SNBP International & Senior Secondary School, Chikhali, Pune.
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CHAPTER 11 MEASUREMENTS NOTES
(PT3)

Class : III

SUBJECT : Maths

Prepared by: TEJALI GOTE   L .No: 9

11 Measurements: Mass, Capacity, and Length

Let's Begin

Kabeer and Prisha are both looking at a poster on water sports.

Each of these water sports needs a different length of pools.

Sports	Length of the swimming pool
Swimming	50 m
Water polo	30 m
Synchronised swimming	25 m
Water volleyball	50 m

I have prepared a table showing the lengths of the pools.

Use the information given in the table to answer the following questions.

a   The length of the pool is the shortest for _Synchronised swimming_.

b   The length of the pool for synchronised swimming is ___5___ m less than the length of the pool for water polo.

c   _Swimming_ and _water volleyball_ need pools of the equal lengths.

d   The capacity of the pool will increase if the length of the pool is increased. True/False

Now, draw the tens frame on the 1 kg rice bag.

1 kg of rice = [ten] 100 g of rice

1 kg of rice = [1000] g of rice

Number Talk

If 100 grams of rice is taken away from the 1 kg bag, what will be the mass of the rice bag? Represent through the number bond.

Answer: 900 g

1 kg
├ 100 g
└ 900 g

Solve:

a 5200 g = [5] kg [200] g   **b** 7090 g = [7] kg [90] g

c 1110 g = [1] kg [110] g   **d** 3007 g = [3] kg [7] g

We can also express mass given in kg as g.

2 kg = 2000 g

18 kg 350 g = 18,000 g + 350 g = 18,350 g

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Concrete Stage

Use any balance to measure the mass of following and compare. Write the units in which you measured the mass.

a An eraser and a notebook

b An apple and a toffee

c An inflated balloon and an orange

Answer: Answer may vary.

Spring balance   Kitchen balance   Pan balance

Pictorial Stage

1 Observe the pictures, and circle the units that you would use to measure their masses.

a (gram) kilogram

b gram (kilogram)

c gram (kilogram)

d gram (kilogram)

e (gram) kilogram

f gram (kilogram)

2 Complete the number bonds.

a 1 kg — 500 g / 500 g

b 1 kg — 750 g / 250 g

c 1 kg — 150 g / 850 g

d 1 kg — 700 g / 300 g
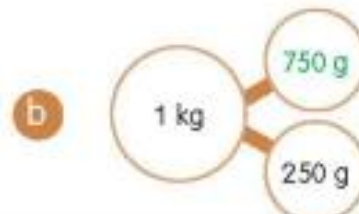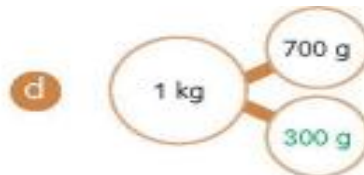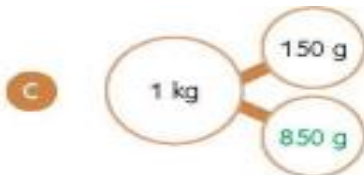
3 Circle the object which is heavier.

1100 g

1 kg 200 g

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Abstract Stage

1 Tick (✓) the objects with a mass greater than 1 kilogram.

a 12 bananas ✓   **b** 1 egg ☐   **c** 1 pumpkin ✓

d 3 guavas ☐   **e** 5 strawberries ☐   **f** 2 jackfruits ✓

2 Ria puts a 1 kg bag of sugar on one side of a pan balance. How many 100 g bags of sugar does she need to put on the other side to balance? Draw.

Think Aloud

Kyra is buying goods at the grocery store. She says that a pack of salt and a pack of potato chips would have the same mass because they are of the same size. Is she correct? Explain.

Answer: Answer may vary.

Capacity is the amount of liquid a container can hold. Let's learn more about it.

Let's estimate the capacity of these milk packets.
(Tick the correct option.)

C

A

B

Milk

A
✓ i. Less than 1 litre
☐ ii. More than 1 litre

B
✓ i. 1000 ml or 1 litre
☐ ii. 10 litres

C
☐ i. Less than 1 litre
✓ ii. More than 1 litre

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Number Talk

Prisha says that the amount of water is the same in both containers as their levels are the same. Do you agree with Prisha?

Now, pour the water into 2 different containers.

