Lesson notes for primary two 2020 Term I mathematics topical breakdown for P.2

- 1. Sets
 - i) Naming sets
 - ii) Drawing sets
 - iii) Matching sets
 - iv) Comparing sets
 - v) Ordering sets
 - vi) Subsets
 - vii) Intersection set
 - viii) Empty sets
 - ix) Joining (addition sets
 - x) Subtraction of sets
- 2. Numeration system and place values
- i) Drawing tens and ones
- ii) Filling in tens and oens
- iii) Showing tens and ones on the abacus
- iv) Drawing hundreds, tens and ones
- v) Filling in hundreds , tens and ones
- vi) Finding place values of the given number
- vii) Expanded form
- 3. Operation of number s
 - Addition of tens and ones
 - ii) Addition of hundreds, tens and ones
 - iii) Word statements
 - iv) Addition of numberline
- 4. Multiplication
 - i) Multiplication as repeated addition
 - ii) Multiplying two digit numbers by one digit number
 - iii) Word statements in multiplication
- 5. Subtraction
 - i) Subtraction of tens and ones
 - ii) Subtraction of hundreds, tens and ones
 - iii) Word statements
 - iv) Subtraction using a number line
- 6. Number sequence
 - i) Counting in ones
 - ii) Counting in twos

- iii) Counting in threes
- iv) Counting in fours
- v) Counting in fives
- vi) Counting tens
- 7. Graphs
- i) picto graph
- ii) bar graphs

Geometry Shapes

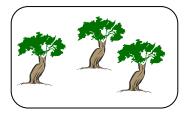
- a) Naming shapes
- b) Drawing shapes
- c) Matching shapes
- d) Colouring shapes

Theme 1: Our school and neighbourhood

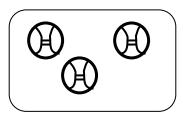
Content: sets

What is a set? A set is a collection of things or objects.

Naming sets A set of trees



A set of balls

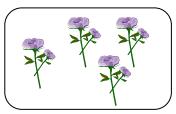


This is an empty set

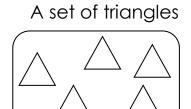


Drawing of sets

A set of four flowers

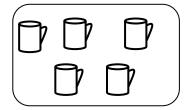


A set of six rulers

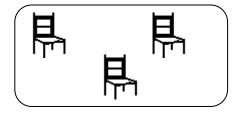


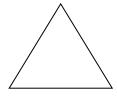
Drawing sets

A set of cups



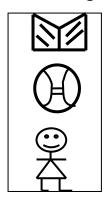
A set of 3 chairs

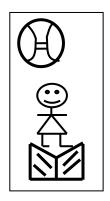


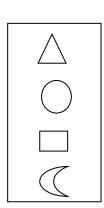


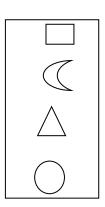
_set

Matching sets

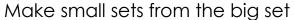


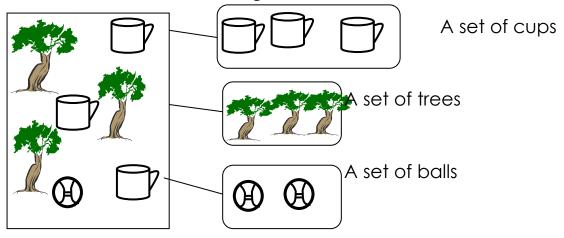


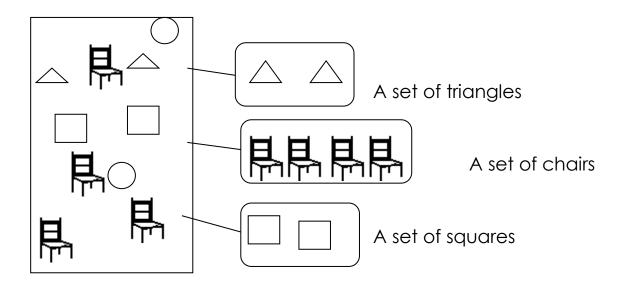




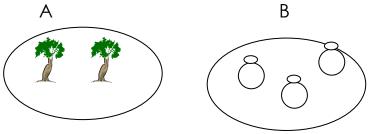
3+2 2+2 3+3 4 5 6

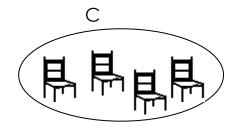






Comparing sets





- a. Set A has two members
- b. Set B has three members
- c. Set C has four members
- d. Set A has less members than set B
- e. Set B has more members than set A
- f. Set C has more members than set B

