weighs 25kg. Find the weight of all boxes in kg.  	**Given:** Number of boxes = 8. Weight of each box = 25kg **Question:** Total weight in kg = ? **Solution:** Total eight =25 kg x 8= **200kg**

Now try these:

1. A packet of salt weighs 500 g. Find the weight of 9 similar packets.
2. My family consumes 500g of rice every day. How many kg of rice do we consume in 8 days?

Application activity 6.7

1) Multiply and convert

a) 145 dag × 6 = ----- hg

b) 34 dag × 7 = ------- g

c) 45 dag × 6 = ------- hg

d) 138 g × 5 =-------- dag

2) Mugabo bought 8 packets of flour. How many kg of flour did he buy if each packet weighs 5kg?

3) A sugar factory makes 2750 kg of sugar every day. How many kg does it make in two days?

4) Muhizi has 9 sacks of rice weighing 100 kg each. How many kg of rice does he have altogether?

What have you leant in this lesson?

6.8 Dividing mass measurements by a number

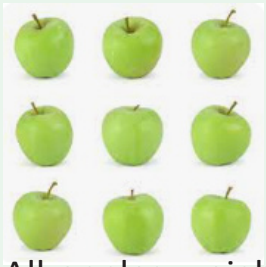
Activity 6.8.1

Look at the following example. Do the next activities.

Example 1:

There are 90g of apples. Share them equally to 3 children.

What is the mass of apples for each child?



All apples weigh 90g.

First child *second child* *third child.*

Given: mass of all apples is 90g. There are 3 children.

Question: The mass of apples for each child=?

Answer: The mass for apples of each child = **90g ÷ 3 = 30g**

Example 2: 965 dag ÷ 5 =------dag------g

$$
\begin{array}{r|l}
 & 193 \\
\hline
5 & 965 \\
 & -5 \\
 & \hline
 & 46 \\
 & -45 \\
 & \hline
 & 15 \\
 & -15 \\
 & \hline
 & 00
\end{array}
$$

kg	hg	dag	g
1	9	3	0

965 dag ÷ 5 = 193 dag = 1930 g

Now, try these:

a) 840 hg÷ 4 = ___hg =___ kg b) 660 dag÷ 6 = ___hg

c) 620 g÷ 2 =___ dag d) 550 dag÷ 5 =___ g

Word problems involving division of mass measurements by number

Activity 6.8.2

Example:

A shopkeeper bought 100kg of rice and shared it equally into 4 small sacks.

Find the weight of each small sack.

Given: Quantity of rice = 100kg. Number of sacks = 4

Question: Weight of each sack =?

Answer: Weight of each sack =100 kg ÷ 4 = **25 kg**

Now, Try these:

1) 8 people bought 200 kg of sugar and shared them equally.
What is the mass of the share of each person?

2) Share equally 9600 dag of irish potatoes among 8 farmers.

3) If we put 9750g of beans into 5 equal packets. Find the weight of each packet in dag.

Application activity 6.8

1) Divide:

a) 2000 dag ÷ 5 = __ b) 1477 g ÷ 7 = ___ c) 2080 g ÷ 8 =____

2) Share 840 g of fertilizer equally on 7 mango trees.

3) Share equally 4000 hg of rice to 5 families. What is the mass of the share for each family?

4) If 4 200dag of rice are equally shared to 6 people. What is the mass of rice for each person?

What have you leant in this lesson?

End of unit assessment 6

1) Complete:

a) 8 kg = ___ dag b) 56 dag = ___ g

d) 7 800 g = _____ hg c) 6 kg = ___g

2) Use <, > or = to compare mass measurements

a) 74 hg _____745 dag b) 798 g _____798 dag

3) Arrange from the smallest to the biggest:

48 hg, 487 g, 487 dag

4) Arrange from the biggest to the smallest:

a) 65 hg, 56 dag , 6 kg . b) 75 hg, 5 kg, 657 dag.

5) Workout the following:

a) 78 hg + 2200 g =___ kg b) 245 dag + 6 550 g = ___hg

c) 80 dag –7 hg = ___ dag

6) Read and find the answer:

a. Mugabe buys 750 hg of beans on Monday and 6500 dag on Wednesday. How many kg does he buy altogether?

b. Ineza buys 7 packets of sugar. Each packet weighs 5 kg. How many hg does he buy altogether?

c. At the end of the year, a group of 4 people shared equally 1000hg of rice among its members. How many kg did each member get?

d. Rwasa took 857 dag of beans to the market. How many kg remained if he sold 6570g?

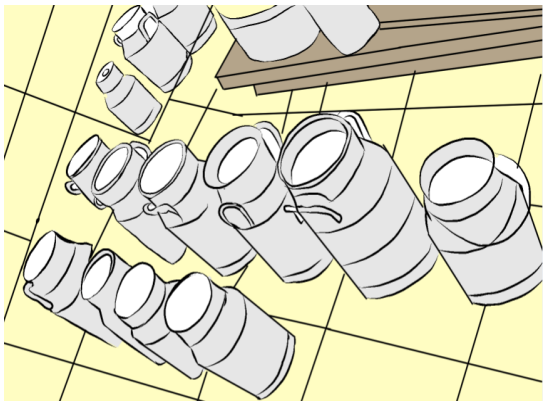
UNIT 7

CAPACITY MEASURMENTS FROM LITER(L) TO MILILITER

7.0 Introductory activity

Mutuzo delivers 15 milk containers to the milk collection center per day.Each milk container holds 20 litres. After two days, Mutuzo is not able to count the quantity of the milk he delivered.

What does Mutuzo need to learn in mathematics?



7.1 Capacity measurements from litre (ℓ) to millilitre (mℓ)

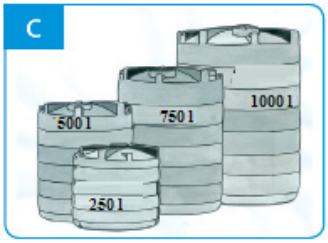
Activity 7.1.1

Tell what you see on the picture

a

b

c



Activity 7.1.2

Use a bottle of 500 millilitres to measure and write the capacity of the following containers:

a. A bucket of 10 litres

b. A jerrycan of 20 litres

Application activity 7.1

Use a small jerrycan of 5 litres to measure and write the capacity of the following containers:

a) A big jerry can is filled by 4 small jerry cans.

b) A drum of 20 big jerrycans is filled by ____ small jerry cans.

7.2 Relationship of capacity measurements from litre (ℓ) up to millilitre (mℓ) and their conversion

Activity 7.2

Look at the conversion table of capacity:

a. Read each capacity unit

b. Write the capacity unit

Standard unit of capacity measurements	**Capacity measurements which are less than a litre**		
Litre (ℓ)	Decilitre(*d*ℓ)	Centilitre (*c*ℓ)	Millilitre (*m*ℓ)

Complete:

a) 1 ℓ =___ *d*ℓ b) 1 *d*ℓ = ___ *c*ℓ

C) 1 *c*ℓ =___ *m*ℓ d) 1 ℓ =___ *c*ℓ.

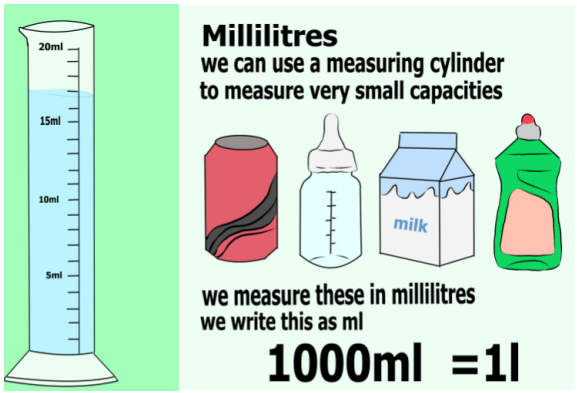
Converting capacity measurements from a unit to the next smaller unit

Activity 7.2.2

Use the conversation table to do the following activity

Standard unit of capacity measurements	**Capacity measurements which are less than a litre.**		
Litre (ℓ)	**Decilitre (dℓ)**	**Centilitre (cℓ)**	**Millilitre (mℓ)**
1	**0**		

1	0	0	
1	0	0	0
	1	0	
	1	0	0
		1	0



We see that when converting capacity measurements from a unit to the next smaller unit, we multiply by 10.

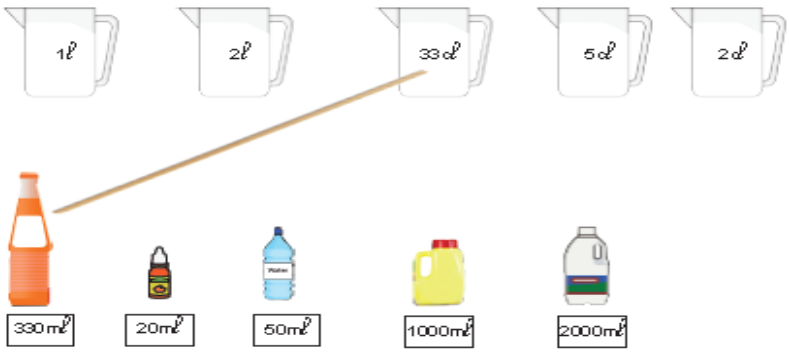
Example: 1ℓ= **10** dℓ

Try these:

1) a) 1 ℓ =__ *d*ℓ b) 1 ℓ =___ *c*ℓ c) 1 ℓ =__ *m*ℓ

d)1 *d*ℓ =___ *c*ℓ e) 1 *d*ℓ =__ *m*ℓ

2) Match the measuring jug to the containers that filled them



Converting capacity measurements from a unit to the next bigger unit

Activity 7.3

Use the conversion table to do the following activity

Standard unit of capacity measurements	**Capacity measurements which are less than a litre.** 		
Litre (ℓ)	Decilitre (*d*ℓ)	Centilitre (*c*ℓ)	Millilitre (*m*ℓ)
1	0		
1	0	0	
1	0	0	0
	1	0	
	1	0	0
		1	0

We see that

a) 10 dℓ = 1 ℓ

b) 100c ℓ = 1 ℓ

c) 1000 mℓ =1

d) 10 cℓ = 1 dℓ

e) 100 mℓ = 1 dℓ

f) 10 mℓ = 1 cℓ

Therefore, when converting capacity measurements from a unit to the next bigger unit, we divide by 10.

Try these

a) 90 *m*ℓ =___ *c*ℓ

b) 800 *d*ℓ =___ ℓ

c) 7000 *m*ℓ =___ ℓ

d) 60 *d*ℓ =___ ℓ

e) 500 *m*ℓ =___ *d*ℓ

f) 400 *d*ℓ =___ ℓ

Application activity 7.2

1) Use the conversion table to do the following activity

a) 8 ℓ = ___ dℓ b) 7 dℓ = ___cℓ d) 92 ℓ = ___ dℓ

c) 5 cℓ = ___ mℓ e) 94 dℓ =___ cℓ f) 39 cℓ =___ *mℓ*

2) Convert these measurements of capacity

a) 400 cℓ =___ℓ b) 130 dℓ =___ℓ c) 56 dℓ =___ mℓ

d) 3500 mℓ =___ cℓ e) 4 dℓ =___ mℓ f) 2 ℓ =___ *mℓ*

3. Which capacity unit is used when measuring the following:

The capacity of medicine given to children

The capacity of a jerrycan of water

What have you leant in this lesson?

7.3 Comparing capacity measurements from litre (ℓ) up to millilitre (mℓ)

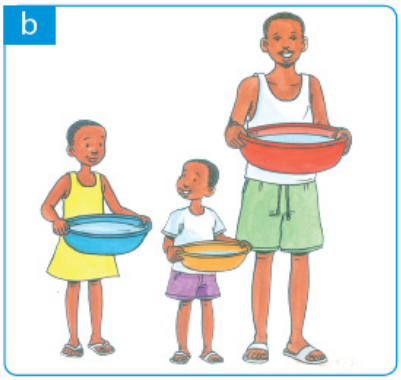
Comparing capacity measurements from litre (*ℓ*) up to millilitre (*mℓ*) by lifting containers

Activity 7.3.1

Tell what you see in pictures. What is the container that can hold too much whater than others?

a

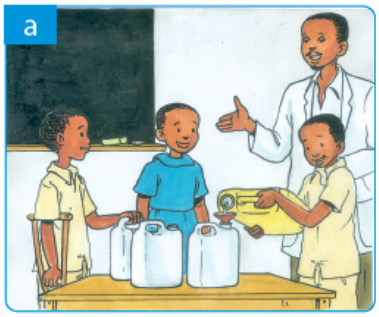
b

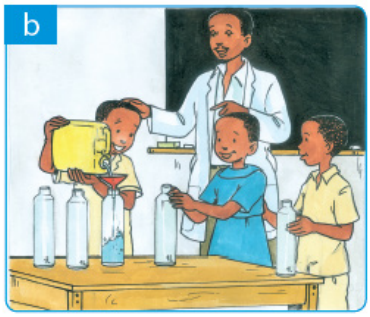


Comparing capacity measurements by measuring the capacity of containers

Activity 7.3.2

Tell what you have in the pictures.





Now try these

Use a jug of one litre (1 ℓ) and a bucket of water, measure, record and compare the capacity of the following containers:

- The number of jugs of one litre (1 ℓ) that can fill a small bucket
- The number of jugs of one litre (1 ℓ) that can fill a small jerrycan
- The number of jugs of one litre (1 ℓ) that can fill a small basin
    a. Which container can hold little water?
    b. Which container can hold much water?

Comparing capacity measurements from litre up to millilitre using comparison symbols

Activity 7.3.1

Use the conversion table to convert into the smallest measurements then use <, > or = to compare them.

a) 807*cℓ* _____25*dℓ* b) 67*dℓ* _____ 670*cℓ*

c) 98*dℓ* _____ 9 *ℓ* d) 900 *mℓ* _____ 9 *dℓ*

e) 457 *mℓ* _____445 *dℓ* f) 593 *cℓ* _____ 94 *dℓ*

Application activity 7.3

Use >, < or = to compare the following units

a) 8 549 mℓ _____ 85 dℓ b) 96 dℓ _____ 960 cℓ

c) 307 mℓ _____ 9 ℓ d) 987 cℓ _____ 9 l 7 cℓ

e) 890 mℓ _____ 8 9 cℓ f) 128 dℓ _____ 129 cℓ

7.4 Ordering capacity measurements from litre (ℓ) up to millilitre (mℓ)

7.4.1 Ordering capacity measurements from the smallest to the biggest

Activity 7.4.1

Look at example and do the next activities

Example:

Arrange the following capacity measurements from the smallest to the biggest 690 *cℓ*, 89 *dℓ*, 465 *cℓ*.

First I change the data in the smallest given unit of capacity , and then arrange the data in a given order

ℓ	*dℓ*	*cℓ*	*mℓ*
6	9	0	
8	9	0	
4	6	5	

690 *cℓ*, 89 *dℓ*, 465 *cℓ* in ascending order are 465 *cℓ*, 690 *cℓ*, 89 *dℓ*.

Try these.

Arrange the following measurements of capacity from the smallest to the biggest

a) 597 *mℓ*, 9 ℓ , 9 dℓ b) 792 cℓ, 67 dℓ, 9 mℓ

c) 3 cℓ, 89 dℓ, 57cℓ d) 5 ℓ, 9 *dℓ*, 8 *cℓ*.

7.4.2 Ordering capacity measurements from the biggest to smallest

Activity 7.4.2

Look at the example and arrange the measurements of capacity in descending order

Example: 7 *mℓ*, 408 *cℓ* , 94 *cl.*

First I change the data in the smallest given unit of capacity , and then arrange the data in a given order

ℓ	*dℓ*	*cℓ*	*mℓ*
			7
4	0	8	0
	9	4	0

7 mℓ, 408 cℓ, 94 cl in descending order are 408 cℓ, 94 cℓ ,7 mℓ

Try these.

Arrange the following capacity measurements from the biggest to the smallest

a) 9 ℓ, 21 dℓ, 935 mℓ

b) 5 dℓ, 354 mℓ, 95 cℓ

c) 2 ℓ, 74 cℓ, 64 dℓ

d) 78 dℓ , 4 ℓ , 987 *mℓ.*

Application activity 7.4

1) Arrange the following capacity measurements from the smallest to the biggest

a) 95 dℓ, 849 cℓ, 697 mℓ

b) 279 mℓ, 96 dℓ, 897 cℓ

c) 87 dℓ, 549 cℓ, 879 mℓ

d) 67 *dℓ*, 748 *cℓ*, 647 *mℓ.*

2) Arrange the following capacity measurements from the biggest to the smallest

a) 48 *cℓ*, 95 dℓ , 975 mℓ

b) 49 dℓ, 8 ℓ, 875 cℓ

c) 958 mℓ, 86 dℓ, 7 ℓ

d) 98 *dℓ*, 971*cℓ*, 624 *mℓ.*

What have you leant in this lesson?

7.5 Addition of capacity measurements from litre (ℓ) up to millilitre (mℓ)

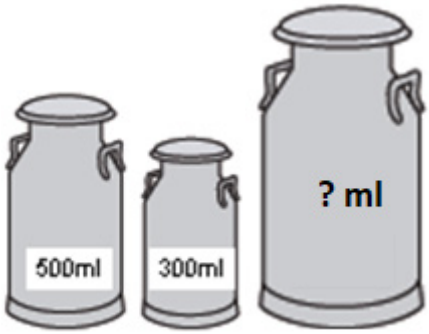
Activity 7.5.1

Look at the 2 small containers of milk: 500*m*ℓ and 300 *m*ℓ.

The milk is put together in a big empty container. Complete:

The total quantity of milk is

500 *m*ℓ +300 *m*ℓ = ___



Activity 7.5.2

Use the conversion table of measurements of capacity and the example to do the following exercises.

Example: 8 005 *m*ℓ + 19 *d*ℓ =____ *m*ℓ

Add these measurements of capacity

First, I convert in the given smallest measurement of capacity, and then add.

ℓ	*d*ℓ	*c*ℓ	*m*ℓ
8	0	0	5
+ 1	9	0	0
9	9	0	5

Then, 8 005 *m*ℓ + 19 *d*ℓ =8 005 *m*ℓ + 1 900 *m*ℓ = 9 905 *m*ℓ

Try these:

Work out the following units of capacity

a) 495 dℓ + 405 cℓ =___ cℓ b) 87 cℓ + 530 mℓ = ___mℓ

c) 69 dℓ + 1 mℓ = ___ mℓ d) 970 *m*ℓ+ 83 *c*ℓ = ___*m*ℓ

Word problems involving addition of capacity measurements from litre (ℓ) up to millilitre (*m*ℓ)

Activity 7.5.3

Follow this worked example and do the next activities.

