

MEASUREMENT - CBC GRADE 1 MATH LESSONS

LENGTH

Lesson 1: How to compare length directly using longer than

- Measurement is finding a number to represent the size or quantity of anything.
- It includes finding the length, volume, weight/mass, and time.
- It uses words such as less, more, short, long, heavy, light and how many?

Length is the distance from one end to the other end.

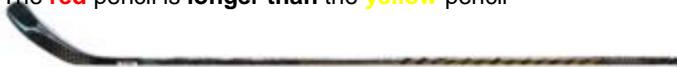
- Things to consider when choosing a tool for measurement are
1. Choose correct tools to save on time and for accuracy purposes.
 2. Line up tools correctly i.e., do not start measuring in the middle.
 3. Do not overlap or leave spaces.
 4. Measure end to end.

Which one is longer than

- Present the items to be compared
- The pencils and sticks and introduce the term “longer than”
- Let them compare the size of the stick and the pencils.



The **red** pencil is **longer than** the **yellow** pencil



The stick is **longer than** the pencil

Fill in the gaps



spoon



pencil

The _____ is longer than the _____.



rope



2. _____ ruler

The _____ is longer than the _____.



3.



The _____ is longer than the _____.

Lesson 2: How to compare length of different objects directly using shorter than

- Present the items to be compared
- The pencils and sticks and introduce the term “shorter than”
- Let them compare the size of the pencils.
- Look at the pictures.



The red pencil is shorter than the orange pencil.

Fill in the gaps



Book



eraser

1. The _____ is shorter than the _____.



2. The _____ is shorter than the _____.



Carrot



cucumber

3. The _____ is shorter than the _____.

Lesson 3: How to compare length of objects and identify which ones are of the same length

- Same means not different or similar.
- Flash a number of objects as the learners identify which are longer or shorter.
- Ensure some two objects among the group have same length to help you introduce same as.

Compare the two buses



The **blue** bus and the **orange** bus have the same length.



The spoon and the fork have the same length.

Fill in the gaps.

1.



rope

2.



pen



ruler

3.



desk

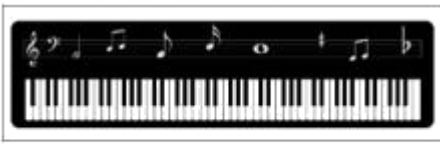


pencil

Lesson 4: How to directly compare lengths of different objects and identify which is shorter than, longer than and same as

Flash pictures on cards and let the learners make sentences using shorter than or longer than.

Help them compare the two pictures in their pupil's book.



piano

The piano is **longer than** the guitar.



guitar

The

guitar is **shorter than** the piano.

Fill in the gaps using **longer than** or **shorter than**.



Eraser



pencil

1.

a. The eraser is _____ the pencil.

b. The pencil is _____ the eraser.



Car



bus

2.

a. The car is _____ the bus.

b. The bus is _____ the car.

Lesson 5: How to compare and identify same length with different line positions

- Get a book and a pencil of the same length.
- Place the book and the pencil in a vertical position and say which one is longer?
- Place the book and the pencil in a horizontal position and say which one is longer?



A



B

1. Which is longer?



A



B



C



2.

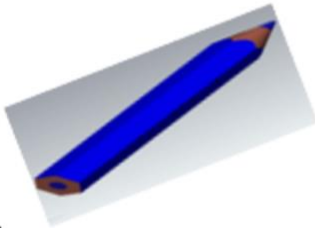
A



B

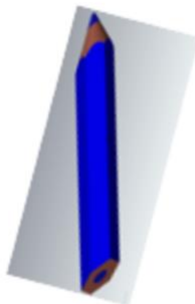


C

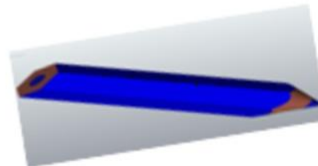


3.