g. Set A and B have five members altogether

h. Set B and C have seven members altogether

Ordering sets

We order sets according to number of members in any given set.

Sets can be ordered in the following ways;

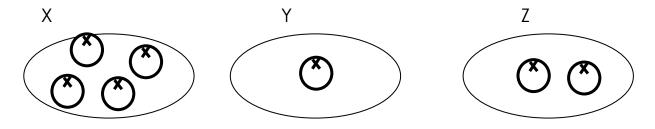
a) Ascending order

We start with a set with fewer members so that with more members. (use ordinal nos.)

$$6^{th}$$
 sixth 5^{th} fifth 4^{th} fourth 3^{rd} third 2^{nd} second 1^{st} first

Example

Arrange the given sets in ascending order



Set Y comes first (1st)

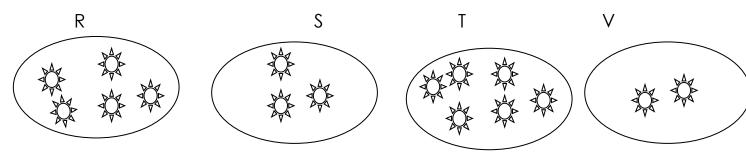
Set Z comes second (2nd)

Set X comes third (3rd)

Descending order

We start with a set with more members to that with fewer members

Arrange these sets in descending order (from biggest to the smallest)



Set T comes first (1st)

Set R comes second (2nd)

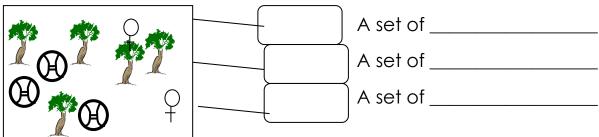
Set S comes third (3rd)

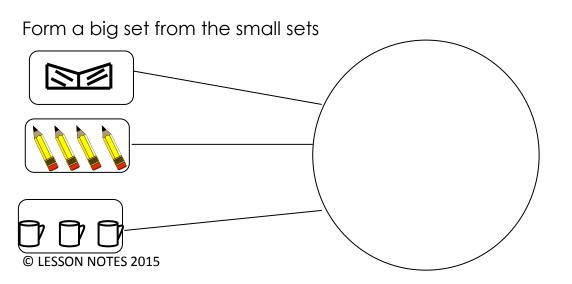
Set V comes fourth (4th)

Subsets

What is a subset?

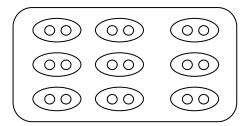
This is a small set got from a big set





Ringing or grouping sets

Ring sets of twos.



How many groups have you formed?

How many members are in each sub set?

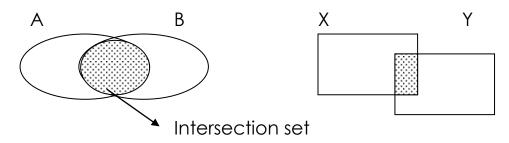
How many members are there altogether?

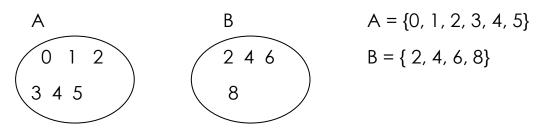
NB: a teacher can ring in threes, fours, fives etc.

The intersection set

This is the set where we write the common members

Example of intersection areas (common parts)





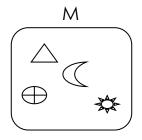
List down the common members

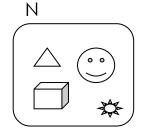
$$A \cap B = \{2, 4\}$$

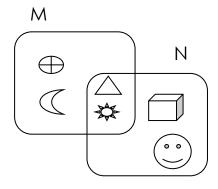
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How many members are in the intersection set or common parts? Two members

Representing the information on the venn diagram



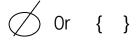




Empty sets

An empty set is a set with out or with no members

The symbols of an empty set are



More examples of empty sets

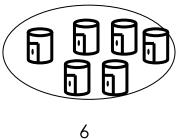
A set of boy with four legs

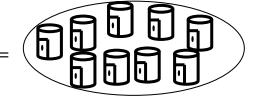
A cow with three eyes

A girl with two heads

Another name for empty set is null set.

Joining or adding sets





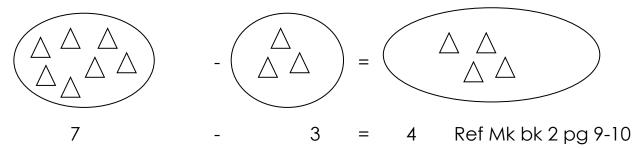
__

3 =

9

ref. bk 2 pg 8

Subtraction of sets



Topical revision of sets

Numeration system and place values

Review of primary one work i.e. counting orally from zero to fifty

Write number names from 0-50

(NB: mind the spellings)

Review of counting from 50 – 100 (in tens)

Write number names from 50 - 100

Counting from 100-200

Write in hundreds from 100 - 900

NB: these can be 3-4 lessons)

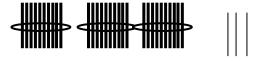
Tens and ones

The teacher should draw ten sticks to show one bundle of tens e.g.

= 24

IIIIIIIII = IIIIIIII = 1 bundle of tens





3 tens 5 ones = 35

Draw tens and ones

e) 0 tens 8 ones

f) 5 tens and 5 ones

h) 6 tens and 3 ones

Fill in the missing numbers

T O =

1 4 1 tens 4 ones

T O

5 6 ____tens ____ones

T O

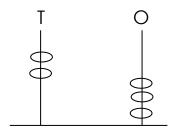
7 8 ____tens ____ones

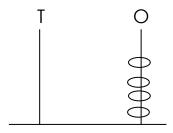
T O

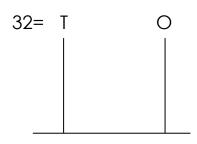
8 0 tens ones

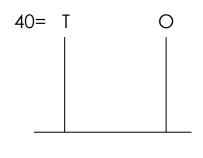
Fill in the missing numbers

Find the number of the abacus

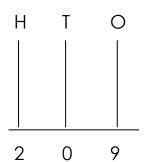


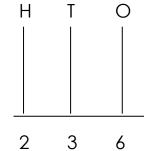


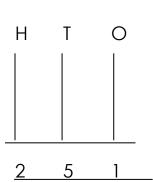


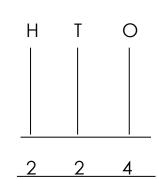


Show each of the numbers on the abacus









Write place value for each digit

- 1. 1
- 3
- 4

2. 7 1

Ones Tens

tens

6

ones

Hundreds

hundreds

- 3. 46
- 4. 702
- 5. 23
- 6. 812
- 7. 93
- 8. 06

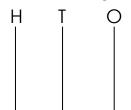
Write the place values of the circled numbers

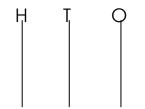
- 1. 1
- (
 - 9)
- 3 = tens
- 2. 7
 - /
- = ones
- 3.
- 4
- Ó
- 6 = ____

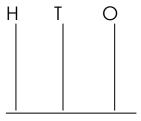
- 4.
- 2
- 1)
- 6 = ____

- 5.
- 4

Show the given number on the abacus







- 3 0 2
- = 321
- =240

Expanded form

Expand these numbers

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What number has been expanded?

$$13 = 10 + 3$$

$$30 = 30 + 0$$

Operation of numbers

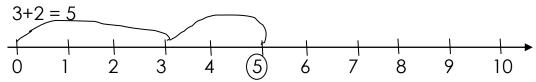
Addition

Word statements

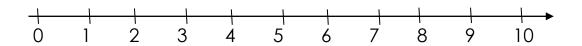
Dora has 24 pens. Daddy gave her more 10 pens. How many pens does she have altogether?

NB: The teacher should emphasize the key words in the statements Ref: Mk bk 2 page 35

Adding using a numberline



4+4=8



NB: Teachers should discourage learners from jumping.

Multiplication

Multiplication as repeated addition

$$3 \times 2 = 6$$

$$3 \text{ twos} = 6$$



NB: Continue with 3,4,5 etc

Multiply tow digit numbers by one digit number.

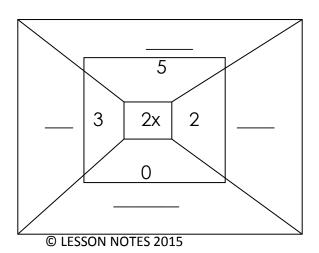
Multiply by (2, 3, 4, 5)

2	3
Χ	2

Word statements about multiplication.

One hen has two legs. How many legs have four hens.

NB: Teacher should give more examples.



3	0	2	3	4
Χ		6		

Subtraction

Ten balls – six balls =

10 balls - 6 balls = ____ balls

22 eggs - 11 eggs = ____eggs

Subtraction of two and three digit numbers but without regrouping.

NB: Use the knowledge of place values to re-arrange the figures

3 6

0 4

55 - 40

5 5

6

4 0

8 2 4 - 2 1

3

9

0 4

7

2

7 0 2

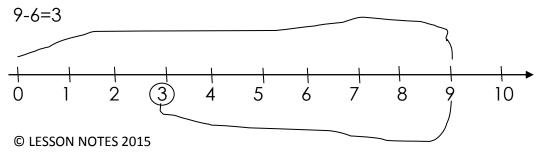
Word statements

- Sixteen takeaway nine equals = _____
- Subtract eight from ten equal _____
- What is the difference between 343 and 140
- A class has 44 children, ten of them are absent. How many are present?

NB: the teacher should give more examples.

The teacher should emphasis the key words

Subtract using a numberline



$$7 - 5 = 2$$

_1			1	1		ı	ı			
1		l	ı	1	1	1	1	I	1	1
0	1	2	3	4	5	6	7	8	9	10

NB: | Encourage the learner to circle the answer.

Number sequence

Count in ones and fill in the missing numbers eg

0,1,2,3,____,6,7,____,9,____

56, 57, _____, ____, 60

101, 102, 103, ____, ___, 106

NB:

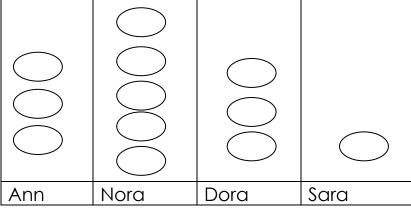
- Teacher guide the learners to fill in the missing numbers n twos, threes, fives and tens
- Filling in the missing numbers should be done both in ascending and descending order
- Teach about the numbers; before, after, between

Graphs

Picto graphs / picture graphs

This is information represented in form of pictures Example

Four girls picked eggs on Saturday



Questions

1. How many eggs did Dorah pick?

- 2. Who picked the least number of eggs?
- 3. Name the children with the similar number of eggs?
- 4. How many eggs were picked by the four girls altogether?

The teacher should give more examples

Bar graph

This is a graph having bars that pupils should study and interprete in order to answer the questions

Ref: fountain primary mathematics book 2 pg 56-59 MK bk 2 page 69

GEOMETRY

Shapes: Examples of shapes and their sizes Triangle Square Circles Oval Cylinder Rectangle Semi circle Kite Pentagon Cone

NB: the teacher should give varying exercises about shapes;

- Matching

- Naming

- Drawing

- Comparing

- Shading

Ref: MK bk 2 pg 72

- Counting

TERM II 2015

Topical breakdown

- 1. Capacity
- Defining and identifying liquids
- Comparing capacity
- Addition of litres
- Subtraction of litre
- Word statements
- 2. Operation of number
- Addition of two digit numbers with regrouping
- Word statement in addition of two digit numbers with regrouping
- Division (short and long without getting a remainder)
- Word statements about division
- 3. Fraction
- Definition
- Drawing and naming fraction
- Shading fractions
- Reading and writing fractions
- Comparing fractions
- Addition of fractions
- Subtraction of fractions
- 4. Algebra
- Finding missing numbers by adding
- Finding missing numbers by subtraction
- Word statements about finding missing numbers in addition and subtraction
- 5. Measurements
- Lengths
- Definition
- Things used to measure length
- Examples of things or objects whose lengths can measured and units to measure length
- Comparing length of different objects

- Addition of length
- Subtraction of lengths
- Picture interpretation
- 6. Weight (mass)
- Definition
- Things whose weight can be measured
- Things used to measure weight and units comparing weight of different objects
- Subtraction of weight

Capacity

Capacity is the amount of liquid a container can hold. Examples of liquids

Examples of liquids.

- Water Paraffin
- Soda Cooking oil etc
- Milk
- petrol

Some of the common containers we use to measure liquids.

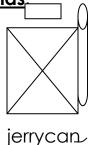
- Kettle alass
- Bottle pot
- Bucket drum
- Basin jerrycan

Comparing containers we use to hold liquids









A mug holds less water than a bucket.

bucket

A pot holds more water than a mug.

A jerrycan holds more water than a pot.

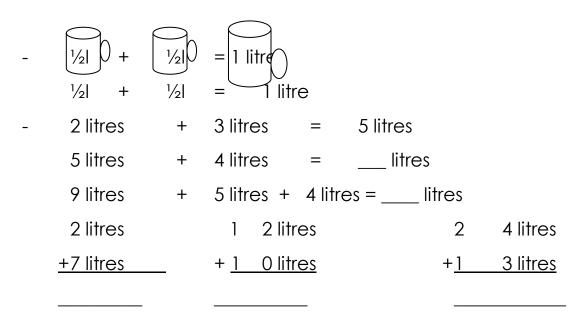
A pot holds less water than a jerrycan.

- The standard unit for capacity is litres (L)
- We can also use ½ litre to measure capacity.
- Less liquids like medicine, safi etc are measured in mililitres (ml)

Practical activity

- Children will use 1 litre and ½ litre containers to fill the bigger container.
- a) How many ½ litre containers can fill a 1 litre container?
- b) Find how many ½ litres fill a 2 litre container
- c) Find how many ½ litres fill a 5 litre container?

Addition of litres



Subtraction of litres.

9 litres – 4 litres = ____ litres

10 litres – 3 litres = ____ litres

7 litres

3 6 litres

- 2 litres

-<u>2 0 litres</u>

Word statements

Addition of 2 digit numbers with regrouping

1 6 1 6 2 8 + 5 + 8 + 7

2 5

Word statements in addition of 2 digit numbers with regrouping

- There are 13 boys and 17 girls in P.2 class.
 How many children are there altogether?
- Joan had 26 sweets. Her mother gave her 9 more sweets. How many sweets did she have altogether?

Division:

The signs used are ÷ or —

Examples:

$$21 \div 3 =$$

Long division

Examples:

Word statements

Examples

- Share 4 mangoes equally between 2 girls
 How many mangoes does each get?
- 2. Divide 12 by 2

- 3. 4 boys shared 24 pencils equally.
 How many pencils did each get?
- 4. Divide 24 by 3

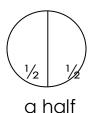
Fractions

A fraction is a part of a whole.

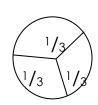
- cutting, folding and naming fractions (practical work)

Examples:









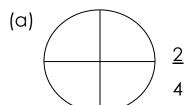
a quarter

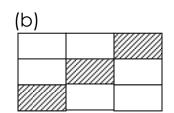
a third

Naming fractions.