Muhizi bought 1 ℓ of passion juice, 500 *c*ℓ of pineapple juice, 10 *d*ℓ of orange juice and 100 *c*ℓ of water. How many litres of juice did he get after mixing all juice and water?

Data	Question	Solution
1 ℓ of passion juice 500 *c*ℓ of pineapple juice 10 *d*ℓ of orange juice 100 *c*ℓ of water	Number of litres of juice	Number of litres of juice 1 ℓ + 500 *c*ℓ + 10 *d*ℓ + 100 *c*ℓ= 1 ℓ +5 ℓ +1 ℓ +1 ℓ =8 ℓ

Then, the number of litres of juice is 8 ℓ.

Try these.

1. At home we milk 42 ℓ of milk in the morning and 4800 cℓ in the evening. How many litres of milk do we get per day?
2. Butera sold 450 dℓ of cooking oil on Monday and 5 500 cℓ in the evening. How many litres of cooking oil did he sell altogether?
3. Uwera uses 75 ℓ of water watering vegetables in the morning and 550 dℓ in the evening. How much water does she use every day?

Activity 7.5

1) Use conversion table of capacity measurements then complete the missing units

a) 6 ℓ+ 7 dℓ= ___ dℓ

b) 77 cℓ + 30 mℓ= ____ mℓ

c) 80 cℓ + 32 dℓ = ____ cℓ

d) 36 dℓ + 40 cℓ = ____ cℓ

2) During the weekend Gatoni used 20ℓ when washing her school uniform. Her sister Mutoni used 400 *d*ℓ. How much water did they use altogether?

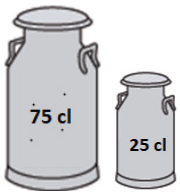
3) A petrol station sold 658 ℓ of fuel on Friday and 2 320 *dℓ* on Saturday. How many litres of fuel did it sell in two days?

What have you leant in this lesson?

7.6 Subtraction of capacity measurements from litre (ℓ) up to millilitre (mℓ)

Activity 7.6.1

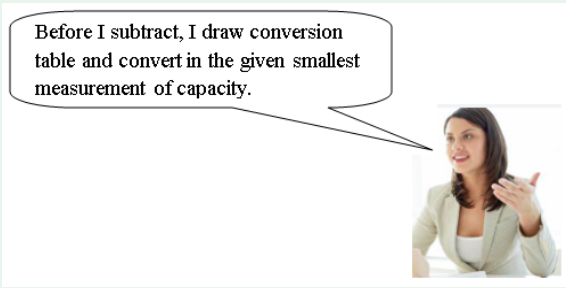
From full milk container of 75 *cℓ*, I take away 25 *cℓ*. How many *cl* remaining in this big container?



Activity 7.6.2

Use the example to do the following activities

Example: 789 *cℓ* – 709*cℓ* = ___ *cℓ*= ___*dℓ*



ℓ	*dℓ*	*cℓ*
7	8	9
- 7	0	9
0	8	0

Then, 789 *cℓ* – 7 0 9 *cℓ*= =80 *cℓ*= 8 *dℓ*.

Try these.

a) 89 dℓ –795 cℓ =___ mℓ

b) 37 ℓ –295 dℓ = ___cl

c) 98 dℓ – 7 cℓ 80 =___dℓ

d) 7 ℓ –58 dℓ =1200___

e) 72 dℓ – 579 cℓ= 141__

Word problems involving subtraction of capacity measurements from (ℓ) up to millilitre (mℓ)

Example:

Look at the example and do the next activities

Uwera has 100 cl of juice. She gave 3 dl to her friend Bugingo. How much cl of juice did he remain with?

Data	Question	Solution
Uwera's juice = 100 *cℓ* Capacity of juice given to Bugingo = 3 *dℓ* = 30 *cℓ*	Remained capacity of juice	Remained capacity of juice 100 *cℓ* – 30 *cℓ* = 70 *cℓ*

Activity 7.6.3

Try these:

1. 169 *dℓ* of water were removed from a jerrycan of 20 ℓ of water. How many cl of water remained?
2. My family prepared 3000 *dℓ* of juice for our visitors. If we remained with 40 ℓ of juice after the party, how many litres were consumed by our visitors?
3. I fetched 60 ℓ of water. How many litres of water did I remain with after washing my clothes with 375 *dℓ*?

Application activity 7.6

1) Use conversion table of measurements of capacity, to do these exercises

a) 4 ℓ – 98 *cℓ* = ___*cℓ*

b) 6 *dℓ* – 6 *cℓ* = ___*cℓ*

c) 56 *cℓ* – 5 *dℓ* = 6 ___

d) 98 *mℓ* – 6 *cℓ*= 3___

2) Mugabo needs 225 ℓ of water for making bricks. If he has only 1750 *dℓ*, how many litres of water does he need to complete his work?

3) We use 145 ℓ of water per day. If we have only 950 *dℓ*, how many litres of water do we need?

4) Hirwa fetched 750 *dℓ* of water. I f he used 38ℓ for watering plants, how many litres did he remain with?

What have you leant in this lesson?

7.7 Multiplication of capacity measurements by a whole number

Activity 7.7.1

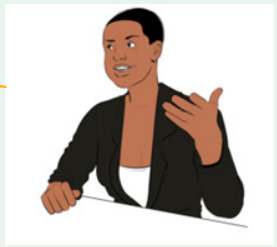
	Milk to be poured in the big right milking cane.	Big milking cane
You buy 6 small milking can of 50 cl for each. If you pour it in your big milk container, what is the total quantity of milk?	 Complete: 50ℓ x 6 = _____cℓ	

Activity 7.7.2

Follow the example to do the following activities

Example: 180 *cℓ*× 5 = ___ *dℓ*

I multiply the numbers, then I convert the product into the proposed unit



Then, l80 *cℓ*× 5 = 900*cℓ*= 90*dℓ*

Try these.

a) 654 dℓ × 7 =___dℓ

b) 565 cl × 2 =____cl

c) 55 ℓ × 3 = ___ℓ

d) 825 ml × 8 =___dl

Word problems involving multiplication of capacity measurements by a whole number

Activity 7.7.3

Follow this worked example and do the next activities.

Gatesi drinks 2500 *mℓ* of water per day. How many litres does she drink in 2 days?

Data	Question	Solution
Amount of water per day= 2500 *mℓ* Number of days = 2	Number of litres of water consumed in two days =?	Number of litres of water consumed in two days 2500 *mℓ* x 2 = 5000 *mℓ* = 5ℓ

Try these:

1. Ireme fetched 4 times using a small jerrycan of 15 ℓ. How many dl did she fetch?
2. Gashumba gets 32 ℓ of milk from his cow per day. How many litres of milk did he get in 5 day?
3. The family of 8 people each consumes 500 *cℓ* of milk per day. How many litres of milk do they consume altogether?
4. Uwineza's car uses 750 *cℓ* of fuel per day. How many litres of fuel does it use in 6 days?

Application activity 7.6

1) Workout the following

a) 654 *dℓ* × 9 = __*dℓ*

b) 565 *cℓ* × 8 = __*dℓ*

c) 185 ℓ × 4 = ___ℓ

d) 125 *dℓ* × 8 = __ℓ

2) How many litres of water does Uwingabire use in 5 days if she consumes 20 *dℓ* of water per day?

What have you leant in this lesson?

7.8 Division of capacity measurements by a whole number

Activity 7.8.1

Share equally one by one 4 *000 mℓ* of milk among your 8 friends. How many *mℓ* every one will get?

Complete:

Everyone will get: 4 000mℓ ÷ 8 = _____m ℓ

Activity 7.8.2

Use the conversion table of capacity measurements and the example given in the activity 1 to work out the following exercises

a) 1800 *mℓ*÷ 9 =___*dℓ*

b) 680 *cℓ*÷ 8 =___*mℓ*

c) 1484 *dℓ*÷ 7 =___*cℓ*

d) 7 890 *ℓ*÷ 6 =___*ℓ*

Try these:

a) 6900 *dℓ*÷ 5 =___*ℓ*

b) 7280 *dℓ*÷ 4 = ___*ℓ*

c) 86 *cℓ*÷ 3 = _____*mℓ*

d) 4 640 *mℓ*÷ 2 = ___*cℓ*

Word problems involving division of capacity measurements by a number

Activity 7.8.3

Discuss this worked example:

How many small jerrycans of 3 ℓ of water can fill a drum of 225 ℓ of water?

Data	Question	Solution
- Capacity of a small jerrycan = 3 ℓ - Capacity of a drum= 225ℓ	Number of small jerrycan	Number of small jerrycan 225 ℓ÷ 3 ℓ= 75

Try these:

1. How many small jerrycan of 5 ℓ can you get from a big jerrycan of 500 *d*ℓ?
2. Share equally 800 *c*ℓ of juice among 8 children. How many litres will you give to each child?
3. Share equally 450 *d*ℓ of cooking oil for 9 families.
4. Muhoza uses 4 ℓ of cooking oil in 8 days. If she uses the same quantity of cooking oil per day, how many cl of cooking oil does she use per day?

Application activity 7.8

1) a) 6960 *m*ℓ÷ 6 =___mℓ

b) 980 *m*ℓ÷ 7 =____mℓ

c) 488 ℓ÷ 8 =___ℓ

d) 6390 *m*ℓ÷9 =___mℓ

2) Share equally 900 *c*ℓ of water among 9 children.

3) Kamariza shared equally 56 *d*ℓ of milk among her 7 children. Find the share of each child

What have you leant in this lesson?

End of unit assessment 7

1) Fill in the missing number

a) 4 ℓ = ------dℓ b) 65 dℓ = -----mℓ

c) 7500 mℓ =-----dℓ d) 779 *dℓ* =------ *cℓ*

2) Use <,> or = to compare the following:

a) 79 dℓ _____7908 mℓ b) 27 dℓ _____ 16 cℓ

c) 9 ℓ _____79 dℓ d) 546 cℓ _____ 7 ℓ

3) Arrange from the smallest to the biggest: 75 *dℓ*, 707 *cℓ*, 3006 *mℓ*

4) Arrange from the biggest to the smallest: 46 *dℓ*, 915 *cℓ*, 234 *mℓ*

5) Do the following:

a) 4507 *mℓ* + 367 *cℓ* =------*mℓ*

b) 375 *mℓ* × 8 =------ *ℓ*

c) 5 l 7 *mℓ* + 43 *dℓ* =------ *mℓ*

d) 693 *dℓ*÷ 7 =------- *mℓ*

6) A restaurant uses 225 *cℓ* of cooking oil per day. How many litres of cooking oil does the restaurant use in 8 days?

7) I poured 67 *ℓ* of water in a drum. My brother poured 1330*dℓ* in the same drum.How many litres of water did we pour altogether?

8) If you pur equally 7500 cℓ of fuel in 5 cars, the fuel for each car is:

7500cℓ÷5 = __cℓ = ___ℓ.

UNIT

8

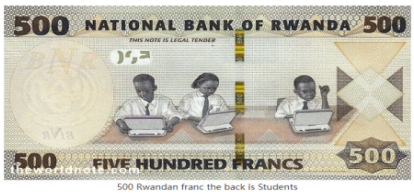
RWANDA FRANCS FROM 1Frw UP 5000 Frw

8.0 Introductory activity

Kanani gets his salary of 2 red notes. Kanani asks for change. They give him 20 brown notes.

Kanani is very happy thinking that he gets more money. What does Kanani need to learn in Mathematics?

5000 Rwandan franc the back is Baskets



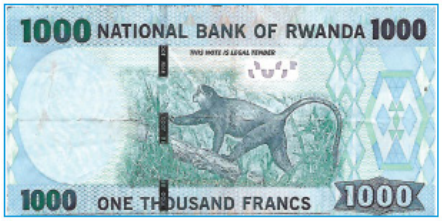
500 Rwandan franc the back is Students

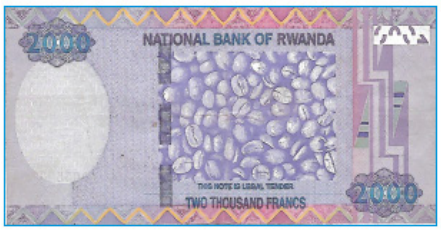
8.1 Characteristics and values of Rwandan francs from 1 Frw up to 5000 Frw

Activity 8.1

a) Look at each Rwandan coin. What do you see on the coin?

b) Look at each Rwandan note. Tell what you see on it.





Application activity 8.1

1. All Rwandan coins are in two different colors. Which colors are they?
2. What is the difference between Rwandan coins and notes?
3. What are the characteristics of the note of 1000Frw?

What have you leant in this lesson?

8.2 Changing Rwandan francs from 1 Frw up to 5000 Frw

Activity 8.1.2

1. Use Rwandan francs:
   a. A note of 1000 Frw = a note of ___Frw + a note of ___ Frw.
   b. A note of 2 000Frw =a note of ___Frw + a note of ___Frw.
   c. A note of 2 000Frw = a note of 1000Frw + a note of ___ Frw + a note of 500Frw.

d. A note of 5 000F =a note of __Frw + a note of ___Frw + a note of ___Frw.

e. A note of 5 000 =a note of __Frw + note of ___Frw + a note of ___Frw + a note of ___Frw + a note of __Frw.

2 Fill in the blank with the correct amount of money:

3 Fill in the blank with the correct amount of money:

a. 3 000 Frw = 1 000 Frw + 1 000 Frw + _____ Frw

b. 4 000 Frw = 2 000 Frw + 1 000 Frw + Frw 500 + _____Frw

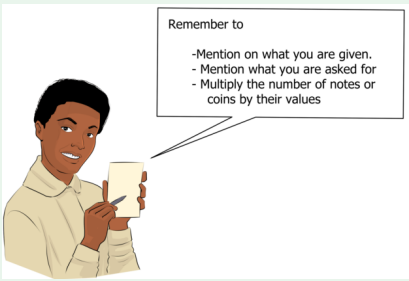
c. 2 000 Frw = 1 000 Frw + _____Frw+ Frw 500

Activity 8.2.2

Read and find the answer

Example:

Munezero receives 3 notes of 1000 Frw each and 2 notes of 500 Frw each as salary. How much money does Munezero receive?



Given	Question	Solution
3 notes of 1000Frw 2 notes of 500 Frw	Total amount of money	Total amount of money: 3 × 1000 Frw = 3 000 Frw 2 × 500 Frw = 1 000 F rw 3 000 Frw + 1 000 Frw = 4 000Frw

Try these:

1. My aunt gave me 3 notes of 1000Frw and 1 note of 2000Frw. How much did she give me?
2. Mugabo paid Uwera 4 coins of 100Frw and 8 notes of 500Frw. How much did she pay her?

Application activity 8.2

1. Fill in the blank with the correct amount of money

   a) 5 000 Frw = 1 000 Frw + 2 000 Frw + _____Frw+ 1 000 Frw

   b) 3 500 Frw = 2 000 Frw +_____ Frw+ 1 000 Frw

2. Read and find the answer

   a) We buy a chicken with 2 notes of 2000Frw and 3 notes of 500Frw. How much do we pay?

   b) Iranzi got 1 note of 2000Frw, 2 notes of 500Frw and 3 notes of 1000Frw. How much did he get?

   c) How many notes or coins can you pay for buying the following without change?

   a. 1 kg of sugar at 1 200 Frw
   b. 2 bars of soap at 900 Frw
   c. 1 l of cooking oil at 1800 Frw
   d. A book of 4500 Frw
   e. A shirt of 2500 Frw
   f. Shoes at 3500 Frw

8.3 Word problems involving addition of Rwandan francs from 1 Frw up to 5000Frw

Activity 8.3

Read and find the answer

Example:

Tunga buys a book at 3500 Frw and a notebook at 1200Frw. How much does Tunga pay?

Given	Question	Solution
The price of a book= 3 500Frw The price of a notebook = 1 200Frw	Amount paid	Amount paid: 3 500 Frw+ 1 200 Frw = 4 700 Frw

Try these

1. Rukundo has a note of 2000Frw. He buys a shirt at 1500Frw. How much money can the shop keeper give Rukundo as a change?
2. Ishimwe buys a school bag at 3500 Frw and a pen at 900 Frw. How much does Rukundo pay?
3. Mutabazi gives money for buying scholastic materials to his 4 children Ingabire, Gato, Mucyo and Bwiza as the following:
   - Ingabire got 750 Frw
   - Gato got 1450 Frw
   - Mucyo got 1150 Frw
   - Bwiza 950 Frw

How much money does Mutabazi give them altogether?

Application activity 8.3

1. I buy the paint at 2500 Frw and and the fuel at 970Frw. Find their total cost.

2. Uwamahoro gave me the packet of biscuits of 1200Frw, sweets of 500Frw and the juice of 800Frw. How much did she pay?
3. Our neighbours Mbabazi and Mutoni promised us 3400 Frw and 1300Frw respectively. How much did they promise us?

8.4 Word problems involving subtraction of Rwandan francs from 1 Frw up to 5000 Frw

Activity 8.4

Read and find the answer

Example:

Uwingabire had 5000 Frw and bought 1 kg of meat at 2500Frw. How much money did she remain with?

Given	Question	Solution
Total amount of money= 5000Frw Cost of 1kg of meat = 2500Frw.	Balance	5000Frw – 2500Frw = 2500 Frw

Try these:

1. Kangabe went to the shop with 1000Frw. She bought salt at 850Frw. How much did she remain with?
2. Uwitonze has 4500Frw. She wants to buy a trouser at 5000Frw. How much money does she need to buy the trouser?
3. Kaneza had 5000Frw. He buys the bucket. The shop keeper gives him 900Frw as change. What is the cost of bucket?

Application activity 8.4

1. A teacher went to buy chalks at 3750Frw and paid 5000Frw. Calculate the balance.
2. I was given 5 000Frw for being the first in my class. If I buy a mathematics book for 3 900Frw, how much money can I remain with?

8.5 Word problems involving multiplication of Rwandan francs from 1 Frw up to 5000 Frw

Activity 8.5

Read and find the answer

Example:

Kabayiza bought 56 eggs at 80 Frw each. How much did he pay altogether?

Given	Question	Solution
Number of eggs = 56 Cost of one egg= 80Frw	Amount paid	Amount paid 80 Frw x 56 = 4 480 Frw

Try these:

1. How much can you pay for each of the following:
   a) 4 kg of sugar at 1200 Frw per kg
   b) 2 l of cooking oil at 1800 Frw per l
   c) 8 bars of soap at 500Frw each bar
   d) 2 bunches of bananas at 1700 Frw per bunch
   e) 4 kg of rice at 1250 Frw per kg
1. How much money can you pay for 27 eggs if an egg is sold at 85 Frw?

Application activity 8.5

1. If 1 metre of a piece of cloth is sold at 1600 Frw, what is the cost of 6 m of a similar piece of cloth?
2. Gicanda bought 12 bottles of soda at 400 Frw for each. How much money did she pay altogether?
3. A group of 18 players bought one bottle of juice at 500Frw for each player. How much money did they pay altogether?

8.6 Word problems involving division of Rwandan francs from 1 Frw up to 5000 Frw by a number

Activity 8.6

Read and find the answer

Example:

Muhoza buys 8 kg of beans and pays 5000Frw. Find the cost of each kg of beans.

Given	Question	Solution
Number of kg= 8 kg Total amount = 5000Frw	Cost of 1 kg =?	Cost of 1 kg 5000Frw ÷ 8 = 625 Frw

Try these:

1. Share equally 4800 Frw among 4 workers. Find the share of each worker.
2. Gahima shared equally 4500Frw among his 5 children. Find the share of each child.
3. I paid 4400 Frw for 4 notebooks. Find the cost of each notebook.
4. I pay 3900 Frw to 3 helpers. They share that money equally. Find the share of each helper.

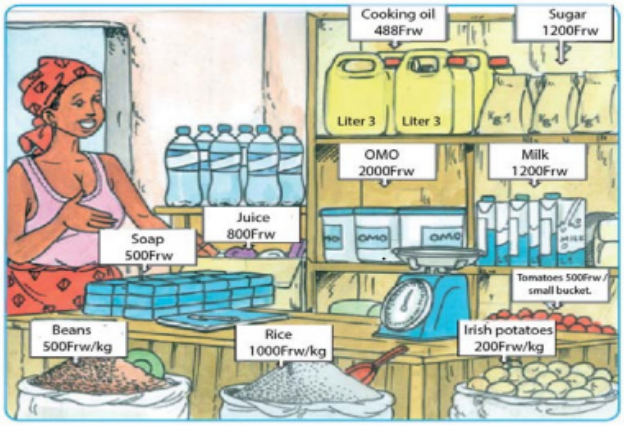
Application activity 8.6

1. Umuganwa bought 9 bottles of banana juice at 4500Frw. Find the cost of each bottle?
2. Karangwa sold 7 kg of rice at 4900Frw. What is the price for 1 kg of rice?
3. Find the cost of 1 litre of milk if 15 similar litres of milk cost 2250 Frw.
4. 9 bottles of soda cost 2250 Frw. Find the cost of 1 bottle of soda.

8.7 Buying and selling

Activity 8.7.1

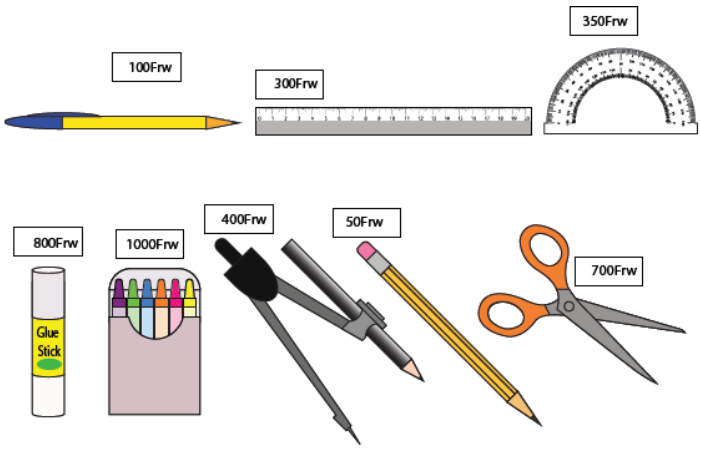
Look at the items below.



1. Find the price of 5 bottles of juice
2. How much can you pay for 3 l of cooking oil and 1 l of milk?
3. How much money did Mahame pay if he bought 2 kg of sugar and 4 bars of soap?
4. I bought 1 small bucket of powdered soap and 4 kg of beans. If I got the change of 1000Frw, how much money did I pay altogether?
5. How much money did we pay for 3 bottles of juice, 1 box of milk and 1 kg of sugar?

Application activity 8.7

Look at the stationery. Answer the following questions.



a) How many of the following objects can you buy with 1 000Frw without balance?

Pens | Pencils | Protractors

b) How many of the following objects can you buy with 2 000Frw without balance?

Crayons | Glue sticks | Scissors

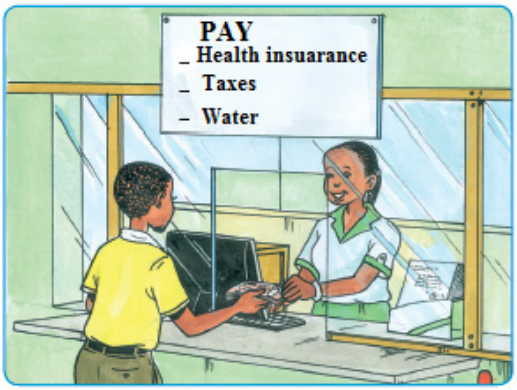
c) How many of the following objects can you buy with 5 000Frw without balance?

Pens | Pencils | Rulers

8.8 Importance of money, saving and small income generating projects

Activity 8.8.1

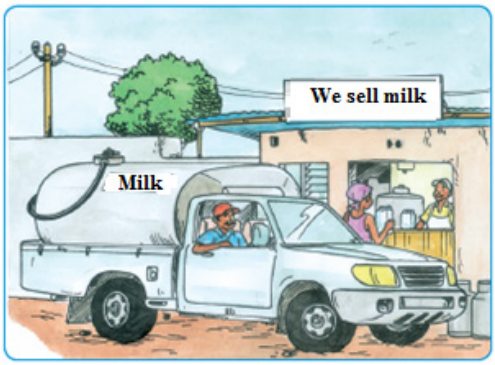
1. Look at the picture. Tell your friends the importance of money.



2. Make a list of things you can buy with 1000Frw

Activity 8.8.2

Look at the pictures.



Tell your friend the sources of money.

Activity 8.8.3

Read the list of small projects that generate money. Choose the ones that are better than others and explain why it is better.

1. Picking the remaining beans from your family's harvested farm, selling those beans at 3000Frw and using that money to buy hens.
2. Keeping my gift of 2000Frw and using it to buy a rabbit.
3. Asking my parents to give me a small piece of land for planting vegetables such as carrots or cabbages.
4. Making toys and selling them to my friends.
5. Planting an avocado tree, harvest it and sell to get the money for buying school materials.

Application activity 8.8

1. Give examples of activities people can do to get money.
2. List examples of bad ways that give money and how to avoid them.
3. Tell your fiend 2 examples of services for which we pay money.
4. What is the importance of money?

End of unit assessment 8

1. Fill in the missing amount

   a. 5 000 Frw = 2 000 Frw + ------Frw+ 2 notes of 500 Frw

   b. 2 000 Frw = 10 Coins of 100 Frw +--------Frw

2. Look at the following price list of Bwenge's shop. Answer to questions.

Item	Price
Bread	1000Frw
Rice	1kg is 1100 Frw
Sugar	1 kg is 1200 Frw
Beans	1 kg is 500 Frw
Milk	1 ℓ is 500Frw
Groundnuts	1 kg is 1300Frw
Cooking oil	1ℓ is 2000Frw
Soap	500Frw

   a. How much can you pay for 1 l of milk and 1 l of cooking oil altogether?

   b. Munezero has 5000Frw, he needs to buy 6 kg of beans, 1l of cooking oil and 2 kg of sugar. How much does he need to complete his shopping?

   c. Ireme buys 1 kg of rice, 1 kg of sugar and 2 kg of groundnuts. If he receives 100rw as change how much did he go with to the market?

   d. How much can you pay if you buy 1 litre of milk and 1 litre of cooking oil?

3. Share equally 4800Frw among 4 workers. How much money can each work get?

4. Muhoza goes to the shop with 3500Frw.How much does she need if she wants to buy a dress of 5000 Frw?

UNIT

9 TIME MEASURMENTS

9.0 Introductory activity

Gapasi is a house worker. He prepares meals in the early morning. He doesn't know when the month ends. Gapasi always asks for his salary before the end of the month. What does Gapasi need to learn in Mathematics?

9.1 Reading and telling time shown on a clock face

9.1.1 Exact time

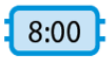
Activity 9.1.1

1) Look at the clock face and tell the time.

a) b)

c)

d)



A clock face/analog clock *Digital clock*

2) Answer by true or false:

a. On a clock face, it is exact time when the short hand (hour hand) points to any number located on the clock face while the minute hand points to 12. ____

b. When the hour hand is in 4 and the minute hand is in 12 we say **"it is 4 o'clock"**.____

c. On the digital clock when there is **8:00**, we read "it is eight o'clock". ____

3) Draw a digital and analog clock showing the following time:

a) One o'clock b) Eleven o'clock

Application activity 9.1.1

Tell the time shown by the clock

a)

b)

c)

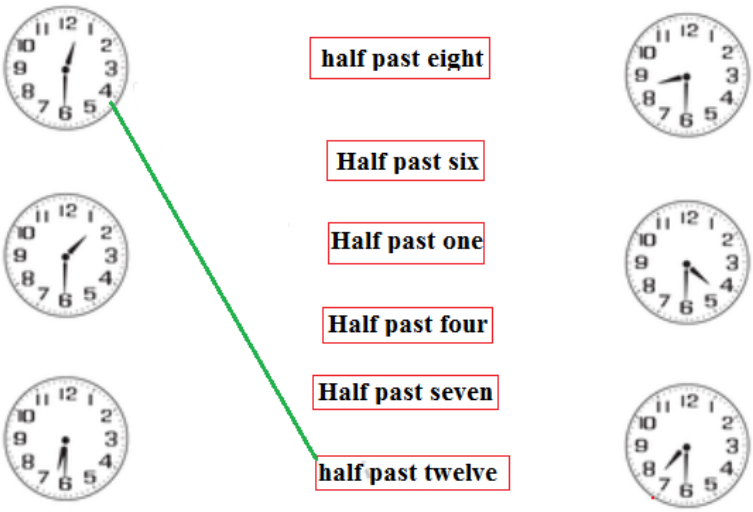
d)

9.1.2 Half past or thirty minutes past an hour

Activity 9.1.2

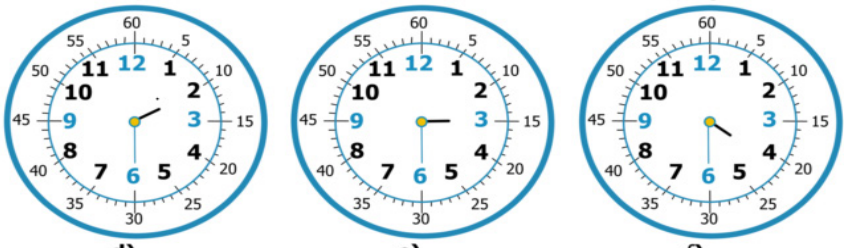
1) Look at the digital time below. Put hands on the clock and tell the time

2) Match the clock and the time



3) Tell the time shown by the clock.

a) b) c)



d) e) f)

7:30 8:30 9:30

Application activity 9.1.2

1) Draw an analog clock showing the following time:

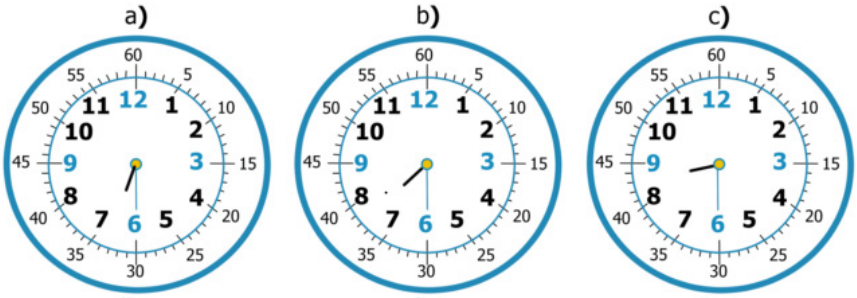
a) Half past twelve b) Half past nine

2) Draw digital clock showing the following time:

a) Half past five b) Half past one

3) Tell the time shown by the clock

a) b) c)



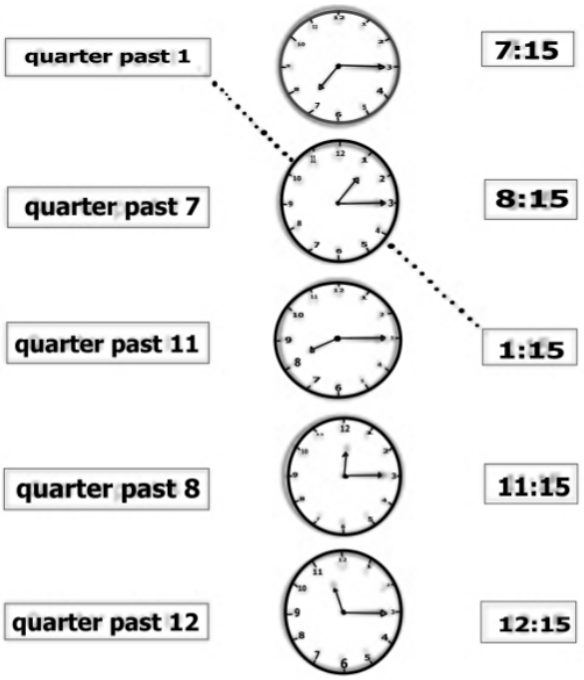
d) e) f)

6:30 7:30 8:30

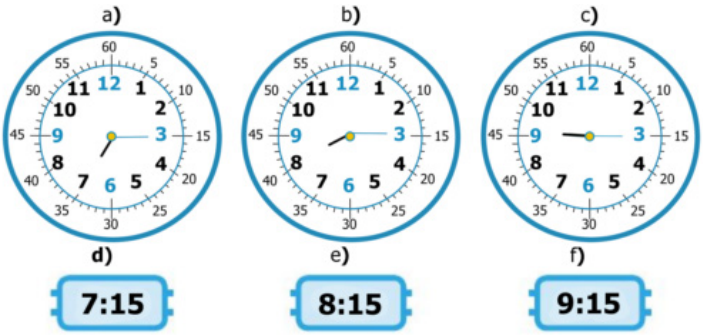
9.1.3 Quarter past an hour or fifteen minutes past an hour

Activity 9.1.4

1) Match the clock and the time (Draw clear images)



2) Tell the time shown by the following analog and digital clocks



Application activity 9.1.4

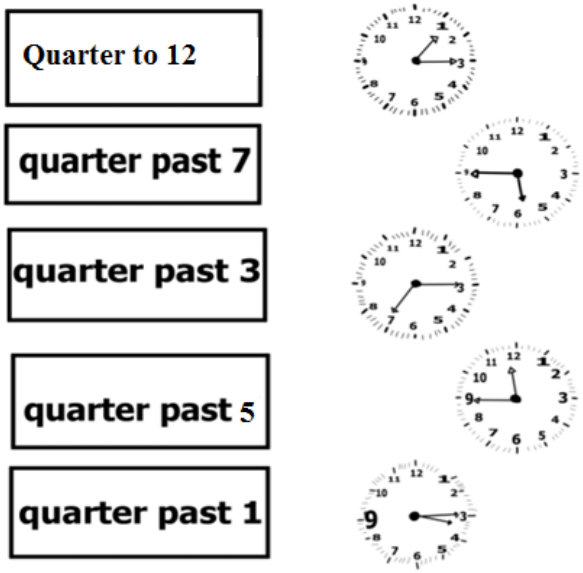
Draw a clock face /analog clock and a digital clock showing the following time

a) 8:00 b) 10:30 c) 11:15 d) 6:30

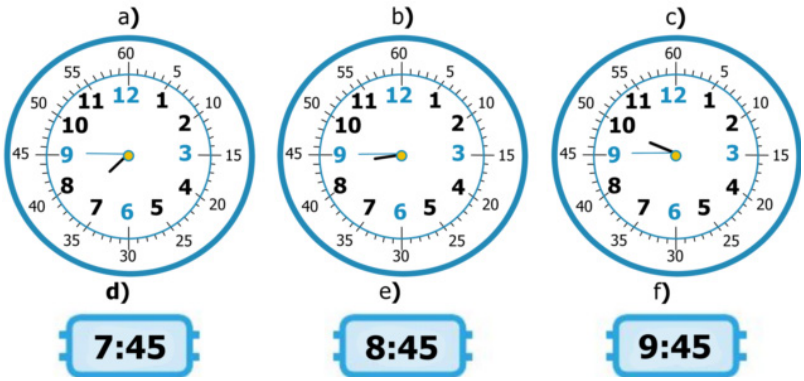
9.1.4 Quarter to an hour

Activity 9.1.5

1) Match the clock and the time (Draw clear images)



2) Read and tell the time



Application activity 9.1.5

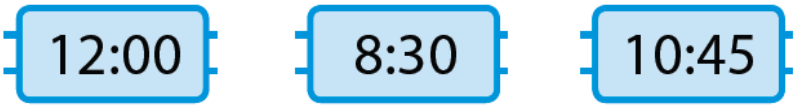
1) Draw a clock face with hands that indicate:
   a. Fifteen minutes to 8 o'clock.
   b. Fifteen minutes to 5 o'clock.

2) Read and tell the time in these clocks
   a. 12:15
   b. 7:15

9.1.5 Reading and writing the time shown on different clock faces

Activity 9.1.6

1) Read and write the time shown by the following digital clock



2) Read and give another example of the time.

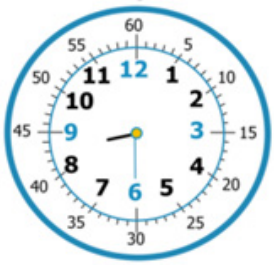
Numbers	Time in words	Digital clock
1	One o'clock during the day or night	1:00
2	Two o'clock during the day or night	2:00
3	Three o'clock during the day or night	3:00
4	Four o'clock during the day or night	4:00
5	Five o'clock during the day or night	5:00
6	Six o'clock during the day or night	6:00
7	Seven o'clock during the day or night	7:00
8	Eight o'clock during the day or night	8:00
9	Nine o'clock during the day or night	9:00
10	Ten o'clock during the day or night	10:00
11	Eleven o'clock during the day or night	11:00
12	Twelve o'clock during the day or night	12:00

3) Tell and write in words or in figures the time shown by the following clock faces /analog and digital clocks

a)

b)

c)



d)

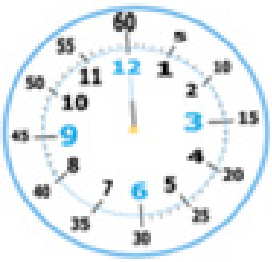
e)

f)

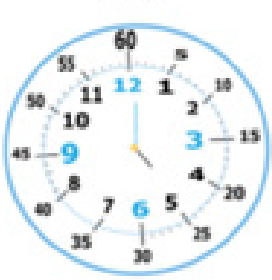
Application activity 9.1.6

1) Write in words or in figures the time shown by the following clock faces

a)



b)



c)

d)

e)

2) Draw clock faces showing the following time:

a) 10:45

b) Half past two

c) Quarter past one

d) 6:00

9.2 Use of a calendar

Activity 9.2.1

Study the calendar of 2018 and answer to the questions.