A



B



C



4.



Lesson 6: How to compare and identify same length by changing the orientation

Get a piece of wire and a stick of the same length



wire



stick

Make a circle using the wire.



Make the wire straight again. Place the wire and the stick together.

Which one is longer?

Lesson 7: How to measure the length of a desk (fixed) using arbitrary units

Get a stick, a pencil and measure the sides of the table



- How many sticks/pencils is the shorter side of the table?
- How many sticks/pencils is the longer side of the table?

Which is shorter? The stick or the pencil?

Fill in the gaps

- The longer side of the table is _____ sticks.
- The longer side of the table is _____ pencils.
- The shorter side of the table is _____ sticks.
- The shorter side of the table is _____ pencils.

Fill the gaps with **longer than** or **shorter than**.

- The stick is _____ the pencil.
 - The pencil is _____ the stick.
-

Lesson 8: How to measure the sides of their desks using arbitrary unit

Using a pencil, a book and a stick

1. Measure the longer side of your desk using the pencil/book/stick.
2. Measure the shorter side of your desk using the pencil/book/stick.

Fill in the gaps

1. The longer side of my desk is _____ pencils.
2. The longer side of my desk is _____ books.
3. The longer side of my desk is _____ sticks.

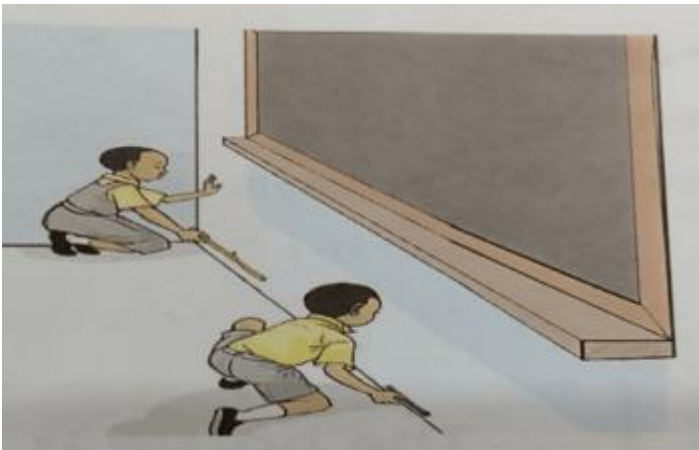
Fill in the gaps using **longer than** or **shorter than**

4. The stick is _____ the pencil.
 5. The pencil is _____ the stick.
-

Lesson 9: How to measure the sides of the classroom with arbitrary unit

Get a pencil, a book and a stick

1. Measure the longer side of the classroom using the pencil/book/stick.
2. Measure the shorter side of the classroom using the pencil/book/stick.



1. Measure the long side of the classroom using the long stick and a short stick.
2. Measure the short side of the classroom using the long stick and a short stick.

Fill in the gaps

1. The longer side of the classroom is _____ long sticks.
 2. The longer side of the classroom is _____ short sticks.
 3. The shorter side of the classroom is _____ long sticks.
 4. The longer side of the classroom is _____ short sticks.
-

Mass

Lesson 1: How to compare mass of different objects directly using heavier than

Look at the picture.



The bag is **heavier than** the book

Get a book, pencil, eraser and a stone.

Compare the weight of a book, pencil, eraser and a stone.

Say which one is heavier?

Fill in the gaps



Pencil



book

1. The _____ is heavier than the _____.



Book



eraser

2. The _____ is heavier than the _____.



Book



stone

3. The _____ is heavier than the _____



Eraser



stone

4. The _____ is heavier than the _____

Lesson 2: How to compare mass directly using lighter than

Look at the picture.



The book is **lighter than** the bag.

Compare the weight of a book, pencil, eraser and a stone.

Say which one is lighter?

Fill in the gaps



Bottle top



book

1. The _____ is lighter than the _____.



Pencil



book

2. The _____ is lighter than the _____.



Stone



pencil

3. The _____ is lighter than the _____.



Book



stone

4. The _____ is lighter than the _____.

Lesson 3: How to compare masses of objects of the same mass



The mass of the two apples are the same.

Using a beam balance weigh the exercise book, eraser, textbook, and pencil, cup, bottle and see which ones have the same weight.

Which things have the same mass?

Lesson 4: How to identify which objects are heavier than, lighter than or have the same mass

Look at the picture



The textbook is **heavier than** the bottle

The bottle is **lighter than** the textbook.



The two apples have the same mass.

Get a beam balance, stones, textbook, milk, papers, bottle and a shoe and use it to find out the things that are **heavier than**, **lighter than** and **same** mass. Fill in using **lighter than**,

heavier than, or **same as**



1. The packet of milk is _____ the stone.



2. The potato is _____ the spoon.



3. The mass of the clay is the _____ the mass of the cup.



4. The bottle is _____ the textbook.



5. The mass of the potato is _____ the mass of the shoe.

Lesson 5: How objects can be manipulated but still have the same mass: Mass conservation through manipulation of shapes

Get a beam balance and clay or plasticine.

1. Make two equal balls of clay.

Balance the balls on the beam balance as shown in the picture below.



Make a roll using one ball of clay.

Put the roll on the beam balance as shown in the picture below.



Does the roll balance the ball?

Lesson 6: How objects can change their shape but still have the same mass: Mass conservation through changing of shape

Get a beam balance and plastic bottles.

1. Place the bottles on a beam balance as shown below.



Do the bottles balance?

Place the bottles as shown below



Do the bottles balance.

Lesson 7: How to measure the mass of objects using arbitrary units 1



3 spoons balance the tomato.

The mass of the tomato is the same as the mass of three spoons

Activity

Get a beam balance, marbles, stone, sticks, pencils and book.

Put a book and find out how many marbles balance the book.

Remove the marbles and put the pencils, which is heavier?

How many pencils balance the book?

Fill in the gaps.

1. The mass of the textbook is the same as the mass of _____ marbles.

2. The mass of the textbook is the same as the mass of _____ pencils.

Fill in the gaps with **Lighter than** or **heavier than**.

3. A marble is _____ a pencil.

4. The stick is _____ than the pencil.

5. The pencil is _____ than the stick.

6. A pencil is _____ a marble.

7. _____ pencils balance with the stone.

8. _____ sticks balance with the stone.

Lesson 8: How to measure the mass of other objects using an identified arbitrary unit

Get a beam balance, a stone, crayons and sticks.

1. Balance the stone with the crayons on a beam balance



How many crayons balance the stone?

2. Balance the stone with sticks on the beam balance.

How many sticks balance the stone?

Activity

Fill in the gaps.

1. _____ crayons balance with the stone.

2. _____ sticks balance with the stone.

Fill in using **heavier** or **lighter**.

3. The stick is _____ than the pencil.

4. The crayon is _____ than the stick.

Lesson 9: How to measure the mass of objects using arbitrary units 2

Get a beam balance, textbooks, stone.

1. Put a stone on one side of the beam balance. Put

text books on the other side.



How many text books balance the stone?

2. Put a stone on one side of the beam balance. Put

oranges on the other side.



How many oranges balance the stone?

Which is heavier? The oranges or the textbooks?

Activity.

1. The mass of the stone is the same as the mass of _____ text books.

2. The mass of the stone is the same as the mass of _____ oranges. Fill in

the gaps using **heavier than** or **lighter than**

3. The stone is _____ the textbook.

4. The textbooks are _____ the oranges.

Capacity

Lesson 1: Which container holds more liquid?



The bucket is big.

The jug is small. The bucket holds **more** water than the jug.

Repeat the same using a small and a big bottle.