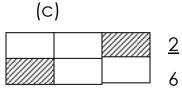
<u>Identifying the fraction of the shaded part</u>

Examples:





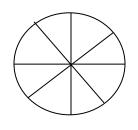




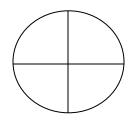
Shading the given fraction

Examples:

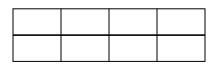
Shade these fractions



<u>3</u> 8



<u>1</u>



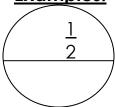
<u>5</u> 8

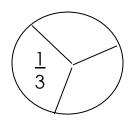
Comparing fractions.

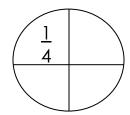
- Using bigger than or smaller than (practical work)
- Using greater than, less than or equal to

(>)

Examples:







Which part is bigger?

Which part is smaller?

Use greater than, less than or equal to (>, < or =)

½ is ______ ½

1/4 is _____1/3

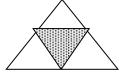
1/3 is _____1/3

Fraction of the unshaded part

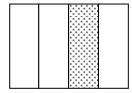
What fraction is unshaded? (not shaded)

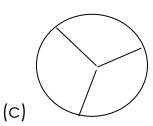
Examples:











Addition of fractions with the same denominations

Examples:

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

(b)
$$\frac{1}{4} + \frac{2}{4} = \frac{1+2}{4} = \frac{3}{4}$$

(c)
$$2 + 3 + 1 = 2 + 3 + 1 = 6$$

9 9 9 9 9

Subtraction of fractions.

Examples:

(a)
$$\frac{3}{4} - \frac{2}{4} = \frac{3}{4} - \frac{2}{4} = \frac{1}{4}$$

(b)
$$\frac{5}{9} - \frac{3}{9} =$$

(c)
$$\frac{7}{10} - \frac{5}{10} =$$

ALGEBRA:

Find the missing numbers

Examples:

$$+ 4 = 7$$

 $+ 6 = 10$

Word problems:

Examples

- 1. _____ plus four equals seven.
- 2. _____ plus zero equal nine.
- 3. Ten plus _____ equals twelve.

Revision:

Finding missing numbers in subtraction

Examples:

- 1. $9 3 = \square$
- 2. $5 0 = \square$
- 3. 10 = 4
- 4. 8 \square = 6
- 5. 15 □= 10

Find the missing numbers.

Examples:

- 1. \Box 3 = 6
- 2. \Box 7 = 10
- 3. \Box 5 = 12
- 4. □ 0 = 15

Word problems

Examples:

- 1. Eight takeaway three equals _____
- 2. Ten takeaway three equals _____
- 3. Seven takeaway ______ equals fifteen.
- 4. Sixteen takeaway _____ equals twelve.
- 5. _____ takeaway three equals seven.

Topical revision exercise:

Length

Length is how long or short an object is. Or Length is the distance between two points.

Things we use to measure length

- meter ruler - handspan

- short ruler - arm's length

- string - fathom

- stick - feet

- stride

- Measuring different objects at school practically – using strings, sticks, strides, arm's length etc.

Comparing length of different objects



String A is longer than string B

String B is shorter than string A





Tree x is taller than tree Y.

Tree Y is shorter than tree X.

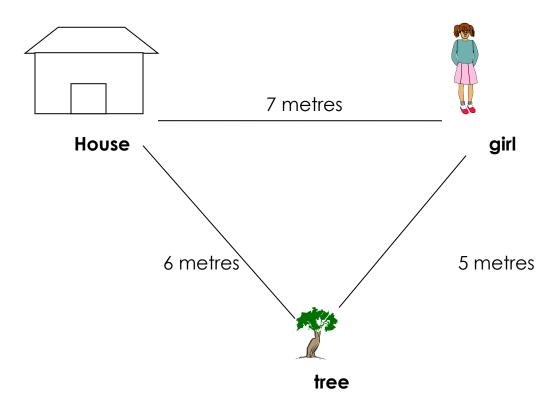
The units for length are metres (m) and centimeters (cm)

Addition of length.

$$7m + 2m =$$

 $9m + 4m + 2m =$
 $6 cm$

Picture interpretation:



- (a) What is the distance from the house to the tree?
- (b) What is the distance from the tree to the girl?
- (c) What is the distance from the house to the girl?
- (d) What is the longest distance?
- (e) What is the shortest distance?
- (f) What is the total distance around the pictures?

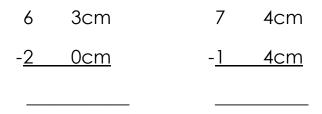
Subtraction of length.

$$9m - 6m = __m$$

$$8cm - 3cm = __cm$$

$$14m - 5m = m$$

$$12cm - 6cm = ___cm$$



Weight(mass)

How heavy or light some one or something is.

Weighing different objects practically

For example; stones, books, bags etc.

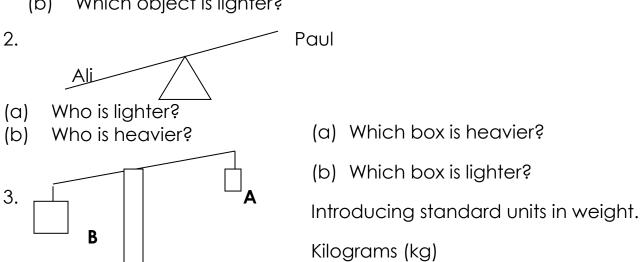
- Weighing children in class using the weighing scale.

NB: show learners the different kinds of weighing scales.

Comparing the weight of different objects

Using heavier than or lighter than. 1. A stone A pencil

- (a) Which object is heavier?
- Which object is lighter? (b)



Grams (g)

Addition of weight

$$5kg + 3kg = \underline{\hspace{1cm}} kg$$

$$12kg + 2kg + 3kg =$$

$$13kg + 4 kg =$$

$$10kg + 7kg =$$

Subtraction of weight

$$10kg = 3kg = \underline{\qquad}kg$$

$$14kg - 5kg = \underline{\qquad} kg$$

4g

4g

6 6kg

5

-<u>5</u> 4g

-3 3kg

TERM III 2015

Topical breakdown

- 1. Measures (time)
- Naming days of the week
- Naming months of the year
- Identifying the days per month
- Identifying the calendar
- Telling time in hours
- Telling time by a half past

- Telling time by a quarter past
- 2. Money
- Definition
- Identifying money
- Adding money (changing money
- Multiplying money
- Word statements
- Subtraction of money (finding change)
- Shopping (price list)

The second gaps

- 3. Algebra
 - -finding missing numbers

 Multiplying algebra with first gaps

 Multiplying algebra with the second gaps

 Dividing in algebra by

 The first gaps

Revise

Days of the week

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday MK pg 133 and teachers own questions

Months of the year and their days

January 31

February 28-29

March 31

April 30

May 31

June 30

July 31

August 31

September 30

October 31

November 30

December 31

Children will answer questions by the teacher MK bk 2

Example

- a) How many days make a week?
- b) What is the last day of the week?
- c) How many months make a year?

Calendar

Children should learn how to read the calendar Example

Use the calendar to answer the questions

October 2008

Mon	Tue	Wed	Thur	Fri	Sat	Sun
		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		

- a) Which month of the year is shown on the calendar?
- b) On what day did the month begin?
- c) How many days are there in the month?
- d) What was the day on 31st October, 2008?

Drawing and showing the time

- A clock face has two hands the hour hand (short hand) it tells us the hour.
- The long hand is the minute hand, it tells us the minutes
- The clock face has 12 hours

1 hours = 60 minutes

1 days = 24 hours

 $\frac{1}{2}$ day = 12 hours

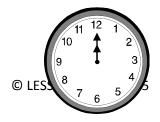
 $\frac{1}{2}$ hour = 30 minutes

Telling time by the hour example

It is 8 o'clock



It is 12 o'clock



It is 3 o'clock



it is 1 o'clock



It is 6 o'clock



it is 10 o'clock



Telling time using a half past

When the minute hand goes half way the clock face, time is half past the hour. Example

Tell time

It is a half past 4



It is a half past 7



It is a half past 11



It is a half past 5



Teach showing time

The hour hand also moves half way

Time in quarter past

The children with the help of the teacher will count the small markings between each two figures showing minutes

When they count up to 15 minutes then it is a quarter past.

Show the time

A quarter past 12



A quarter past 1



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a quarter past 6



a quarter past 11



The hour hand also moves slightly past the hour.

Money

- Money is what we use to buy things we need. It is in form of coins and paper notes.
- Different countries have different currencies and the Uganda currency is called shillings (discuss)
- Ugandan currency is the following denominations.

Coins	note / paper money
Shs. 50	shs. 1000
Shs. 100	shs, 2000
Shs. 200	shs. 5000
Shs. 500	shs. 10,000
Shs. 1000	shs. 20,000

Children will look at the real money to see the features

Currency	features/ things we find on money
Shs, 50	kob's horns/ coat of arms
Shs. 100	cow/coat of arms
Shs. 200	fish/coat of arms
Shs. 500	head of crested crane / coat of arms

Changing money

- a) Two noins of sh. equal to 1 coin of shs. 100 Shs. 50 + shs. 50 = shs. 100
- b) Two coins of sh. 100 equal to sh. 200 Shs, 100 + shs. 100 = shs. 200
- c) Two coins of shs. 500 equal to shs. 1000

Shs.
$$500 + \text{shs}$$
. $500 = \text{shs}$. 1000

Shopping

Buying and selling

Finding total expenditure basing on a price list

Example



pencil

apple

Shs. 200

shs. 100

shs. 500

- a) How much money will Joan pay if she buys an apple?
- b) How much money will you pay if you buy a pencil and a book?
- c) John bought a book, a pencil and an apple, how much money did he pay?

Finding change

Change is the money you get back after paying more than the cost of the items you have bought.

Price list

Item price

Soap shs. 300

Sweet shs. 50

Sugar shs. 1000

Bread shs. 600

- a) If I have shs, 500 and buy a piece of soap. How much money will I remain with?
- b) How much money will you have left if you have shs. 1000 and buy bread?
- c) Daddy had shs. 2000 and he bought sugar. How much money remained?

Multiplying our money

Example

Shs. 200 X 2 shs. 200

Χ

shs. 400 x 3

shs. 250 x 3 shs. 500

Word problems

- 1. One pencil costs 300 shillings. What is the cost of 3 pencils?
- 2. A ball costs shs. 500, what is the cost of 2 balls?
- 3. What is the cost of 3 books if one book costs 150 shillings?
- 4. My mummy bought an apple at shs. 200, what is the cost of 4 apples?
- 5. 1 bought a brush at 250 shillings, what will be the cost of 3 brushes? Subtraction of money

Shs. 700

shs. 2200

Ref: MK bk 2 pg 128

- Shs. 200

shs. 1200

- Word statements involving subtraction

Algebra

Algebra involving multiplication

Reciting tables

Another method of solving the equations

NB: to get the answer/missing number, you need to divide the bigger number with the smaller number

$$5 \times 2 = 10$$

= $10 \div 2 =$
= 5

$$3 \times 4 = 12$$

= 12÷ 4
= 3

$$\begin{bmatrix} 4 \\ x \ 4 = 16 \\ = 16 \div 4 \\ = 4 \end{bmatrix}$$

$$6 \times 3 = 18$$

= 18÷3
= 6

When you are looking for the first gap, you divide the answer by the given number

Algebra involving division

$$12 \div 3 = 4$$

$$\div 4 = 3$$

$$= 3 \times 4$$

NB: When the box is in the middle, you continue to divide the bigger number with the smaller number to get the answer.

To get the answer you need to multiply both numbers

$$\rightarrow$$
 4 = 3

$$\Box$$
 = 4x3