The liquid takes space according to the container, but the amount of liquid remains the same.

Answer: Answer may vary.

Think Aloud

Is the glass filled to its capacity? Support your answer with reason.

Answer: Answer may vary.

Think Aloud

What is the same about decomposing 1 litre into millilitres and decomposing 1 kilogram into grams?

Answer: Answer may vary.

Concrete Stage

1. Complete the table by filling in the estimated capacities. Write more than one litre, less than one litre, or about 1 litre.

Container	Estimated capacities
A mug	less than 1 litre
A milk carton	about 1 litre

Container	Estimated capacities
4 glasses	about 1 litre
A water tank	more than 1 litre

2 Find containers at home that have a capacity of about 1 litre. Use the labels on containers to help you identify them.

a Name of container (for example, carton of orange juice)

b Sketch the containers. How do their sizes and shapes compare?
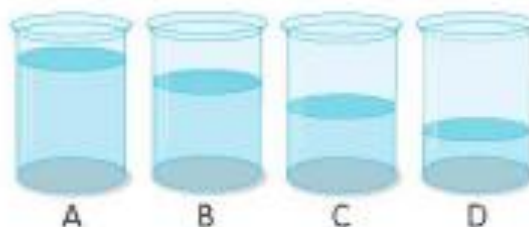
Answer: Answer may vary.

Pictorial Stage

1 Observe the containers and circle their estimated capacities.

a   i. (Less than 1 l)   ii. More than 1 l   iii. About 1 l

b   i. Less than 1 ml   ii. More than 10 l   (iii. About 1 l)

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2 Riya pours oil into four different containers that are of the same size.

a The amount of water in container C is _____ ml and container D is _____ ml.

A   B   C   D

b The difference in amounts of container A and container C is _____.
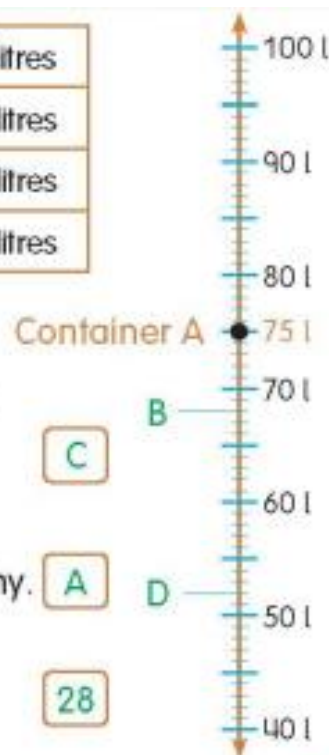
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3 The chart shows the capacity of 4 containers.

Container A	75 litres
Container B	68 litres
Container C	96 litres
Container D	52 litres

- 100 l
- 90 l
- 80 l
- Container A — 75 l
- B — 70 l
- 60 l
- A — D — 50 l
- 40 l

a Label the number line to show the capacity of each barrel. Container A has been done for you.

b Which container has the greatest capacity?   C

c Prisha buys a container that holds about 70 litres. Which container did she most likely buy? Explain why.   A

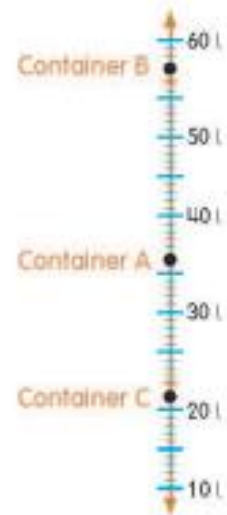**d** Use the number line to find how many more litres container C can hold than container B.   28

4 Use the number line and answer the questions.

a Record the capacity of the containers.

Container	Capacity in litres
A	36
B	57
C	21

b What is the difference between the capacity of Container A and Container C? **15**

Container B • 60 L

50 L

40 L

Container A • 30 L

Container C • 20 L

10 L

5 Estimate the amount of liquid in each container to the nearest hundred millilitres.

a **400** ml

Hintometer: Figure out the middle point between two measures. For example, 450 is between 400 and 500. The liquid is below the middle point 450, so it is about 400 ml.

b **150** ml

c **950** ml

d **700** ml

Abstract Stage

1 Kabeer's mom takes 5 millilitres of medicine each day for 3 days. How many millilitres of medicine will she take altogether?

Answer: **15 millilitres.**

2 A soccer player drinks 4 large glasses of water in each game. How many large glasses of water does she drink in 7 such games?