Fill in the gaps



Jug



cup

1. The _____ holds more water than the _____.



Bucket



jug

2. The _____ holds more water than the _____.



Sufuria



cup

3. The _____ holds more water than _____.

Lesson 2: Which container holds less water?



Jug



cup

The cup is small. The jug is big.

The cup holds less water than the jug.

Repeat the same using a big and small bottle.

Fill the gaps.



Jerrican

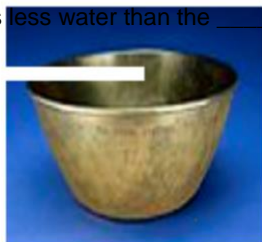


bottle

1. The _____ holds less water than the _____



Bowl



basin

2. The _____ holds less water than the _____



Flask



cup

3. The _____ holds less water than the _____.

Lesson 3: How to tell which containers hold more than or less than



Bottle



kettle



cup



bowl

Find out which container holds more.

Find out which container holds less.

Arrange the containers from the biggest to the smallest.

Fill in the gaps using **more** or **less**



Jug



sufuria



glass

1. The jug holds _____ water than the glass.
2. The glass holds _____ water than the jug.
3. The jug holds _____ water than the sufuria.

4. The sufuria holds _____ water than the jug.
 5. The glass holds _____ water than the Sufuria.
 6. The sufuria holds _____ water than the glass.
-

Lesson 4: How to identify containers that hold the same amount of water



The **yellow** bottle and the **brown** bottle hold the same amount of water.

Fill in the gaps



The flasks hold the _____ amount of water.



The green cup holds the _____ as the blue cup.



The yellow basin holds the _____ as the red bucket

Lesson 5: How to identify containers of different shapes and types that hold the same amount of water



The sufuria of water fills the bucket.

The sufuria and the bucket hold the same amount of water.

Fill the gaps.



Gourd

jug

sufuria

pot

The gourd holds less than the sufuria.

The gourd holds the same as the pot.

The sufuria holds more than the jug.

Fill in using **more than**, **less than** or **same as**

1. The sufuria holds _____ the pot.
2. The gourd holds _____ the jug.
3. The jug holds _____ the pot.

Lesson 8: How to measure capacity using arbitrary units 1



fill



4 bowls of water fill the sufuria.



fill



5 cups of water fill the flask.

Fill the bucket with water using the glass.

Fill the bucket with water using a cup.

Fill the bucket with water using the jug.

Fill the jug with water using the cup.

Fill the jug with water using the glass.

Fill the gaps.

1. The basin holds _____ glasses of water.

2. The basin holds _____ cups of water.

3. The basin holds _____ jugs of water.

4. The jug holds _____ cups of water.

5. The jug holds _____ glasses of water.



Holds



6. The tin holds _____ cups of water.



7. bucket holds _____ bottles of water.



fill



8. _____ glasses of water fill the jug.

Lesson 9: How to measure capacity using arbitrary units 2



fill



4 bowls of water fill the sufuria.



fill



5 cups of water fill the flask.



Bucket



glass



jug



cup

Fill the bucket with water using the glass.

Fill the bucket with water using a cup.

Fill the bucket with water using the jug.

Fill the jug with water using the cup.

Fill the jug with water using the glass.

Fill the gaps.

1. The basin holds _____ glasses of water.

2. The basin holds _____ cups of water.

3. The basin holds _____ jugs of water.

4. The jug holds _____ cups of water.

5. The jug holds _____ glasses of water.



Holds



6. The tin holds _____ cups of water.



7. bucket holds _____ bottles of water.



fill



8. _____ glasses of water fill the jug.

Lesson 10: How to measure capacity using arbitrary units 3



fill



4 bowls of water fill the sufuria.



fill



5 cups of water fill the flask.



Bucket



glass



jug



cup

Fill the bucket with water using the glass.

Fill the bucket with water using a cup.

Fill the bucket with water using the jug.

Fill the jug with water using the cup.

Fill the jug with water using the glass.

Fill the gaps.

1. The basin holds _____ glasses of water.

2. The basin holds _____ cups of water.

3. The basin holds _____ jugs of water.

4. The jug holds _____ cups of water.

5. The jug holds _____ glasses of water.



Holds



6. The tin holds _____ cups of water.



7. bucket holds _____ bottles of water.



fill



8. _____ glasses of water fill the jug.

Lesson 11: How to measure capacity using arbitrary units 4



fill



4 bowls of water fill the sufuria.



fill



5 cups of water fill the flask.



Bucket



glass



jug



cup

Fill the bucket with water using the glass.

Fill the bucket with water using a cup.

Fill the bucket with water using the jug.

Fill the jug with water using the cup.

Fill the jug with water using the glass.

Fill the gaps.

1. The basin holds _____ glasses of water.

2. The basin holds _____ cups of water.

3. The basin holds _____ jugs of water.

4. The jug holds _____ cups of water.

5. The jug holds _____ glasses of water.



Holds



6. The tin holds _____ cups of water.



7. bucket holds _____ bottles of water.



fill



8. _____ glasses of water fill the jug.

Time

Lesson 1: What are the things we do during the morning hours?

Things we do in the morning.

- Morning is the time the sun is rising.

These things in the morning.



Waking up



Wasing face



Eating breakfast



School assembly

Sing the Song

I wake up in the morning.

I wash my face. I comb my hair.

I take my breakfast. I brush my teeth.

Then I go to school.

Complete the gaps.

Write things we do in the morning

a. At school

b. At home

Lesson 2: What are the things we do in the afternoon?

- Afternoon is the time between morning and evening •

These are the things we do in the afternoon.



Leaving school



Eating lunch



Playing



Sweeping the school

1. Write the things we do at school in the afternoon

2. Write the things we do at home in the afternoon

Lesson 3: What are the things we do in the evening?



Bringing animals home



Eating supper



Activity

Draw a picture of one thing you do in the evening.

Write the things we do in the evening.

Lesson 4: What are the things we do in a day?

We do these things in a day.



Waking up



Fetching water



Reading



Brushing teeth

Match the activity with the time.

Activities
Waking up
Doing homework
Eating lunch
Going to class

Time
Evening
Afternoon
Morning
Morning

2.Fill in the gaps with morning, afternoon, evening.

a.We watch television in the _____.

b.We play at school in the _____.

c. Chickens enter the hen house to sleep in the _____.

Lesson 5: What are the days of the week?

These are the days of the week.

- | | |
|--------------|-------------|
| 1. Sunday | 5. Thursday |
| 2. Monday | 6. Friday |
| 3. Tuesday | 7. Saturday |
| 4. Wednesday | |

Lets Sing a song

Today is my favourite day . He made it a special day, I love tomorrow yesterday but today is my favourite day.

Sunday, Monday, Tuesday, Wednesday, Thursday, Friday and Saturday a week.

Complete the sentences

1. The days of the week are Sunday, _____, _____, Wednesday, _____, Friday, _____.
 2. Monday comes after _____.
 3. Tuesday comes after _____.
 4. _____ is between Thursday and Saturday.
 5. fill in the missing letters. W_dnesday Th_rsdays S_turday
 6. There are _____ days in a week.
 7. The first day of the week is _____.
 8. The last day of the week is _____.
-

Lesson 6: What are the things we do at school in a week?



Waking up



Fetching water



Reading



Brushing teeth

Fill in the gaps

1. Write the days of the week

2. Write the things you do in school on
3. Monday _____, _____
4. Tuesday _____, _____
5. Wednesday _____, _____

Lesson 7: What are the things we do at home in a week?