January 2018

January 2018						
Sunday	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Saturday**
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Questions

1) For which month is the calendar given above?

2) Observe the first month of the year 2018:
   a. On which day does it start?
   b. On which day does it end?
   c. How many days are in January 2018?

3) How many weeks are in the whole year of 2018?

4) How many days are in the whole year of 2018?

Application activity 9.2

1) Write the following
   a. The opening date of this term of the current school year.
   b. The closing date of this term of the current school year.

2) Read and discuss with your friend the number of days for months:

Months	Days
January	31
February	28/29
March	31
April	30
May	31
June	30

Months	Days
July	31
August	31
September	30
October	31
November	30
December	31

9.3 Converting days to hours

Activity 9.3

Study the example below and explain what has been done.

Example:

A day has **24 hour**s.

2 days = --- hours

1 day = 24 hours

2 days = 24 x 2 = 48 hours

When converting days into hours, you multiply 24 hours by the number of days.

Now try these:

a) 13 days = ------ hours

b) 6 days = ------ hours

c) 9 days = ------ hours

d) 17 days = ------ hours

e) 35 days = ------ hours

f) 4 days = ------ hours

Application activity 9.3

a) 3 days = ------ hours

b) 4 days = ------ hours

c) 5 days = ------ hours

d)14 days = ------ hours

e) 16 days = ------ hours

9.4 Converting weeks into days

Activity 9.4

Look at the example below and explain what has been done.

Example:

3 weeks = ----------days

1 week = 7 days

3 weeks = 7 days **× 3 = 21days**

When converting weeks into days, multiply 7 days by the number of weeks

Now try these:

a) 19 weeks =------days

b) 31 weeks = ------days

c) 45 weeks =------days

d) 80 weeks =------days

e) 38 weeks = ------days

f) 45 weeks =------days

Application activity 9.4

a) 24 weeks = ------days

b) 19 weeks = ------days

c) 55 weeks = ------days

d) 40 weeks = ------days

9.5 Converting years into months

Activity 9.5

Read the example below and explain what have been done.

Example:

How many months are there in 6 years?

1 year is equal to **12 months**

6 years are equal to **12 x 6 = 72 months**

Now, try these:

a) 2 years = ------Months b)3 years = ------Months

c) 4 years = ------Months d) 11 years = ------Months

Application activity 9.5

Complete:

a) 12 years = ------Months b) 14 years = ------Months

Note that a year has **52 weeks**.

9.6 Ordinary year and a leap year

Activity 9.6.1

1) Use a calendar to identify the days of February in the following years:

a) 2018 b) 2017 c) 2016 d) 2015

e) Among all those years which years are divisible by 4

2) Read and discuss with your friend

- 2015, 2017 and 2018 are ordinary years because they have 366 days.
- The month of February for an ordinary year has 28 days.
- An ordinary year has 365 years
- The days of an ordinary year are not divisible by 4
- 2016 is a leap year because the month for February has 29 days. The total number of days for this year is 366 days.
- The month of February for a leap year has 29 days
- A leap year has 366 days
- The days of a leap year are divisible by 4

Activity 9.6.2

Read the following example and identify ordinary years between 2000 and 2018.

Example:

2018 ÷ 4=504 Remainder is 2

```
  504
4)2018
 -20
  001
  -0
   18
  -16
   02
```

2016 ÷ 4=504

```
  504
4)2016
 -20
  001
  -0
   16
  -16
   00
```

This means that:

2018 is an ordinary year because it has 365 days.

2016 is a leap year because it has 366 days

Application activity 9.6

1) Choose ordinary years in the following years:

a) 1990 b) 1992 c) 1994 d) 1995 e) 1993 f) 1991

2) Choose leap years in the following years: a) 1990

a) 1996 b) 1998 c) 1992 d) 1994 e) 1999

3) Find out the leap years which are between 1998 and 2021.

9.7 Planning activities

9.7.1 Planning daily activities

Activity 9.7.1

Read the following daily activities of MUHOZA and compare them with yours

Time	Activities
6:00 in the morning	Waking up
6:00 – 6: 30 in the morning	Preparation for school
7: 00 in the morning	Going to school
7:30 – 12: 30 in the afternoon	Studying
12:30 – 1: 30 in the afternoon	Lunch
2:00 – 4: 30 in the afternoon	Studying
4:30 – 4: 50 in the evening	Writing the homework
4:50 – 5: 00 in the evening	Arranging books and note book
5:00 in the evening	Returning home
6: 00 in the evening	Bathing
7:00 in the evening	Revising the notes and doing the homework
8:00 in the evening	Supper
9:00 in the evening	Sleeping

Activity 9.7.2

Use the daily activities of MUHOZA above and plan your daily activities of tomorrow.

9.8.2 Planning weekly activities

Activity 9.7.3

Read the following weekly activities of ABIJURU and compare them with yours.

Time	Activities
Monday	• Going to school • Doing homework
Tuesday	• Going to school • Watering flowers • Doing homework
Wednesday	• Going to school • Feeding chicken • Doing homework
Thursday	• Going to school • Helping my parents to clean our home • Doing homework
Friday	• Going to school • Reading story books • Doing homework
Saturday	• Helping my parents to wash clothes and to clean our home • Doing homework
Sunday	• Going to church

Activity 9.7.4

Use the above weekly activities for ABIJURU and plan your weekly activities of next week.

9.8.3 Planning monthly activities

Activity 9.7.5

Read the following monthly activities of KAMARIZA and compare them with yours.

Time	Activities
First week	• Studying • Doing home activities • Praying
Second week	• Studying • Doing home activities • Praying • Visiting friends
Third week	• Studying • Doing home activities • Praying • Playing competitions
Fourth week	• Studying • Doing home activities • Praying • Visiting sick people

Activity 9.7.6

Refer to the monthly activities of KAMARIZA above and plan your monthly activities of next month.

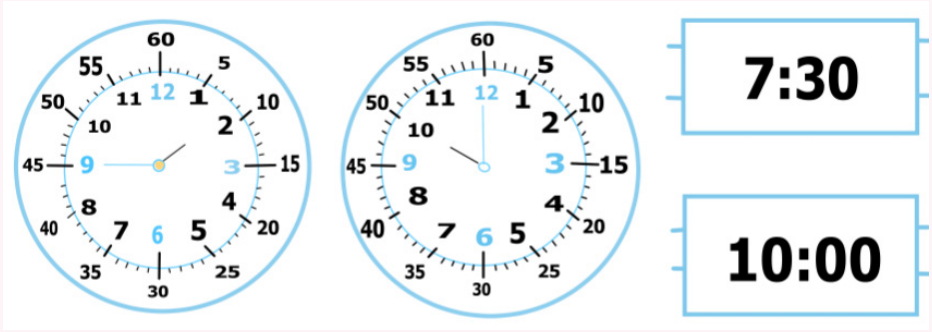
Application activity 9.7

Write 4 activities you do on Sunday. Start from the first to the last activity:

1. _____
2. _____
3. _____
4. _____.

End of unit assessment 9

1) Read and write the time



2) **Complete:**

a. 40 years = ------ months

b. 50 weeks =----- days

c. 33 days =------- hours

d. 19 years = -------moths

e. 29 days = ------ hours

3) Complete the following sentences

a. An ordinary year has -------- days, while a leap year has ---------- days.

b. A month has ------ weeks while a year has ------ months

c. A week has ------ days while a day has ------- hours

d. A month which has fewer days among other months of the year is --------

4) Choose ordinary years among the following years

a. 2000 b. 2004 c. 2002

e. 2005 d. 2007 f. 2008

5) Circle the leap year in the following:

a. 2000 b. 2010 c. 2012

d. 2016 e. 2019 f. 2008

6) Find the leap years which are between 2010 and 2030

UNIT 10

TYPES OF LINES AND ANGLES

10.0 Introductory activity 10

Sebisusa is a farmer.

He planted crops in a field which is not well prepared. Crops are not on straight lines: they are in disorder. What does Sebisusa need to learn in Mathematics?

10.1 Types of lines

10.1.1 Straight lines

Activity 10.1.1

1) Look at the following lines.

What are their characteristics?

a) b) c)

2) Do the following

a. Use a ruler to draw the same lines you saw in the previous activity.

b. Draw the same lines without using a ruler.

c. Compare lines drawn with a ruler and lines drawn without a ruler.

Application activity 10.1.1

Use your gridded notebook to draw

a. Vertical straight lines

b. Horizontal straight lines

What have you leant in this lesson?

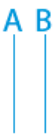
10.1.2 Parallel lines

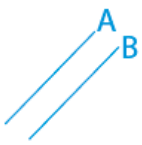
Activity 10.1.2

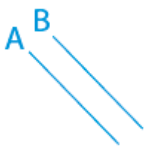
Look at the following lines.

What are their characteristics?

a) 

b) 

c) 

d) 

Try these:

With a ruler, draw two parallel lines, make them very long and verify if they can meet. Can they meet? or no?

Application activity 10.1.2

1. Use a ruler and draw different groups of 3 parallel lines.
2. Look at different objects located in your classroom. Which of them have parallel lines?

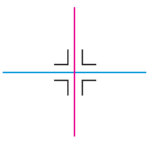
Tell your friends other objects with parallel lines you saw in your school or at home.

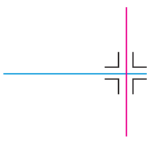
What have you leant in this lesson?

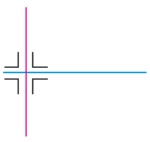
10.1.3 Intersecting lines with a right angle

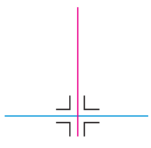
Activity 10.1.3

1) Look at the following lines. How are the lines?

a) 

b) 

c) 

d) 

2) Using a ruler, draw two straight lines: a **vertical line** and a **horizontal line** which intersect to make an angle.

Use **a set square** to verify the angles formed.

How many angles have you made?

Are they right angles?

Application activity 10.1.3

a) Draw intersecting lines which make right angles between them

b) Use rulers, sticks, and pens to draw two lines which intersect and make right angles.

What have you leant in this lesson?

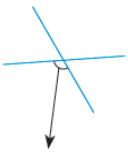
10.1.4 Intersecting lines to make acute and obtuse angles

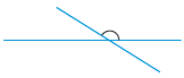
Activity 10.1.4

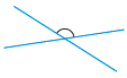
1) Look at the following lines.

What are their characteristics?

How are angles formed by these lines?

a) 

b) 

c) 

d) 

2) Do the following:

a. Use a ruler to draw intersecting lines which form acute and obtuse angles.

b. Use rulers and pens to draw two oblique straight lines which intersect and make angles.

Application activity 10.1.4

Look at lines. Complete with the correct names of lines.

a) A and B are _____ lines.

b) A and C are _____ lines

c) A and D are _____ lines

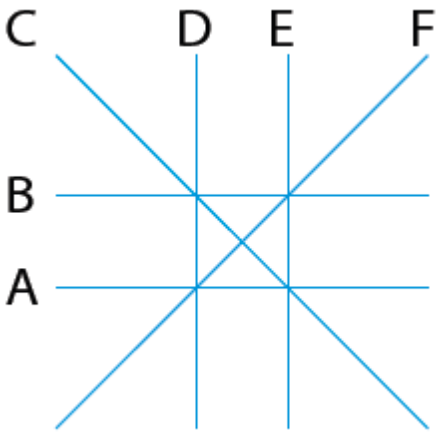
d) A and F are _____ lines

e) A and E are _____ lines

f) B and D are _____ lines

g) B and C are _____ lines

h) B and E are _____ lines.



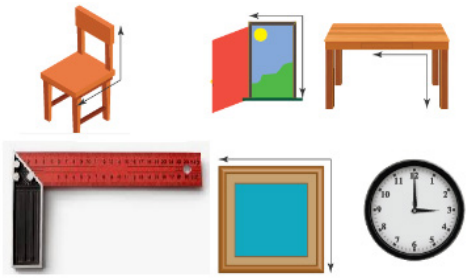
What have you leant in this lesson?

10.2 Types of angles

10.2.1 Right angle

Activity 10.2.1

1) Look at the following pictures or objects. What type of angles do you see?



2) Do the following:

a) Use a protractor and a ruler to draw a right angle.

b) Tell your friend and write 3 objects that have the right angle.

Application activity 10.2.1

a) Draw 4 right angles.

b) Find names of different objects which have a right angle: in your classroom or outside.

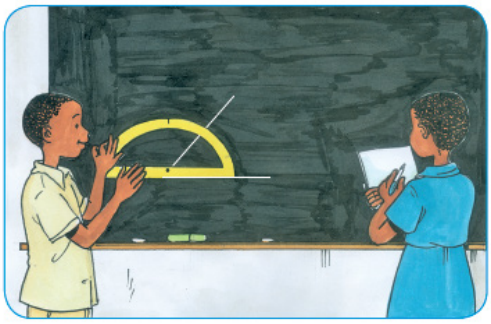
What have you leant in this lesson?

10.2.2 Acute and obtuse angle

Acute angle

Activity 10.1.2

1) Look at the pictures or objects. What type of angles do you see?



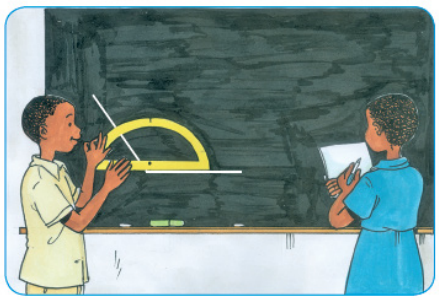
2) Do the following:

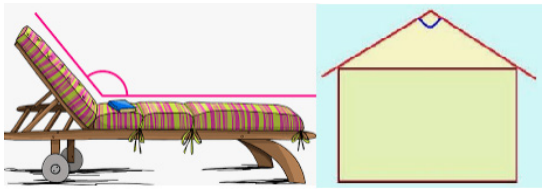
Use a ruler and protractor to draw an acute angle.

Obtuse angle

Activity 10.2.3

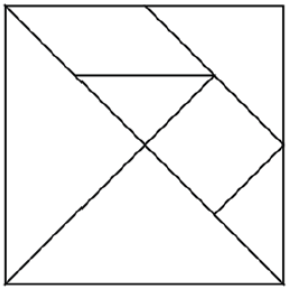
1) Look at the following pictures or objects. What type of angles do you see?





2) Use a ruler and protractor to draw an obtuse angle.

3) Observe the figure.



Count the angles you can see in this shape.

- How many are they?
- How many are obtuse angles?
- How many are acute angles?
- How many are right angles?

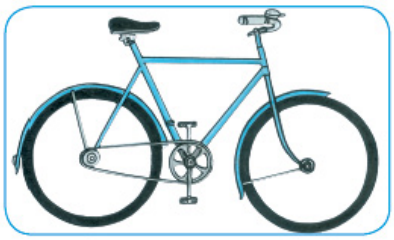
Application activity 10.2.2

1) Do the following:

a) Draw 4 acute angles.

b) Find names of different objects which have an acute angle: in your classroom or outside.

2) Look at this picture. Show and give names of angles on it



3) Give names of the following angles:

a) 

b) 

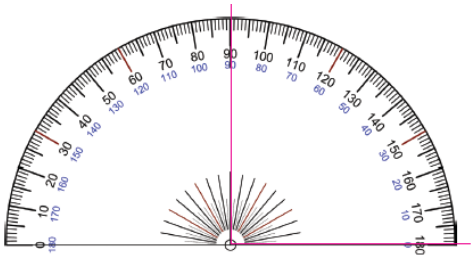
c) 

What have you leant in this lesson?

10.3 Use of a protractor to measure angles

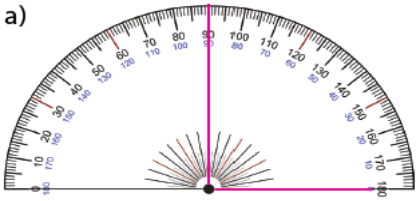
Activity 10.3

1) Look at the picture below. What do you see?

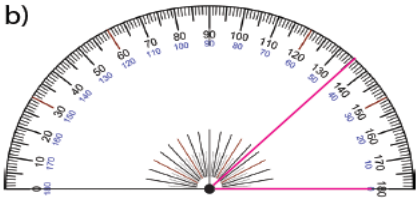


2) Look at the protractor. Tell and write the value of the angle between two red lines.

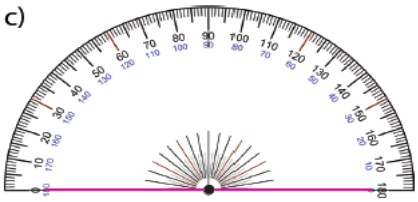
a)



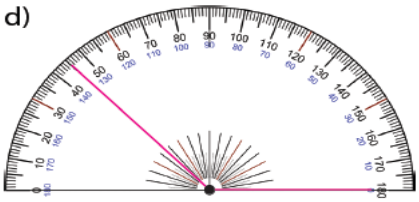
b)



c)



d)



3) Use a protractor and a ruler to draw the following angles:

a) 75^0 c) 125^0 e) 76^0

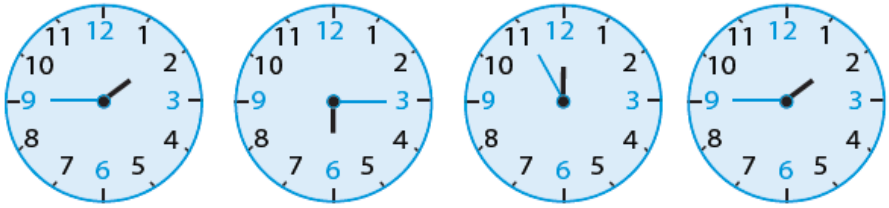
b) 90^0 d) 150^0 f) 35^0

Application activity 10.3

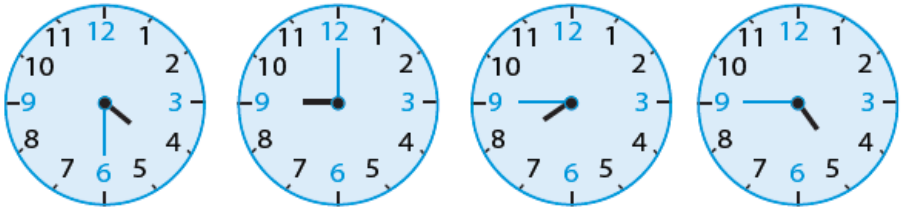
1) Use dotted lines to enlarge hands.