Answer: **28 large glasses.**

4 ? 4
4   4
4 4 4
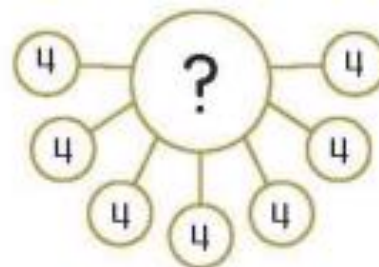
Express the metres into centimetres.

a 4 m = 400 cm   b 5 m = 500 cm   c 7 m = 700 cm

Hintometer: 1 m = 100 cm

Concrete Stage

1 Use a centimetre ruler to measure the lengths of the given objects and complete the table.

Object	Estimated length	Actual length
Top of your desk		
Duster		
Marker		
Pencil		
Pencil box		

Answer: Answer may vary.

2 List four things in your house that you would measure with a metre stick or metre tape.

a Door   b Window

c Table   d Glass

3 Why would you want to measure those four items with a meter stick or metre tape instead of a centimetre ruler?

We measure the longer lengths in metres.

So, we use a bigger ruler that is meter tape.

4 The width of your pinky finger is about 1 cm. Measure the length of the line segments using your pinky finger. Write your estimate.

a A ————————— B   Line segment AB is about [7] cm long.

b C ———— D   Line segment CD is about [4] cm long.

c E ——————————— F   Line segment EF is about [9] cm long.

Pictorial Stage

1 Circle the proper unit that you will use to measure each of the following.

a Length of a train

cm   (m)

b Length of an envelope

(cm)   m

c Length of a ladder

cm   (m)

d Length of a paintbrush

(cm)   m

2 Tick (✓) the line segment(s) that measure more than 12 cm.

a A ————————————— B   [ ]

b C ————————————————————————— D   [✓]

Abstract Stage

1 Tick (✓) the objects whose estimated length would be more than 25 cm.

a Toy car   **b** Sailboat ✓   **c** Bicycle ✓   **d** Dice

2 Diya swam 24 m in the first round of her training. Then she took a break and once again swam 36 m. How long did Diya swim in total?

Answer: 24 m + 36 m = 60 m

3 Would it take more metres or more centimetres to measure the length of a playground? Explain your answer.

It will take more cenimetres to measure a playground. It is because cm is a smaller unit of measuring than metres.

④ **Express in metres and centimetres.**

ⓐ 282 cm = [2] m [82] cm   ⓑ 485 cm = [4] m [85] cm

ⓒ 356 cm = [3] m [56] cm   ⓓ 956 cm = [9] m [56] cm

⑤ **A car is 365 cm long. What is its length in metres and centimetres?**

Answer: 3 metre 65 centimetres.

⑥ **Raman's height is 1 metre 35 centimetre. What is his height in centimetres?**

Answer: 135 cm.

The length of the needle is 15 mm. It can also be read on the scale as 1 cm 5 mm.

The length of the q-tip is [19] mm. It can also be read on the scale as [1] cm [9] mm.

The length of the pencil tip is [17] mm.

Number Talk

How many millimetres will be there in a 15 cm scale? How would you calculate? Share your strategy.

Answer: Answer may vary.

Concrete Stage

Use a scale to find the lengths of the following in mm.

ⓐ Eraser [20]   ⓑ Pencil [90]

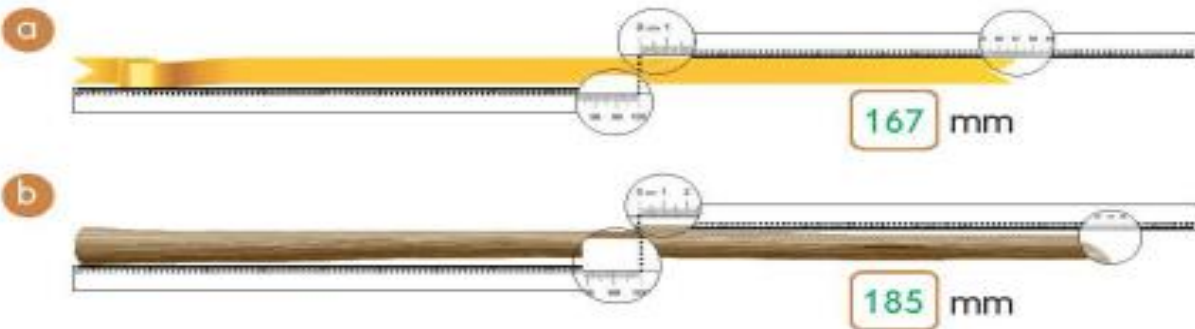ⓒ Width of your thumb [5]   ⓓ Thickness of maths book [15]