Fetching water



Feeding chickens



Playing



Watering flowers



Riding a bicycle



visiting a zoo



Washing clothes



Mopping a house

1. Write one thing you do after school on each school day.
2. Monday - _____
3. Tuesday - _____
4. Wednesday _____
5. Thursday- _____
6. Friday - _____

7. Draw and colour a picture of one thing you do after school.

Money

Lesson 1: How to identify Kenyan coins.

- Money is what we give for buying something or paying for something.
 - Money is comes in two forms.
1. coins- These are metallic money
 2. notes- These are paper money.
- A coin has a head and a tai.
 - They are:



Head

tail (1 shilling coin)



head

tail (5 shillings coin)



Head

tail (10 shillings coin)



head

tail (20 shillings coin)



Head

tail (40 shillings coin)

Fill in the gaps.

1. The head of 1, 5, 10 and 20 coin has a picture of _____
2. The tail of each coin has the picture of _____
3. Which coin can buy more ?
4. Which coin can buy less?

Lesson 2: How to identify Kes 50 shillings and 100 shillings notes

Notes are paper notes

We have five kenyan notes. These are 50, 100, 200, 500 and 1000 shilling note.



Front and back of a 50 shilling note.

Front and back of a 100 shilling note.

Fill in the blanks.

1. Which note is bigger ? The 50 shillings or the 100 shillings?
2. Which note shows animals at the back?
3. Which note shows a tall house at the back?
4. Which note can buy more?

Lesson 3: How money is used in buying goods

Look at the picture of **Hustler shop**.

A price list is a list showing an item and its price.

Hustler shop

Price list



Item	Price
 Rubber	Sh. 5
 Exercise Book	Sh. 15
 Pencil	Sh.10
 HandKerchief	Sh.20
 Bread	Sh. 60
 Toothbrush	Sh. 30
 Bar of soap	Sh. 90

How much money will you need to buy these things from Pema shop?

1. Bread
2. A toothbrush
3. An exercise book
4. A pencil
5. A rubber
6. A bar of soap

Lesson 4: How money is used to pay for services

Paying is to give something/ money owed for goods or services.

Look at the pictures

These are services.

We pay money to get services



Hairdresser



cobler



barber



A vehicle transporting pupils.

Activity

A.How much money do you pay ?

- 1. To have your shoes repaired?
- 2. To get a haircut at the barber?
- 3. To make your hair at the saloon?
- 4. For bus fare to school?

B.What service do you pay for with this money?

- 1. 10 shillings
 - 2. 20 shillings
 - 3. 40 shillings
 - 4. 50 shillings
 - 5. 100 shillings
-

Lesson 5: How to identify and differentiate between needs and wants

1.Needs are things we cannot do without.

They include:



House



food



clothes



water



medical care

2.Wants are things we can do without.



Bicycle



television



toy



doll

a.Write your needs in school.

b.Write your wants in school.

c. Draw and colour the needs.

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d. Draw and colour the wants.

--	--	--

Lesson 6: How to spend money wisely and also save

Spending is to use.

Angie had 100 shillings which she used it to buy a chocolate.

Harvey had 50 shillings which he used to buy a pencil.

Who spent the money well?



Activity.

1. Draw four things you will buy if you have 50 shillings.

--	--	--	--

2: Draw and colour the things you will buy if you had 100 shillings

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Lesson 7: How to save money after spending some

Savings is money not spent but kept aside for later use.

We save money to

1. For future use.
2. ^A for emergencies
3. for wealth building.



B



-We save the money that we do not spend.

PROJECT: Make a home made piggy bank.

Get a manilla paper, glue or sellotape and a pair of scissors and make a piggy bank.

1. Draw a piggy bank.



2. Maxine had 60 shillings. She used 30 shillings to buy a pen and a pencil. She saved _____ shillings.
3. Winslet had 90 shillings, She used 50 shillings to buy a bracelet. She saved _____ shillings.
4. Abdi had 50 shillings. He used 30 shillings to buy a handkerchief. He saved _____ shillings.
5. We should _____ money left after buying what we need.