Use a protractor and measure the angle formed by the shorthand and the long hand.

a) b) c) d)



e) f) g) h)



2) Using a ruler, a protractor and a pencil, draw angles by joining letters.

Name the angles formed.

A•	•B	C•	•D
E•	•F	G•	•H
I•	•J	K•	•L

a. Join B and A together with B and E
b. Join J and K together with J and F
c. Join G and B together with G and H
d. Join I and J together with I and F.

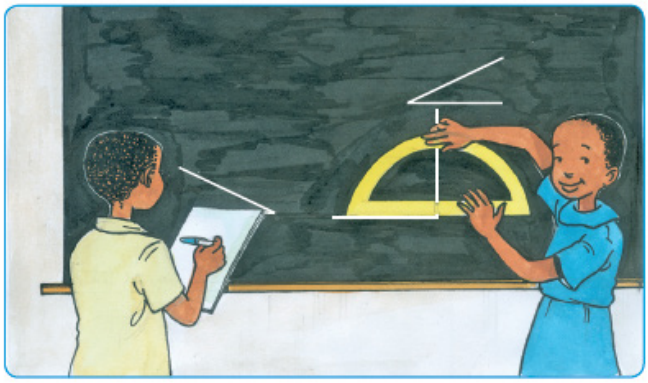
What have you leant in this lesson?

10.4 Comparing angles

Acute angle and the right angle

Activity 10.4.1

1) Look at pictures. What are the children doing? Are angles of the same size?



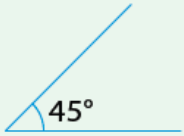
2) Draw an acute angle and a right angle. Measure them and compare their values.

a) **A right angle:**

90°

b) **An acute angle of**

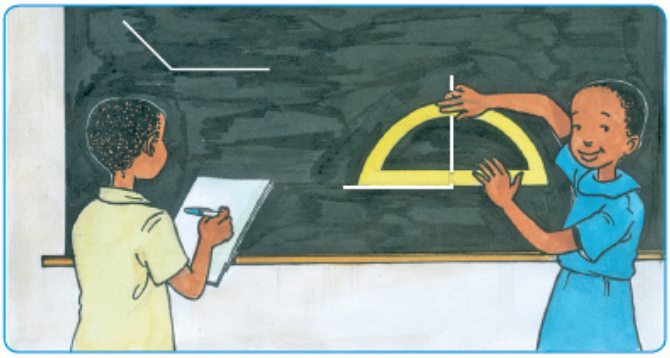
45°



A right angle and an obtuse angle

Activity 10.4.2

Look at the picture. What do you see? Are angles of the same size?

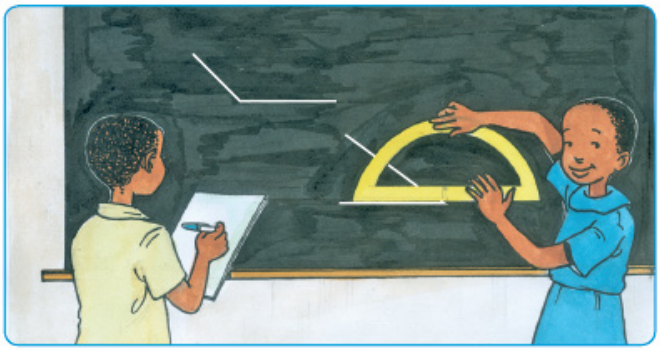


2) Draw a right angle and an obtuse angle. Measure them and compare their values.

An obtuse angle and an acute angle

Activity 10.4.3

1. Study the picture below, what do you see,



2. Do the following:
   a. Use a protractor and draw two acute angles and two obtuse angles. Compare these angles.
   b. Draw the following clock faces with hands, measure angles formed by the hour hand and the minute hand.

      i) The clock showing forty-five minutes past three.

      ii) 8:30

      ii) A clock showing fifteen minutes past eleven.

Application activity 10.4.3

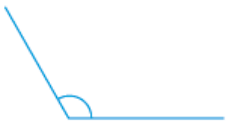
1. Draw two right angles and two acute angles.

Use a protractor to measure them. Compare their values.

2. Use a protractor and draw two right angles and two obtuse angles. Compare them.
3. Complete by: “is less than” or “is greater than”

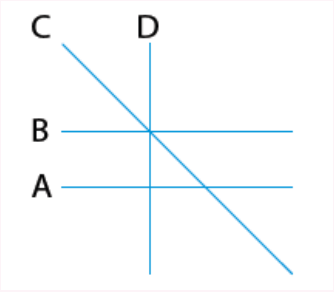
End of unit assessment 9

1) Use a protractor to mesure the value for the following angle:

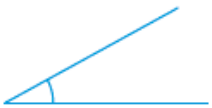
a)  b)  c) 

2) Write the name of the following lines

a) A and B are_____ lines
b) C and D are _____Lines
c) A and D are ____lines
d) B and D are ____ lines
e) C and A are ____ lines
f) B and C are ____lines



3) Write the name of the angle:

a)  b)  c) 

4) Use a ruler and a protractor to draw these angles:

a) 56° b) 98° c) 170° d) 135°

5) Draw:

a) Intersecting lines forming a right angle.

b) Two parallel lines

c) Intersecting lines forming acute angles and obtuse angles

6) Complete by True or False

a) A right angle is greater than an obtuse angle.____

b) Two parallel straight lines cannot meet (cannot intersect).____

c) A right angle is greater than an acute angle._____

d) An obtuse angle is greater than an acute angle._____

UNIT 11

SQUARE, RECTANGLE,TRIANGLE AND CERCLE

11.0 Introductory activity

Kalisa is with the mason. The mason is going to construct the house for Kalisa.

The mason asks Kalisa to tell him the geometric figure and the perimeter of his land.

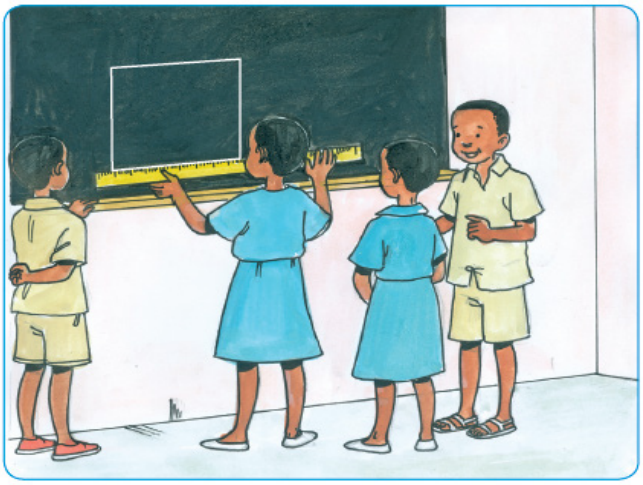
Kalisa fails as he does not know any geometric figure. What does Kalisa need to learn in Mathematics?

11.1 The square

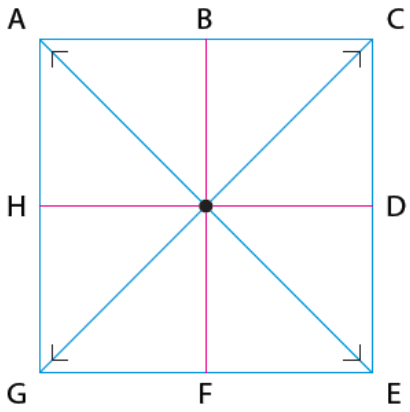
Characteristics of a square

Activity 11.1.1

1) Look at the figure. What do you see? Do sides of the figure have the same length? Draw the same figure.



2) Look at the following square. Mention the names of line segments you see.



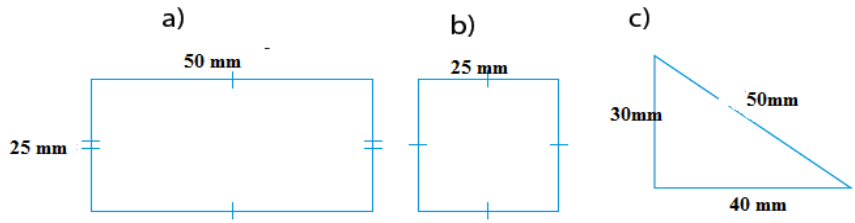
3) Use a set square and a ruler to draw a square of 8cm side.

Within the square, draw:

a) Medians

b) Diagonals.

4) Choose the square among these geometric figures:



Activity 11.1.2

1. Find in your classroom all objects with the form of a square.
2. Take sheets of paper, fold them to make squares. Then, cut squares and hang them in your classroom.

Perimeter of a square

Activity 11.1.3

- Draw a square that has the side of 12cm.
- Surround it with a rope.
- Measure the total length of the rope;
- Measure the length for all sides of the square and add them.
- Compare the length of the rope and the sum of lengths for all 4 sides.

Are they equal?

Activity 11.1.4

Read and find the answer.

Example:

a) Find the perimeter of a square whose side equals 75 cm.

b) Find the length of one side of a square whose perimeter is 900cm.

Given	Question	Calculation
a) The side = 75cm	Perimeter=?	Perimeter = side x 4 Perimeter = 75 cm × 4 = cm 300
b) Perimeter= 900cm	Side	Side = Perimeter ÷ 4 Side = 900 cm ÷ 4 = 225 cm

Try these:

1. Find the length of the side of a square whose perimeter is:

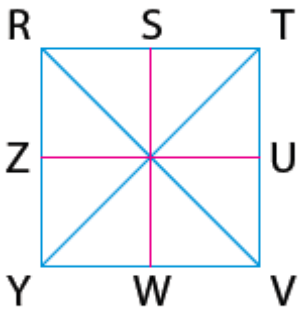
   a) 640 cm b) 196 cm

   c) 312 cm d) 676 cm

2. The length of one side of the squared land is 80cm. Find its perimeter.
3. Find the length of the side of a square with the perimeter of 1,700m.

Application activity 11.1.1

1. Give names of objects which have the form of a square.
2. Observe this figure.



Give names of the following **line segments**:

a) RV: _____

b) ZU: _____

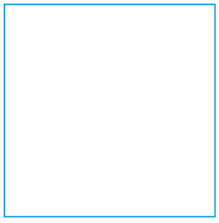
c) SW: _____

d) TY:_____

3. Find the perimeter of a squared window of side 145cm.
4. Find the length of a squared piece of land whose perimeter 160cm.
5. Find the perimeter of the following figure:

a)

b)



What have you leant in this lesson?

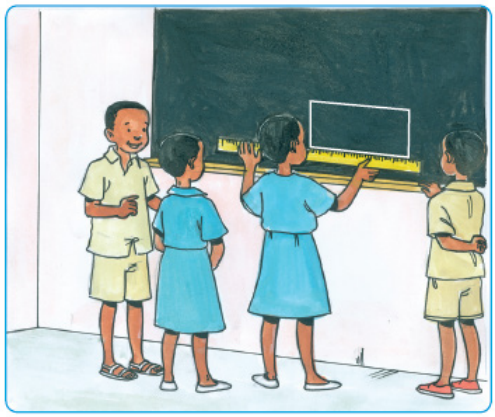
11.2 The rectangle

11.2.1 Characteristics of a rectangle

Activity 11.1.2

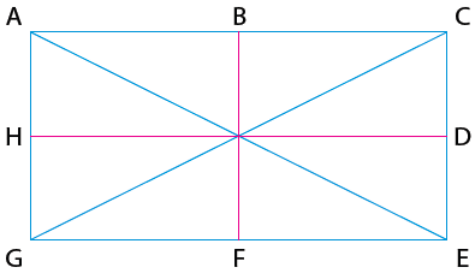
Look at the picture.

What are children doing? Draw the same figure.



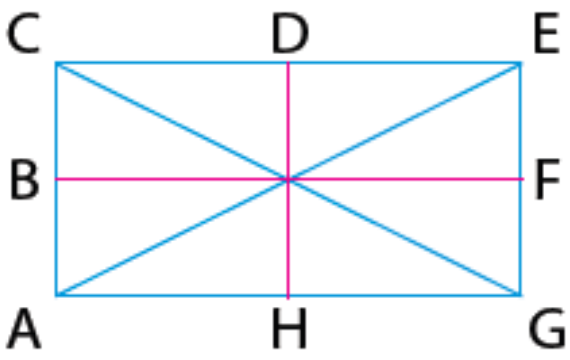
Activity 11.2.2

Look at the picture. How are the **line segments** you see in the rectangle?



Try these:

1) Look at the following rectangle and name these **line segments**.



a) AC is a _____

b) CG is a _____

c) AG is a _____

d) BF is a _____

e) AE is a _____

f) HD is a _____

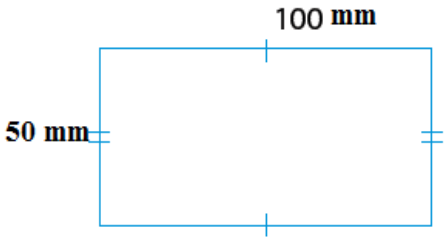
g) GE is a _____

h) FE is a _____

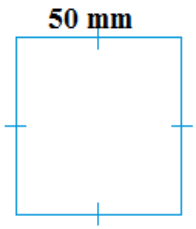
2) Draw a rectangle whose width is 5cm and length is 7cm. Put in diagonals and medians.

3) Which figure is a rectangle?

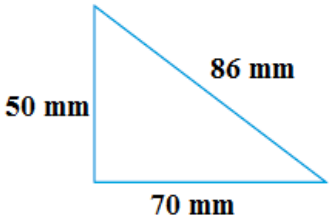
a)



b)



c)



Perimeter of a rectangle

Activity 11.2.3

- Draw a rectangle whose length is 20cm and width is 10cm.
- Surround this rectangle with a rope, fix its length and cut it.
- Measure the total length of this rope.
- Measure the length for all sides of the rectangle and add them.
- Compare the length of the rope and the sum of lengths for all 4 sides of the rectangle.
- Explain what you find.

Activity 11.2.4

Find the perimeter of a rectangle whose length is 74cm and width is 56cm.

Given	Question	Answer
Length= 74cm Width = 56 cm	Perimeter =?	Perimeter = (L+ W) × 2 Perimeter: (74cm + 56cm) × 2 = 260cm

Try these:

1) Find the perimeter of a rectangular piece of land of length 570cm and width of 450cm.

2) Find the perimeter for a rectangular door which has 750 cm of length and 250cm of width.

Application activity 11.2.1

1) Find different objects in your classroom which have the form of a rectangle.

2) Use sheets of paper or boxes and make rectangular objects. Hang them in your classroom.

3) List other objects which have the form of a rectangle.

3) Find the perimeter for a rectangle with the length of 124 cm and the width of 98 cm.

4) Find the perimeter of a rectangular plot with 63 m of length and 39m of width.

5) Calculate the perimeter for a rectangular table with 250cm of length and 150cm of width.

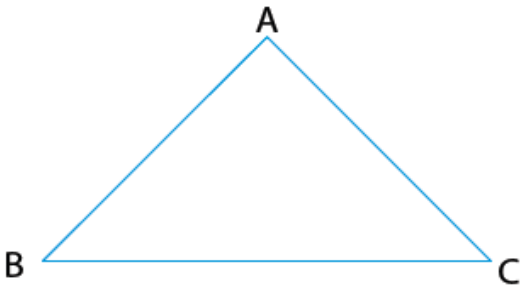
What have you learnt in this lesson?

11.3 The triangle

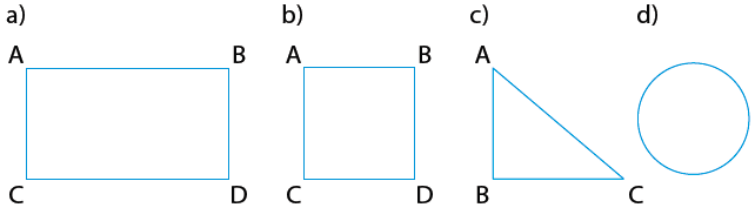
11.3.1 Characteristics of a triangle

Activity 11.3.1

1) Look at the picture. Say what you see. How many angles does it have?



2) In the following figures, which one is the triangle? Give a reason for your answer.



Application activity 11.3.1

1) Find different objects in your classroom which have the form of a triangle.

2) Use sheets of paper or boxes and make triangular objects. Hang them in your classroom.

3) List other objects which have the form of a triangle.

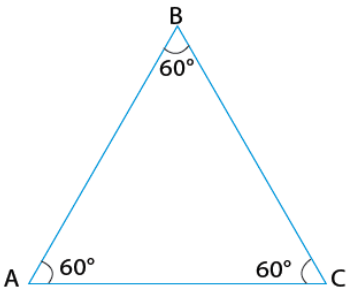
What have you learnt in this lesson?

11.3.2 Types of triangles

Equilateral triangle

Activity 11.3.2

1) Look at this triangle, measure the length of its sides, the values of its angles and compare them. What is the answer?



2) Find different objects in your classroom which have the form of an equilateral triangle.

3) Use sheets of paper or boxes and make equilateral triangular objects. Hang them in your classroom.

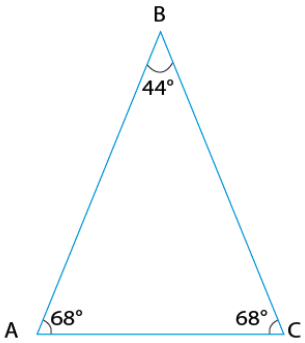
Application activity 11.3.3

List other objects which have the form of an equilateral triangle.

Isosceles triangle

Activity 11.3.3

1) Look at this triangle, measure the length of its sides, the values of its angles and compare them. What is the answer?



2) Show different objects in your classrooms which have the form of an isosceles triangle.

3) Use sheets of paper or boxes and make isosceles triangular objects. Hang them in your classroom.

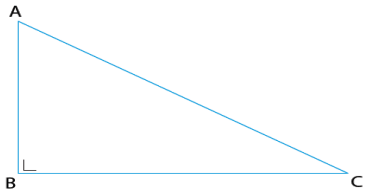
Application activity 11.3.3

List 2 objects which have the form of an isosceles triangle.

A right-angled triangle

Activity 11.3.4

1) Look at this triangle, measure the length of its sides, the values of its angles and compare them. What is the answer?



2) Find different objects in your classroom which have the form of a right-angled triangle.

3) Use sheets of paper or boxes and make right angled triangular objects. Hang them in your classroom.

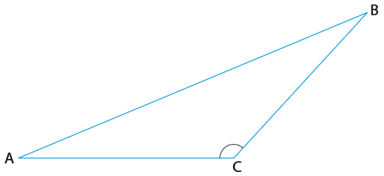
Application activity 11.3.4

List 2 objects which have the form of a right-angled triangle.

The scalene triangle

Activity 11.3.5

1) Look at this triangle, measure the length of its sides, the values of its angles and compare them. What is the answer?



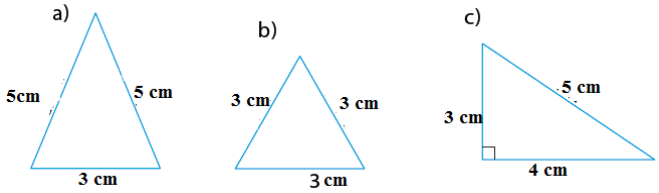
2) Find different objects in your classroom which have the form of a scalene triangle.

3) Use sheets of paper or boxes and make objects with the form of a scalene triangle. Hang them in your classroom.

4) List other objects which have the form of a scalene triangle.

Application activity 11.3.5

1) Name the following triangles



2) Fill in the blank spaces.

a. The sum of all angles of a triangle is equal to ___ degrees
b. The equilateral triangle has ___equal sides and ___ equal angles.
c. Each angle of an equilateral triangle measures ___ degrees.
d. A triangle with two equal sides is called ____triangle.
e. A triangle with one right angle is called ____
f. The isosceles triangle has ____ equal angles.

What have you learnt in this lesson?

1.3.3 The perimeter of a triangle

Activity 11.3.6

Draw any triangle. Measure the length of all sides.

Write down their measurements and add them.

Surround this triangle with a rope and measure its length.

Compare the length of the rope and the sum of all 3 sides.

Are they equal? How can you find the perimeter of a triangle?

Activity 11.3.7

Look at the following example and do the next activities.

Find the perimeter for a triangle with sides of 145 cm, 172 cm and 159 cm respectively.

Given	Question	Answer
• The first side: 145cm • The second side: 172 cm • The third side: 159 cm	Perimeter=?	• Perimeter = First side + second side + third side • Perimeter= 145 cm + 172 cm + 159 cm = 476 cm.

Try these.

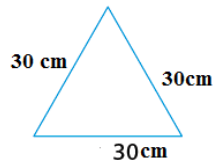
Find the perimeter for triangles whose sides measure the following:

a. 230 cm, 250 cm and 350 cm
b. 150 cm, 150 cm and 150 cm
c. 270 dm, 270 dm and 110 dm
d. 75 cm, 59 cm and 68 cm.

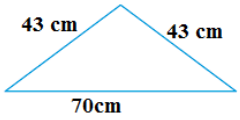
Application activity 11.3.7

Calculate the perimeter of the triangles below:

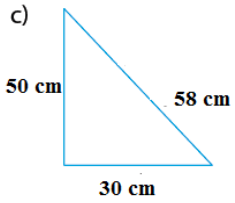
a)



b)



c)



What have you learnt in this lesson?

11.4 The circle

11.4.1 Characteristics of a circle.

Activity 11.4.1

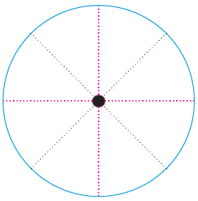
Look at the picture. Answer the following questions.

What are children doing? What are the characteristics of this geometric figure?

How can you draw it?

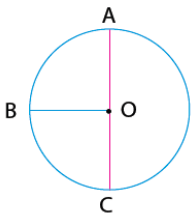
Activity 11.4.2

Look at this figure. What is its name? What are its characteristics?



Activity 11.4.3

1) Look at the **line segments** in the circle. How are they?



2) Do the following:

a. Use a pair of compass to draw a circle of radius 10cm. Explain how you do it.

b. Find in your classroom different objects which have a circle.

3) Complete these sentences:

a) The diameter is twice of _____

b) The radius is half of ___

c) Two times the radius give _____

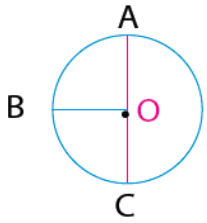
d) The point in the centre of a circle is called ___

e) The line segment which passes through the center and divides the circle into two equal parts is called_____

Application activity 11.4

Study the circle and answer questions that follow:

Name the following lines:



a) **OC** is_____

b) **OB** is _____

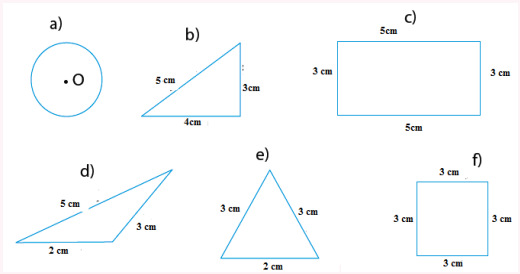
c) **AC** is _____

d) **OA** is _____

What have you learnt in this lesson?

End of unit assessment 11

1) Name the following geometric figures.



2) Draw the following:

a. Equilateral triangle with 16 cm of side.

b. The square with 13 cm of side.

c. A rectangle whose length is 20 cm and width is 10 cm.

d. A circle which has 8cm of radius.

3) Find the perimeter of:

a. The square with 135cm side

b. The rectangle which has 364 cm of length and 132 cm of width.

c. A triangle whose sides are: 605cm, 235 cm and 385 cm respectively.

4) Complete by True or False

a. A square has obtuse angles. _____

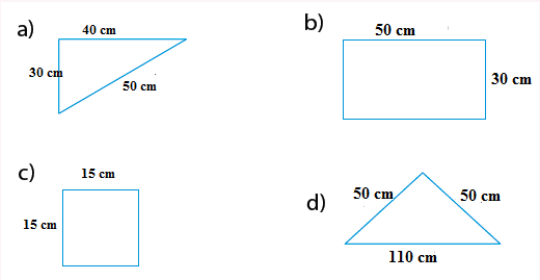
b. A rectangle has right angles. _____

c. The radius is greater than the diameter of the same circle. _

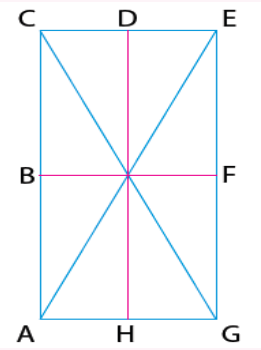
d. The center of a circle is a central point of that circle.

e. Isosceles triangle has 3 equal sides. _____

5) Calculate the perimeter of the following geometric figures:



6) Look at the following geometric figures with special line segments.



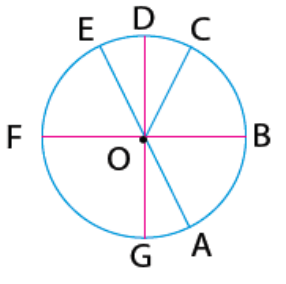
a) Name the following line segments and the figures formed:

1) AC is _____ 2) CG is _____

3) AG is _____ 4) BF is _____

5) AEG is _____ 6) HD is _____

7) GECA is _____ 8) CEA is _____



b) Name the following line segment:

1) AE is _____ 6) OA is _____

2) OB is _____ 7) OF is _____

3) FD is _____ 8) OE is _____

4) OC is _____ 9) DG is _____

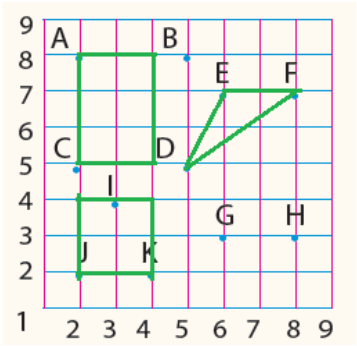
5) OD is _____ 10) OG is _____

UNIT

12 GRID

12.0 Introductory activity

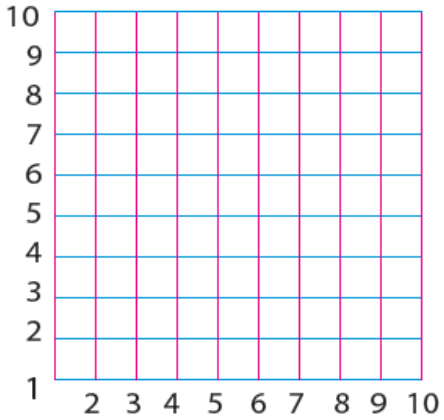
There is a competition on grids. I only know to draw lines of a grid. What do I need to learn so that I can participate and win the competition?



12.1 Characteristics of a grid

Activity 12.1.1

1) Look at the grid below, re-draw it, count and name all lines on the grid.



Horizontal lines are called crossing lines. Vertical lines are called posts.

a. How many crossing lines does the grid have?

b. How many posts does the grid have?

c. Show the post number 5, and the crossing line number 3.

Activity 12.1.2

Draw agrid with 8 crossing lines and 7 posts.

Application activity 12.1

Read and complete by: **crossing lines, posts, right side,** or **bottom**:

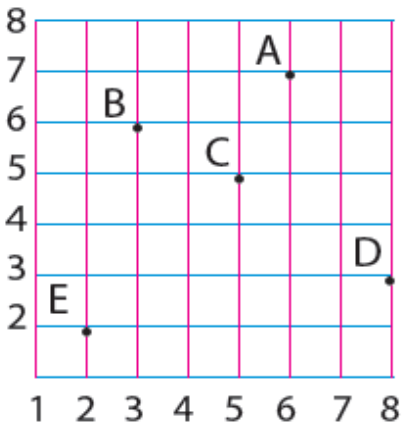
- A grid is made up with vertical lines (____) and horizontal lines (_____).
- The vertical lines are numbered from the left to the _____.
- The horizontal lines are numbered from _____ to top.

What have you learnt in this lesson?

12.2 Locating a point on a grid

Activity 12.2.1

1) Say where the following points are located: A, B, C, D and E



Example:

Point A is located at the vertical line number 6 and horizontal line number 7. We write A (6, 7)

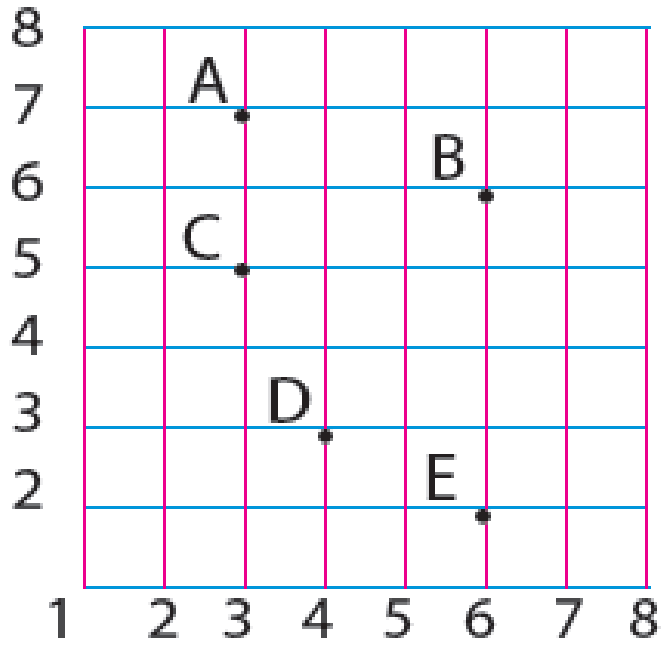
Point B is located at the vertical line number 3 and horizontal line number 6. We write B (3, 6).

2) Draw a grid made by 6 vertical lines and 6 horizontal lines and plot the following points:

A (2, 4) B (4, 3) C (3, 2).

Application activity 12.2

Read the given points from the grid and tell their location.



What have you learnt in this lesson?

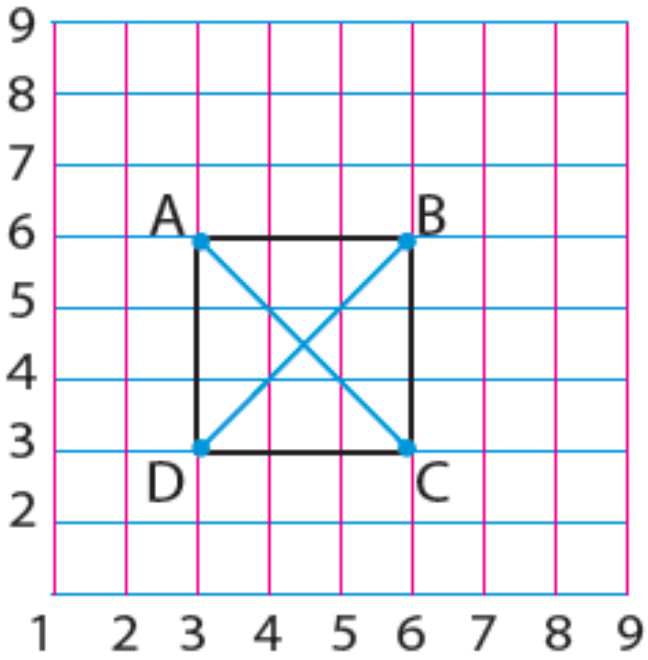
12.3 Plotting and joining points to form shapes in a grid

Square in a grid

Activity 12.3.1

1) Look at the grid.

Measure the sides of the shape in the grid. Name the shape.



2) Draw a grid of 10 vertical lines and 10 horizontal lines. Plot the following:

- Plot point A on the 3rd vertical line and the 2nd horizontal line.
- Plot point B on the 8th vertical line and the 2nd horizontal line.
- Plot point C on the 3rd vertical line and the 7th horizontal line.
- Plot point D on the 8th vertical line and the 7th horizontal line.
- Join points: A and C , D and B, C and D , A and B.

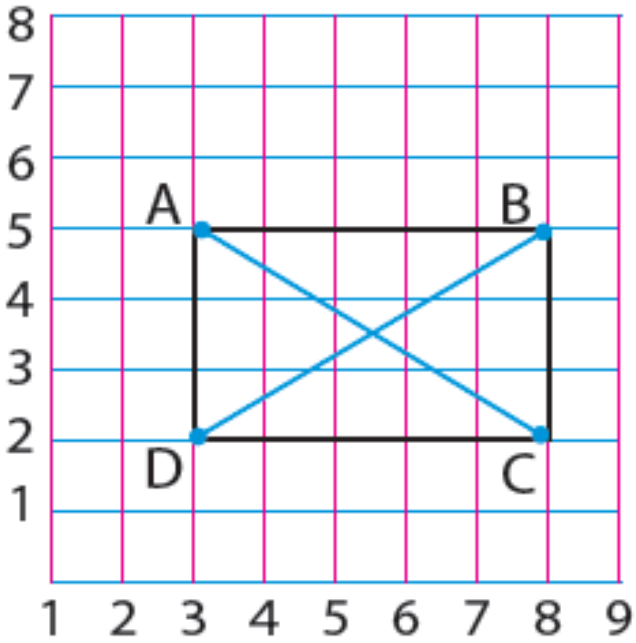
What is the name of the shape ABDC?

Rectangle in a grid

Activity 12.3.2

1) Look at the grid.

Measure the sides of the shape in the grid. Name the shape.



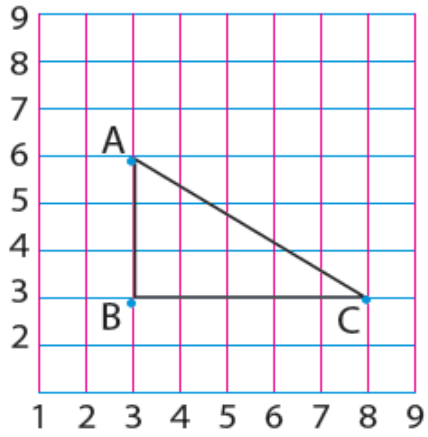
2) Draw a grid of 9 vertical lines and 9 horizontal lines and plot the following:

- Plot point A on the 3^{d} vertical line and the 3rd horizontal line.
- Plot point B on the 8th vertical line and the 3rd horizontal line.
- Plot point C on the 3^{d} vertical line and the 6th horizontal line.
- Plot point D on the 8th vertical line and the 6th horizontal line.
- Join points : A and C, D and B, C and D , A and B
- What is the name of the shape ABDC?

Triangle on a grid

Activity 12.3.3

1) Look at the grid. Count the number of sides of the shape on the grid and name the shape.



2) Draw a grid of 8 vertical lines and 8 horizontal lines and plot the following:

- Plot point A on the 6th vertical line and the 6th horizontal line.
- Plot point B on the 2nd vertical line and the 6th horizontal line.
- Plot point C on the 2nd vertical line and the 2nd horizontal line.
- Join points: A and B, A and C, C and B.
- What is the name of the shape ABC?

3) Draw a grid of 7 vertical lines and 7 horizontal lines

- Plot point A on the 6th horizontal line and 6th vertical line
- Plot point C on the 2nd horizontal line and 2nd vertical line
- Plot point B on the 6th vertical line and 2nd horizontal line.
- Join points C and B; B and A; C and A

Which type of triangle do you get?

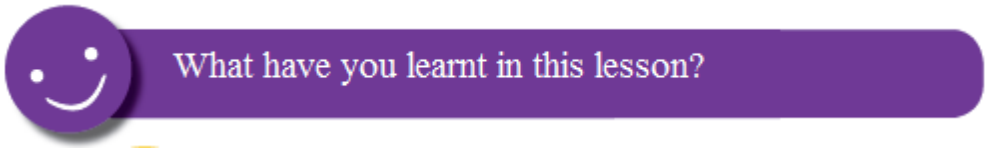
Application activity 12.3

1. Draw a grid of your choice (use your own number of vertical and horizontal lines), draw a square on it and then locate 4 main points of your square.

2. Draw a grid of your choice (use your own number of vertical and horizontal lines), draw a rectangle on it and then locate the 4 main points (vertices) of your rectangle.

3. Draw a grid of 10 vertical lines and 10 horizontal lines.

   Draw on it a triangle joining the following points: A (4, 6); B (2, 2); C (6, 2)



End of unit assessment 11

1) Study the following grid and mention the given points

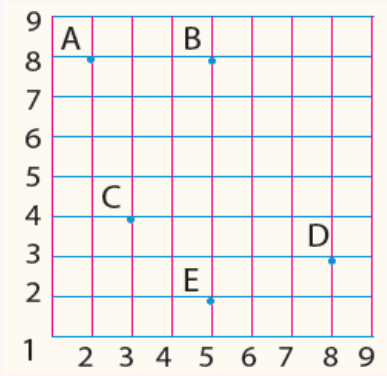
   A (___, ___)

   B (___, ___)

   C (___, ___)

   D (___, ___)

   E (___, ___)

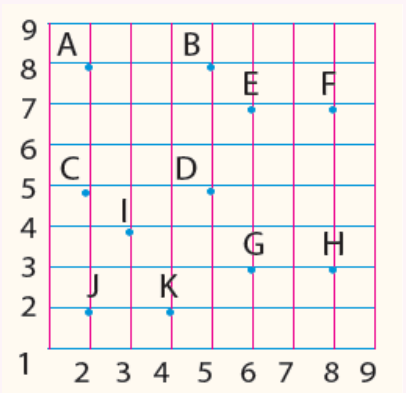


2) Find out different shapes after joining the following points

   a) A, B, C and D

   b) E ,F, G and H

   c) I, J and K



3) Draw a grid of 7 vertical lines and 7 horizontal lines and plot the following points : A (4, 3); B (2, 6); and C (5, 7). Join all points and name the shape you have formed.

UNIT 13

FINDING MISSING NUMBER IN ADDITION, SUBTRACTION, MULTIPLICATION AND DIVISION

13.0 Introductory activity

Mugenzi and Mugeni win the competition. They are asked to choose among the following gifts: 15 notebooks of 400 Frw each or 50 pens of 100 Frw each.

Mugeni chooses pens. Mugisha chooses notebooks.

Who takes the most valuable gift? Explain.

1.3.1 Finding missing numbers in the expression involving addition or subtraction

Finding missing numbers in the expression involving addition

Activity 13.1.1

Follow the given example and find the missing number in the expression with addition:

Example:

To find missing digit of term, I substract a given of another term from a digit of the sum

1)
$$\begin{array}{r} 2\bullet5 \\ +\ 16\bullet \\ \hline 398 \end{array}$$

$5 + \bullet = 8 \longrightarrow 8 - 5 = 3$

$\bullet + 6 = 9 \longrightarrow 9 - 6 = 3$

$\longrightarrow$
$$\begin{array}{r} 235 \\ +\ 163 \\ \hline 398 \end{array}$$

2)
$$\begin{array}{r} \bullet\ 3\bullet5 \\ +\ 1\ \bullet6\bullet \\ \hline 6\ 579 \end{array}$$

$5 + \bullet = 9 \longrightarrow 9 - 5 = 4$

$\bullet + 6 = 7 \longrightarrow 7 - 6 = 1$

$3 + \bullet = 5 \longrightarrow 5 - 3 = 2$

$\bullet + 1 = 6 \longrightarrow 6 - 1 = 5$

$\longrightarrow$
$$\begin{array}{r} 5\ 325 \\ +\ 1\ 264 \\ \hline 6\ 589 \end{array}$$

Try these.

1) **Complete**

a)
$$\begin{array}{r} 6\,3\bullet7 \\ +\ \bullet\ \bullet4\bullet \\ \hline 8\,749 \end{array}$$

b)
$$\begin{array}{r} \bullet\ 8\bullet5 \\ +\ \bullet\ 1\bullet4 \\ \hline 8\,049 \end{array}$$

c)
$$\begin{array}{r} 4\ \bullet8\bullet \\ +\ \bullet\ 5\bullet1 \\ \hline 9\,898 \end{array}$$

2) Find the missing numbers.

a)
$$\begin{array}{r} 7\ \bullet8\bullet \\ +\ \bullet\ 1\bullet2 \\ \hline 8\,796 \end{array}$$

b)
$$\begin{array}{r} 2\ \bullet43 \\ +1\,3\bullet6 \\ \hline \bullet\ 75\bullet \end{array}$$

c)
$$\begin{array}{r} \bullet\ 467 \\ +4\ \bullet\bullet\bullet \\ \hline 6\,798 \end{array}$$

Finding missing number in the expression involving subtraction

Activity 13.1.2

Complete the missing number.

Example:

1)
$$\begin{array}{r} 6\,543 \\ -\ 3\ 4\bullet\bullet \\ \hline 3\,131 \end{array}$$
6 543 ← First Number
– 3 4•• ← Second Number
3 131 ← Difference

I substract a given digit of difference from a digit of the first number

$$\begin{array}{r} 6\,543 \\ -\ 3\ 4\bullet\bullet \\ \hline 3\,131 \end{array}$$

3 – • = 1 → 3 – 1 = 2
4 – • = 3 → 4 – 3 = 1

$$\begin{array}{r} 6\,5\,4\,3 \\ -\ 3\,4\,1\,1 \\ \hline 3\,1\,3\,2 \end{array}$$

2)
$$\begin{array}{r} 7\ \bullet3\bullet \\ -\ 6\ 211 \\ \hline 3\,131 \end{array}$$
7 •3• ← First Number
– 6 211 ← Second Number
3 131 ← Difference

I add a given digit of difference to a digit of the second number

$$\begin{array}{r} 7\ \bullet3\ \bullet \\ -\ 6\ 211 \\ \hline 3\,131 \end{array}$$

• – 1 = 0 → 0 + 1 = 1
• – 2 = 3 → 3 + 2 = 5

$$\begin{array}{r} 7\ 5\,31 \\ -\ 6\,211 \\ \hline 1\,3\,20 \end{array}$$

Try these

1) Complete

a)
$$\begin{array}{r} 9\ \bullet6\bullet \\ -\ 8\ 132 \\ \hline 1\,430 \end{array}$$

b)
$$\begin{array}{r} 4\,321 \\ -2\ \bullet2\bullet \\ \hline 2\,2\bullet1 \end{array}$$

c)
$$\begin{array}{r} 7\,767 \\ -3\ \bullet\bullet5 \\ \hline 4\,322 \end{array}$$

2) Find the missing numbers in subtraction.

a)
$$\begin{array}{r} 2\,130 \\ -\,1\,\bullet 2\bullet \\ \hline 1\,010 \end{array}$$

b)
$$\begin{array}{r} 6\,\bullet\bullet 1 \\ -\,3\,420 \\ \hline 3\,201 \end{array}$$

c)
$$\begin{array}{r} \bullet\,456 \\ -\,4\,\bullet\bullet 5 \\ \hline 4\,321 \end{array}$$

Application activity 13.1

1) Find the missing numbers.

a)
$$\begin{array}{r} 6\,\bullet 4\bullet \\ +\,\bullet\,4\bullet 2 \\ \hline 9\,745 \end{array}$$

b)
$$\begin{array}{r} 4\,\bullet 67 \\ +\,\bullet\,4\bullet\bullet \\ \hline 6\,798 \end{array}$$

c)
$$\begin{array}{r} \bullet\,456 \\ +\,4\,5\bullet\bullet \\ \hline 7\,\bullet 79 \end{array}$$

2) Find the missing numbers

a)
$$\begin{array}{r} 6\,6\,9\,4 \\ -\,1\,3\bullet\bullet \\ \hline 5\,3\,2\,0 \end{array}$$

b)
$$\begin{array}{r} 2\,7\,9\,9 \\ -\,\bullet\,\bullet\,\bullet\,\bullet \\ \hline 1\,5\,4\,0 \end{array}$$

c)
$$\begin{array}{r} \bullet\,\bullet\,\bullet\,\bullet \\ -\,1\,4\,5\,2 \\ \hline 2\,3\,2\,1 \end{array}$$

What have you learnt in this lesson?

13.2 Finding missing number in the expression involving multiplication or division

Finding missing number in the expression involving multiplication or division

Activity 13.2.1

Find the missing numbers

Example: $7 \times \bullet = 1638 \rightarrow 1638 \div 7 = 234 \rightarrow 7 \times 234 = 1638$

$$\begin{array}{r} 234 \\ 7\overline{)\,1638} \\ -14 \\ \hline 023 \\ -21 \\ \hline 028 \\ -28 \\ \hline 00 \end{array}$$

a) $4 \times \bullet = 1000$

b) $\bullet \times 5 = 8050$

c) $\bullet \times 7 = 6615$

d) $9 \times \bullet = 5076$

e) $8 \times \bullet = 6312$

f) $6 \times \bullet = 5922$

Try these

1) Complete

a) $4 \times \bullet = 1000$

b) $\bullet \times 5 = 8050$

c) $\bullet \times 7 = 6615$

d) $9 \times \bullet = 5076$

e) $8 \times \bullet = 6312$

f) $6 \times \bullet = 5922$

2) Find the missing numbers

a)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\bullet \\ \times\ 9 \\ \hline 1\,3\,8\,6 \end{array}$$

b)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\ \bullet \\ \times\ 8 \\ \hline 2\,5\,9\,2 \end{array}$$

c)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\ \bullet \\ \times\ 9 \\ \hline 4\,0\,5\,9 \end{array}$$

Finding missing numbers in the expression involving division

Activity 13.2.2

Activity13.2.2

Find the missing numbers:

Example:

To find the divisor, I divide the dividend by the quotient

$450 \div \bullet = 9 \rightarrow 450 \div 9 = 50$

Dividend, Divisor, Quotient

To find the dividend, I multiply the quotient by the divisor

$\bullet \div 5 = 245 \rightarrow 245 \times 5 = 1225$

Dividend, Divisor, Quotient

Try these:

1) Complete

a) • ÷ 5 = 350 d) 147 ÷ • = 7 g) 9672 ÷ • = 3

b) 360 ÷ • = 4 e) • ÷ 6 = 91 h) 9819 ÷ • = 9

c) • ÷ 8 = 120 f) 225 ÷ • = 3 i) • ÷ 586 = 9

2) Find the missing numbers:

a) • ÷ 6 = 45 d) 8795 ÷ • = 45

b) • ÷ 5 = 89 e) • ÷ 9 = 818

c) • ÷ 4 = 125 f) 9534÷ • = 6

Application activity 13.2

1) Find the missing numbers

a)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\bullet \\ \times\ \ 4 \\ \hline 9\ 5\ 8\ 4 \end{array}$$

b)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\ \bullet \\ \times\ \ 3 \\ \hline 9\ 8\ 6\ 7 \end{array}$$

c)
$$\begin{array}{r} \bullet\ \bullet\ \bullet\ \bullet \\ \times\ \ 2 \\ \hline 9\ 7\ 9\ 4 \end{array}$$

2) Find the missing numbers:

a) 8795 ÷ • = 5 b) • ÷ 9 = 818 c) 9534 ÷ • = 6

What have you learnt in this lesson?

13.3 The concept of equality

13.3.1 Equality involving addition or subtraction

Equalities involving addition:

Activity 13.3.1

Explain the steps of finding the missing numbers.

Example:

a) $100 + 25 = 90 + \bullet$ → $(100 + 25) - 90 = 35$
→ $100 + 25 = 90 + 35$

b) $45 + \bullet = 40 + 60$ → $(40 + 60) - 45 = 55$
→ $45 + 55 = 40 + 60$

c) $75 + 30 = \bullet + 25$ → $(75 + 30) - 25 = 80$
→ $75 + 30 = 80 + 25$

d) $\bullet + 90 = 270 + 80$ → $(270 + 80) - 90 = 260$
→ $260 + 90 = 270 + 80$

Try these:

1) Complete

a) $80 + 30 = 50 + \bullet$

b) $150 + \bullet = 200 + 45$

c) $265 + 35 = 250$

d) $479 + 51 = 350 + \bullet$

2) Find the missing numbers

a) $913 + 97 = 803 + \bullet$

b) $\bullet + 575 = 195 + 875$

c) $\bullet + 597 = 987 + 519$

d) $825 + 795 = \bullet + 658$

Equalities involving subtraction

Activity 13.3.2

Find the missing number.

Example:

a) $\bullet - 95 = 180 - 25$ → $(180 - 25) + 95 = 250$
→ $250 - 95 = 180 - 25$

b) $145 - \bullet = 175 - 65$ → $175 - 65 = 110$
→ $145 - 110 = 35$

c) $375 - 178 = \bullet - 265$ → $(375 - 178) + 265 = 462$
→ $375 - 178 = 462 - 265$

Try these:

a) 235 – 45 = 540 – •

b) 725 – • = 600 – 10

c) 430 – 180 = 320 – •

d) 978 – • = 763 –220

Activity 13.3.3

1) Find the missing number

a) 685 – 175 = 1380 – •

b) 185 – • = 485 – 375

c) • – 459 = 897 – 319

d) • – 975 = 1 785 – 995

2) Find the missing number:

a) 456 – • = 564 – 298

b) 975 – • = 721 – 432

c) • – 345 = 856 – 534

d) • – 548 = 729 – 509

Application activity 13.3

1) Find the missing numbers in the following equality.

a) 1758 + • = 1 526 + 954

b) • + 575 = 215 + 758

c) 1 546 + 647 = • + 985

d) 2 801 + 1 267 = 2 567 + •

2) Find the missing number:

a) 765 - 348 = • - 205

b) 1284 - 978 = • - 725

c) 1 567 - 1 198 = 2 018 - •

d) 1 453 - 832 = 1 519 - •

What have you learnt in this lesson?

13.3.2 Equality involving multiplication or division

Equality involving multiplication

Activity 13.3.5

Explain steps of finding the missing numbers

Example:

a) $6 \times 5 = \bullet \times 3 \longrightarrow 6 \times 5 = 30 \longrightarrow 30 \div 3 = 10$

b) $4 \times 12 = 8 \times \bullet \longrightarrow 4 \times 12 = 48 \longrightarrow 48 \div 8 = 6$

c) $3 \times \bullet = 20 \times 6 \longrightarrow 20 \times 6 = 120 \longrightarrow 120 \div 3 = 40$

d) $\bullet \times 9 = 45 \times 4 \longrightarrow 45 \times 4 = 180 \longrightarrow 180 \div 9 = 20$

Try these:

1) Find the missing number

a) $9 \times 18 = 6 \times \ldots$

b) $36 \times 4 = 9 \times \ldots$

c) $\bullet \times 7 = 49 \times 3$

d) $\bullet \times 5 = 75 \times 8$

2) Find the missing numbers:

a) $25 \times 8 = \bullet \times 2$

b) $45 \times 8 = 6 \times \bullet$

c) $125 \times 4 = \bullet \times 5$

d) $\bullet \times 9 = 27 \times 45$

Equality involving division

Activity 13.3.6

Example:

a) $\bullet \div 5 = 225 \div 3 \longrightarrow 225 \div 3 = 75 \longrightarrow 75 \times 5 = 375$

b) $120 \div \bullet = 45 \div 9 \longrightarrow 45 \div 9 = 5 \longrightarrow 120 \div 5 = 24$

c) $225 \div 9 = \bullet \div 8 \longrightarrow 225 \div 9 = 25 \longrightarrow 25 \times 8 = 200$

d) $72 \div 9 = 64 \div \bullet \longrightarrow 72 \div 9 = 8 \longrightarrow 64 \div 8 = 8$

Try these.

1) Find the missing number

a) $824 \div 8 = \bullet \div 4$

b) $\bullet \div 9 = 2016 \div 4$

c) $945 \div 9 = \bullet \div 3$

d) $\bullet \div 7 = 2\,020 \div 5$

2) Find the missing numbers in the following equalities

a) $808 \div 8 = \bullet \div 4$

b) $\bullet \div 7 = 175 \div 5$

c) $918 \div 9 = \bullet \div 3$

d) $\bullet \div 5 = 992 \div 8$

Application activity 13.3.3

1) Find the missing numbers:

a) • × 7 = 35 × 84

b) 105 × 89 = 5 × •

c) 3 × • = 76 × 9

d) 5 × • = 138 × 65

2) Find the missing numbers:

a) • ÷ 9 =1950 ÷ 6

b) • ÷ 8 = 436 ÷ 4

c) 2464 ÷ 8= • ÷ 9

d) 12 ÷ 4 = 9 ÷ •

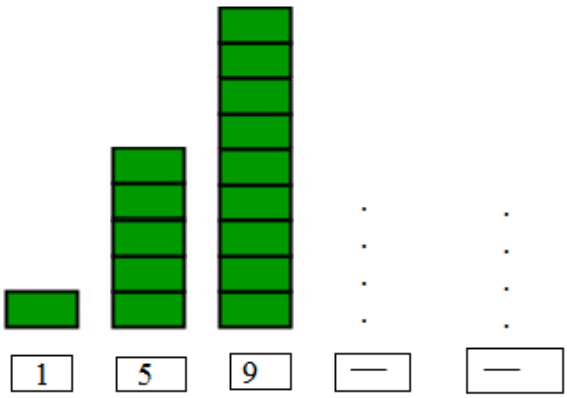
What have you learnt in this lesson?

13.6 Finding the common difference in number patterns.

13.6.1 The common difference in ascending (increasing) number pattern

Activity 13.6.1

Look at the piles of small blicks.



a) What is the number of bricks for the two next piles?

b) The number of blicks you add to the pile you have to find the number of blicks for the next pile is a common difference. What is the common difference for the pattern of blicks?

c) Complete the number pattern of blicks: 1, 5, 9, ___, ___.

Activity 13.6.2

Find the common difference in the increasing number pattern.

Example:

a) 1 250, 1 300, 1 350, 1 400 ⟶ (1300 - 12500) = 50

(1350 - 1300) = 50 and (1400 - 1350) = 50 the common difference is 50

b) 2 400, 2 500, 2 600, 2 700 ⟶ (2 500 - 2400) = 100

(2 600 - 2500) = 100 and (2 700 - 2 600) = 100 the common difference 100

Try these:

1) Find the common difference

a) 855, 1 355, 1 855 b) 205, 505, 805, 1 105

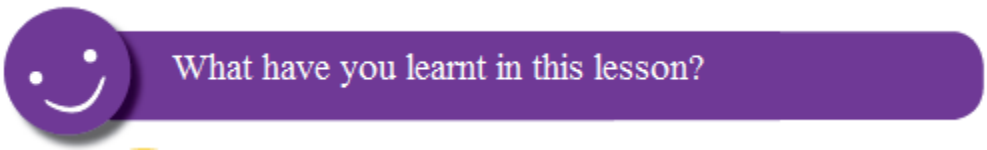
2) Find the common difference for the following number patterns

a) 295, 333, 371, 409 b) 178, 299, 420, 541

Application activity 13.6.1

Find the common difference for the following number patterns

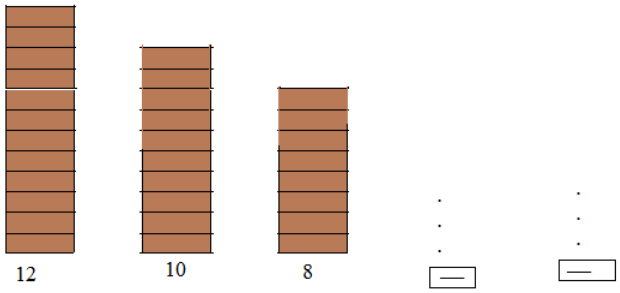
a) 397, 630, 863, 1 096 b) 524, 700, 876, 1 052



13.6.2 The common difference in a descending (decreasing) number pattern

Activity 13.6.3

Look at the piles of small blicks.



a. What is the number of blicks for the two next piles?

b. The number of blicks you subtract from the pile you have to find the number of blicks for the next pile is a **common difference**. What is the common difference for the pattern of blicks?

c. Complete the number pattern of bricks: 12,10, 8, ___, ___.

Activity 13.6.4

Find the common difference in the decreasing number pattern.

Example:

a) 324, 270, 216, 162 → (324 - 270) = 54
(270 - 216) = 54
(216 - 162) = 54

Commom difference is 54

b) 153, 125, 97, 72 = → (153 - 125) = 28
(125 - 97) = 28
(97 - 72) = 28

Commom difference is 54

Try these:

1) Find the common difference

a) 2 456, 2 306, 2 156

b) 1 890, 1 751, 1 612

c) 4 032, 3 957, 3 882

d) 2 476, 3 000, 3 524

2) Find the common difference for the following number patterns in descending order

a) 2 018, 1 653, 1 288, 923

b) 956, 878, 800, 722

Application activity 13.6.2

Find the common difference for the following number patterns

a) 1 519, 1 470, 1 421

b) 976, 937, 898, 859

c) 789, 691, 593, 495

What have you learnt in this lesson?

13.6.3 Finding the missing number in a number pattern

Activity 13.6.5

Find the missing numbers in the following number pattern.

Example: 3456, 3567, 3678, ___, ___,

I remember that:

- for ascending number patern, to get next term, I add common difference to previous.
- For descending number pattern, I subtract the common difference from the previous term.

The common difference
3567-3456 = 111; 3678-3567 = 111.
The common difference is 111.
The next number= 3678+111= 3789.
The next number=3789+111= 3900.
Number pattern is:
3456, 3567, 3678, 3789, 3900.

Try these

a. a4256, 4365, 4474, ___, ___,___

b. 1994, 2018, 2042, ___,___,___

c. 1 897, 1 950, 2 003, _____, _____, _____

d. 7 564, 6 614, 5 664, _____, _____, _____

e. 4 000, 4 500, 5 000, _____, _____, _____

f. 3 480, 3 505, 3 530, _____, _____, _____

Application activity 13.6.3

Complete the missing number for the following number pattern:

a) 5 469, 4 679, 3 889, ____, ____, ____

b) 4 325, 3 875, 3 425, ____, ____, ____

What have you learnt in this lesson?

End of unit assessment 13

1) Find the missing numbers

a)
$$\begin{array}{r} 1\,787 \\ +\,6\,\bullet 1\bullet \\ \hline 7\,899 \end{array}$$

b)
$$\begin{array}{r} \bullet\,\bullet\bullet\bullet \\ \times\ 9 \\ \hline 2\,187 \end{array}$$

c)
$$\begin{array}{r} 4\,3\bullet\bullet \\ +\,\bullet\ \bullet 41 \\ \hline 8\,296 \end{array}$$

d)
$$\begin{array}{r} \bullet\,\bullet\bullet\bullet \\ \times\ 8 \\ \hline 1\,264 \end{array}$$

e)
$$\begin{array}{r} 7\,\bullet\bullet 6 \\ -\,1\,534 \\ \hline \bullet\,42\bullet \end{array}$$

f)
$$\begin{array}{r} \bullet\,\bullet\bullet\bullet \\ \times\ 6 \\ \hline 1\,074 \end{array}$$

g)
$$\begin{array}{r} 2\,9\bullet\bullet \\ -\,1\,376 \\ \hline 1\,611 \end{array}$$

h) $\bullet \div 4 = 903$

i) $\bullet \div 5 = 315$

j) $\bullet \div 2 = 839$

k) $\bullet \div 6 = 221$

2) Fill in the blanks with the missing number

a) $100 + 50 = 80 + \bullet$.

b) $525 - \bullet = 400 - 75$

c) $978 - \bullet = 763 - 220$

d) $9 \times 8 = 18 \times \bullet$

e) $25 \times 2 = 60 \times \bullet$

f) $728 \div 8 = \bullet \div 4$

3) Find the common difference in the following number pattern

a) 234, 215, 196

b) 745, 1 000, 1 255

c) 834, 755, 676

d) 467, 431, 395

e) 945, 882, 819

f) 689, 713, 737

4) Find the missing terms in the following number patterns

a) 1 250, 1 750, ____, ____, ____

b) 3 400, 3 100, ____, ____, ____

c) 2 525, 3 025, ____, ____, ____

UNIT

14 PICTOGRAPHS

14.0 Introductory activity

My father has a shop. He sells cars. Last time, my brother Gatoki and I, visited my father's shop.

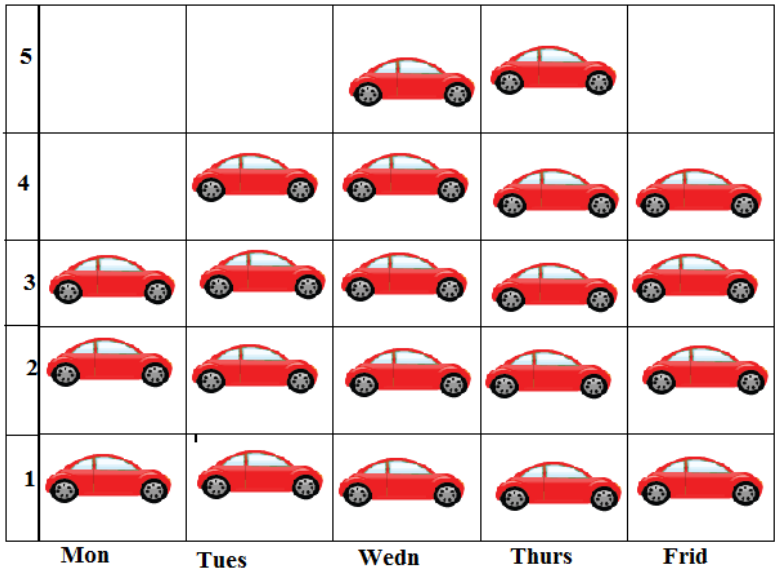
We looked in the book that my father completes every day.

There are pictures with cars.

There are days from Monday to Friday.

My brother Gatoki said that those pictures are for decollation.

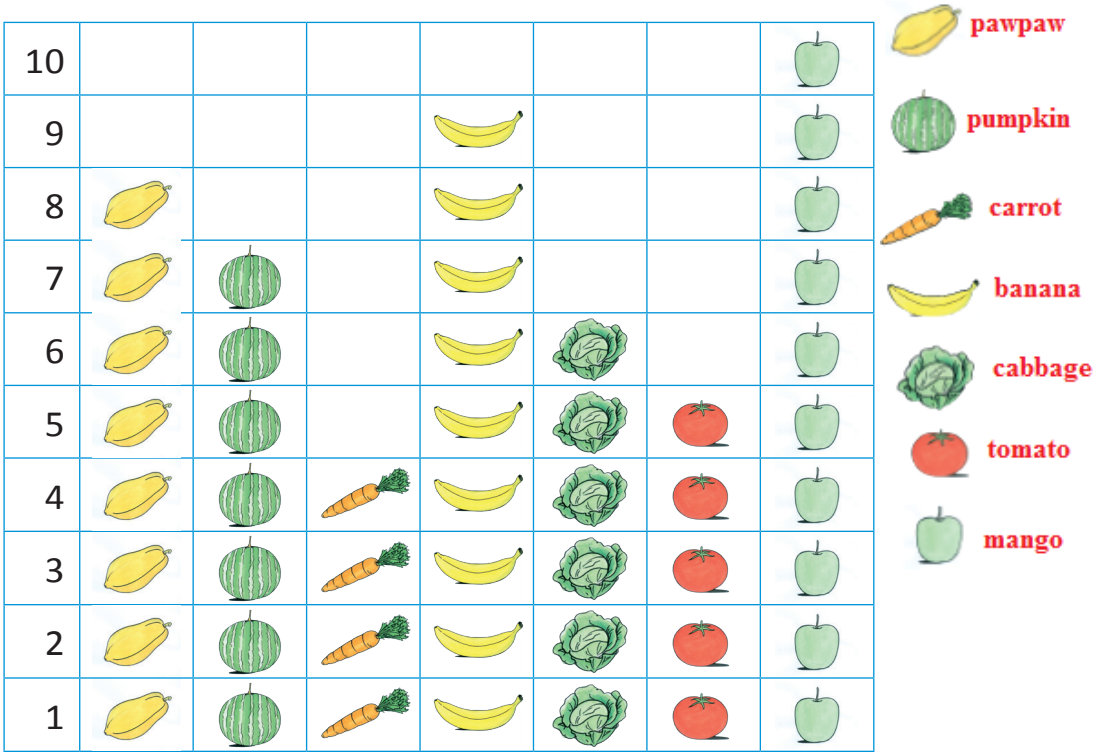
Do you think that Gatoki is right?



14.1 Number of objects on a pictograph

Activity 14.1.1

1) Look at the picture. Name different groups of objects and tell the number of objects for each group.



2) Read and complete by **True** or **False**:

a. Different columns have different types of objects. _____

b. The number of each type of objects is counted upwards (from bottom to top). ____

c. The types of objects are counted horizontally. _____

d. The number of types of objects equals to the number of columns with objects._____

Application activity 14.1.1

Look at the following pictograph. There are toothbrushes, jugs, paint brushes, pumpkins, pineapples and avocados. Name groups of objects and write down their numbers.

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

What have you learnt in this lesson?

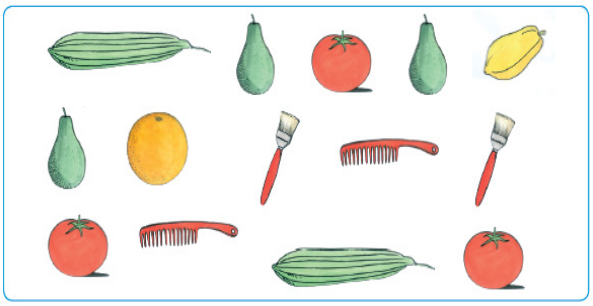
14.2 Representation of objects on a pictograph

Activity 14.2.1

Look at the following pictures.

Group objects according to their type.

Then, put them on the following pictograph.



11							
10							
9							
8							
7							
6							
5							
4							
3							
2							
1							

Activity 14.2.2

Look at the pictograph. Name groups of objects and find out the number of each type: *yellow sweaters, green sweaters, jackets, skirts, trousers, dresses and brushes.*

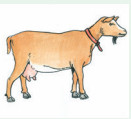
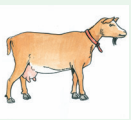
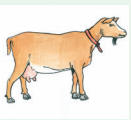
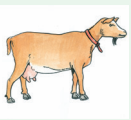
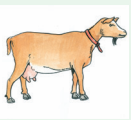
Example: There are **4 yellow sweaters** on pictograph A.

A.

8							
7							
6							
5							
4							
3							
2							
1							

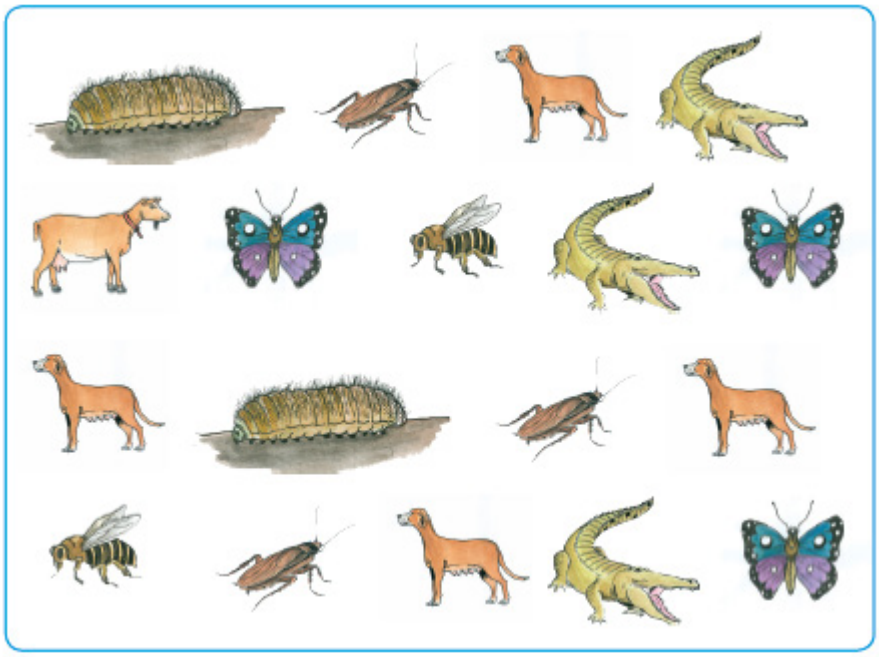
There are **cateripillars, bees, goats, butterflies, cockroaches, crocodiles and dogs**.

B.

9							
8							
7							
6							
5							
4							
3							
2							
1							

Activity 14.2.3

Draw a pictograph using the following animals: **cateripillars, bees, goats, butterflies, cockroaches, crocodiles and dogs.**



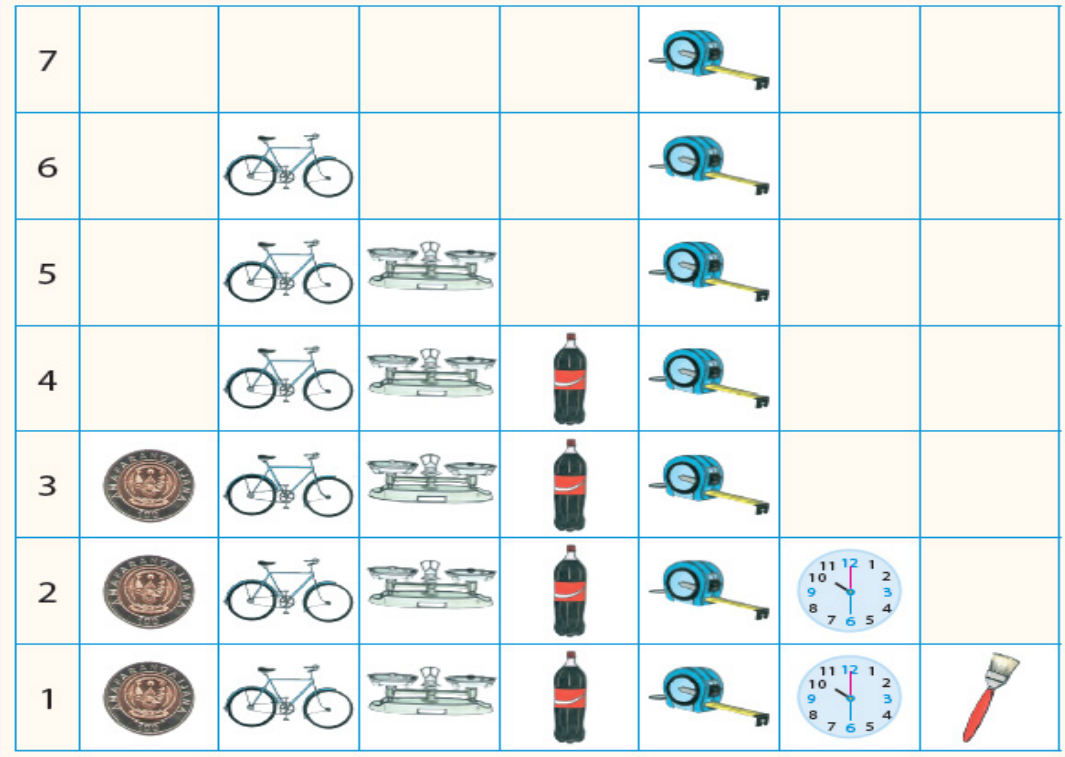
Application activity 14.2

Draw a pictograph with the following objects: **skirts, green blouses, trousers, yellow blouses, jackets, paintbrushes and dresses.**

What have you learnt in this lesson?

End of unit assessment

1. Draw 5 different types of objects found at home and place them on a pictograph.
2. Draw 5 different types of objects found at school and place them on a pictograph.
3. Count all objects you find in the classroom and show their number on a pictograph.
4. Observe the pictograph with the following objects: coins, bicycles, balances, bottles, tape measures, clock faces and the paintbrush. Name groups of objects and find out their numbers.



Example: There are 3 coins

REFERENCES

1. Rwanda Education Board (2015). Mathematics Syllabus for lower primary P1-P3. Ministry of Education, Kigali.

2. Rwanda Basic Education Board (2020). Mathematics book for P3, Pupil's book. Ministry of Education, Kigali.

3. Allen R (2004). Intermediate Algebra for College Students, Pearson Education, Inc, New Jersey.

4. Rwanda Basic Education Board (2020). TMP for Mathematics teaching in TTC. Ministry of Education, Kigali.

5. Killen, R. (1998) Effective Teaching Strategies (2nd ed) Social Science Press, Australia.

6. Schoenfeld, Alan H. (1985). Mathematical Problem Solving. New York: Academic Press, Inc.

7. Ministry of Education, Singapore (2012).Curriculum planning and development division, Learning Mathematics in a 21st century necessity.

8. Jacques Douaire, Fabien Emprin. Teaching geometry to students (from five to eight years old). Konrad Krainer; Naďa Vondrová. CERME 9 - Ninth Congress of the European Society for Research in Mathematics Education, Feb 2015, Prague, Czech Republic. PP 529-535,

10. Ministry of Education 2007, Curriculum Planning and Development Division, "Primary Mathematics syllabus" Singapore

11. Sahid, Seameo Qitep in Mathematics Yogyakarta 2011, Mathematics Problem Solving and Problem-Based Learning for Joyful Learning in Primary Mathematics Instruction, Indonesia

12. NZABARIRWA, W. et al (2010). Theory and practice of teaching, Kigali: KIE, module 2.

13. Reddy K. (2019). Teaching How to Teach: Microteaching (A Way to Build up Teaching Skills), Gandaki Medical College & Teaching Hospital, Pokhara, Nepal.

14. DEANIELSON Charlotte, and HANSEN Pia ,(1999) A collection of performance tasks and rubrics, Primary School Mathematics Publication (First edition): Eye on Education, USA.