Pictorial Stage

1 The lengths of the following objects are measured using a metre scale. Write their lengths according to the stated units.

a

[167] mm

b

[185] mm

2 Circle the proper unit that you will use to measure each of the following.

a Length of a paper clip

cm   (mm)   m

b Height of a tree

cm   mm   (m)

Abstract Stage

1 Write the given length in centimetres and millimetres.

a 99 mm   9.9 cm

b 100 mm   10 cm

c 45 mm   4.5 cm

d 62 mm   6.2 cm

2 An toothpick is about 7 mm long. What will be the length of 10 such toothpicks kept end to end in a row? Express the answer in centimetre.

Answer: 7 cm

3 Rita bought a ribbon that is 52 cm long. What is its length in millimetre?

Answer: 520 mm

Concrete Stage

Use 'Counters' to convert the following into metres.

a) 1 km 340 m
1340 m

b) 3 km 285 m
3285 m

c) 5 km 66 m
5066 m

Pictorial Stage

Circle the proper unit that you will use to measure each of the following.

< city map >

a) Distance from hospital to your house

mm   cm   (km)

b) Length of a car

mm   (m)   km

c) Length of a laptop

mm   (cm)   km

Abstract Stage

1 Convert the following.

a) 42 km into m — 42,000

b) 3 km 20 m into m — 3020

c) 8 km 300 m into m — 8300

d) 9000 m into km — 9

2 The distance between Ria's house and her school is 5 km 600 m. How far is it in metres?   Answer: 5600 m

3 Rohit drives 9657 m everyday to reach his office. What is the distance between his house and office in km and m?   Answer: 9 km 657 m

Concrete Stage

1. Use a 'Measuring Jar' of 250 ml to fill a 1 litre bottle, a sauce pan and a mug. How many times did you use the jar to fill each of them? Now, arrange the values in ascending order.
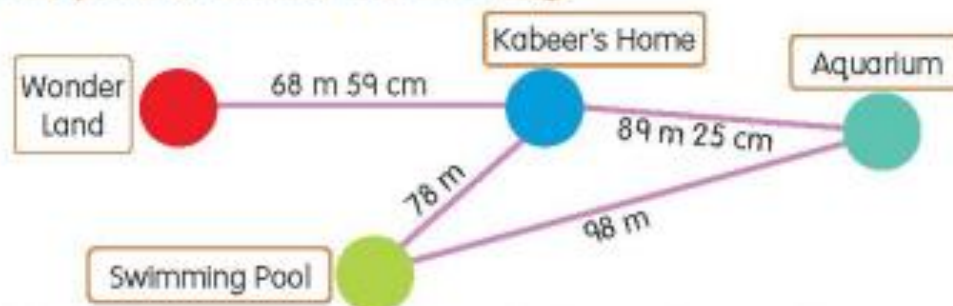
   Answer: Answer may vary.

2. Use a ruler to compare the lengths of the following. Circle the longer objects.

   a Pencil and pen   b Chalk and marker   c Tie and belt

   Answer: Answer may vary.

Pictorial Stage

1. Look at the picture. Answer the following.

   a Which distance is longer—the distance between Kabeer's home and Wonder Land or the distance between Kabeer's home and aquarium?

   Answer: Kabeer's home and aquarium

   b Work out the total distance Kabeer travels from his home to Aquarium if he travels via Swimming pool.

   Answer: 78 m + 98 + = 176 m

POST – ACTIVITY :

CIRCLE THE PROPER UNIT FOR EACH OF THE FOLLOWING

Distance between two continents	Distance of a marathon race	Length of a baby's feet
inches / yard / miles	feet / yards / miles	inches / feet / yards
Length of a dolphin	Width of a towel	Length of a sailboat
inches / feet / yards	inches / yards / miles	inches / yards / miles
Size of a frying pan	Length of golf course	Height of door
inches / feet / yards	inches / yards / miles	inches / feet / miles

SUB TR: HOD: COORDINATOR: PRINCIPAL: