



# Measurement (Length, Mass and Capacity)

## What Learners Will Achieve

- Comparing and ordering objects of different lengths, masses and capacities
- Understanding non-standard and traditional units for measuring length, mass and capacity
- Solving everyday situations by choosing appropriate non-standard units for measurement



## Warm-up

### What we already know

- Terms related to comparison of objects: tall, short, long, big, small, heavy, light, more, less, full, empty
- Basic addition and subtraction

Observe and tick (✓) the object as asked.

Which is longer?



Which is heavier?



Which bucket can hold more water?



## Warm-up Exercise



Answer the following.

- Are bigger objects always heavier?
- Do longer containers always hold more water?

NO  
NO

## Teacher's Support



Provide the students ample opportunities to compare one object with another by identifying their attributes. Give sufficient practice of comparing before moving to non-standard units.

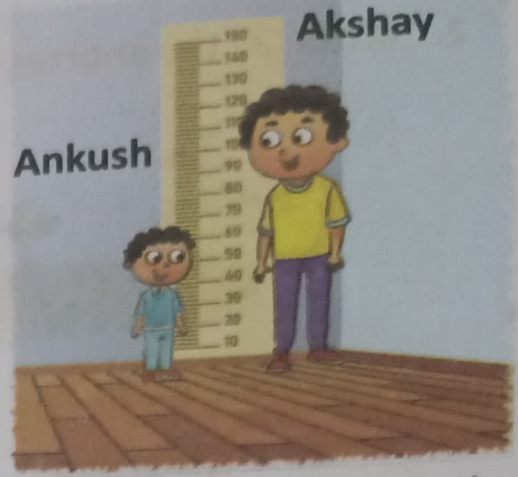
## Comparing Lengths

The teacher asks the students to stand heightwise in a line.

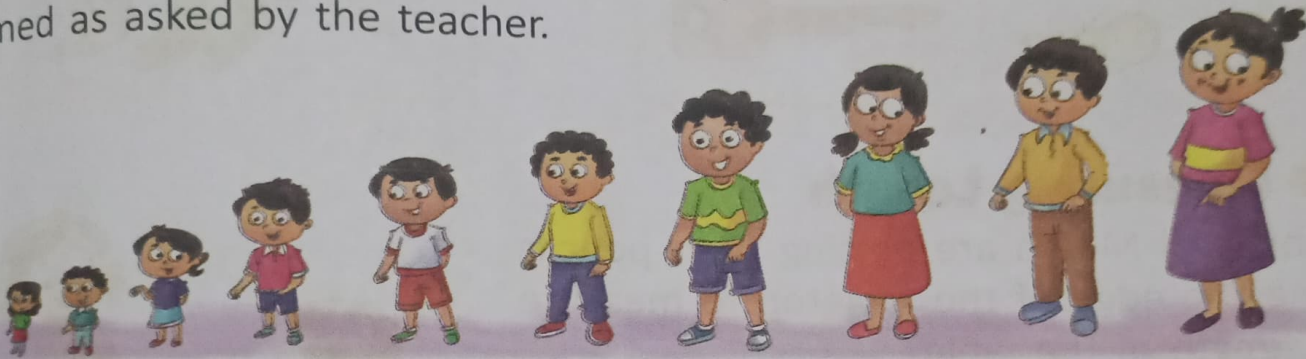
**Akshay to Ankush:** Let us stand next to each other to check who is taller, who is shorter.

Akshay is **taller** than Ankush.

Ankush is **shorter** than Akshay.

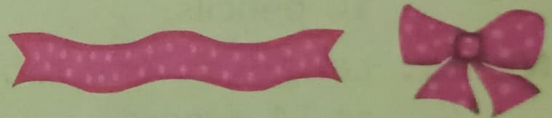


Other students also did the same activity with each other and the line is formed as asked by the teacher.



## Practice

I had a ribbon. I made a hair bow of it as shown.  
Did the length of the ribbon change?



## Checkpoint 8A

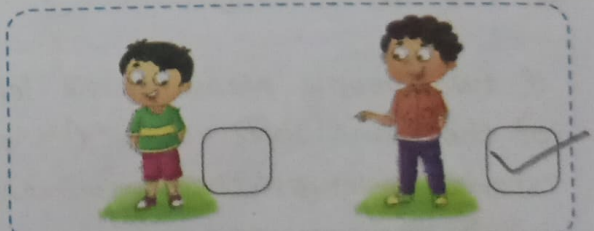


1. Tick (✓) the longer or taller one.

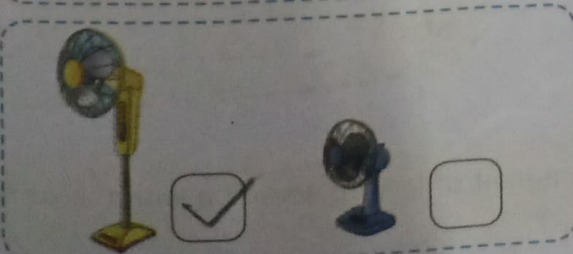
(a)



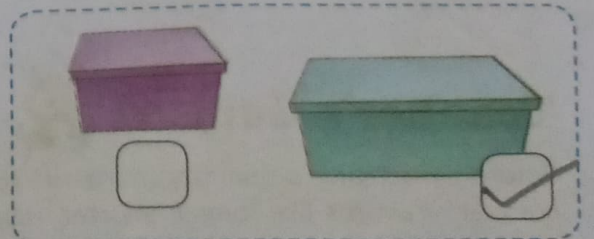
(b)



(c)

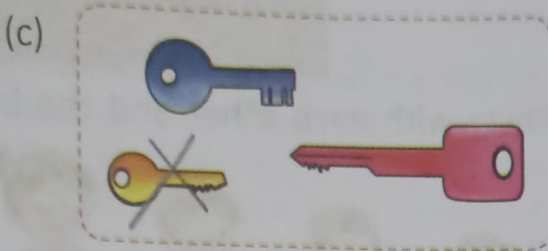
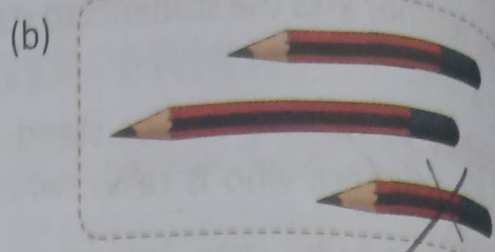
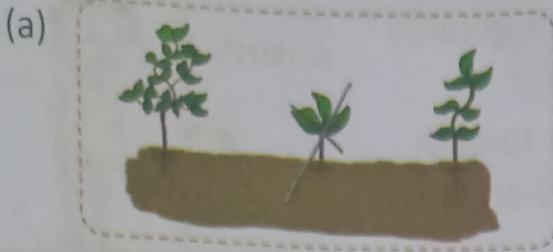


(d)





## 2. Cross (X) the shortest object.



## Measuring Length

Mohit and Meeta are placing their pencils along the edge of the tabletop to measure the length of the table.

**Mohit :** Length of the table is the same as 10 pencils.

**Meeta :** Length of the table is the same as 14 pencils.

Their measurement is different because Meeta's pencil is shorter than Mohit's pencil.

For correct measurement, Mohit and Meeta both should have used pencils of the same length.



If two people measure the length of the same object using the same 'standard length', their measurement will be the same or nearly same.



## Practice



Which object would you use to measure the length of your classroom, a pencil or a walking stick? \_\_\_\_\_


## Teacher's Support





Before associating a quantity (numeric) to the measurement of length, warm up with the correct usage of comparing words like longer, shorter, taller, etc.

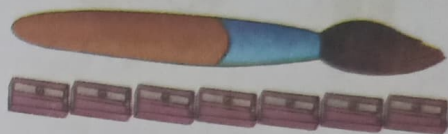
# Checkpoint 8B

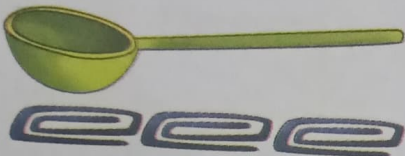
How long are these objects?

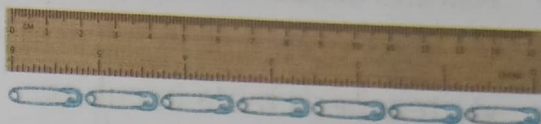
1.   
About 5 paper clips.

2.   
About 4 blocks.

3.   
About 4 erasers.

4.   
About 7 sharpeners.

5.   
About 3 paper clips.

6.   
About 7 pins.


## Measuring Length Using Body Parts

Long ago, people used to measure the length or height of objects using their body parts.

Some body parts that were used as units of length are shown below.

  
Fingertip

  
Cubit

  
Handspan

  
Pace

### Did You Know?

Almost every person, young or old, has about three handspans in their arm length.

My notebook is 2 handspans long.

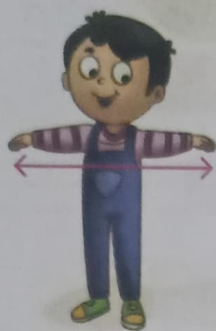




## Let Us Do

**Learning Objective:** Enjoying measuring lengths using body parts

**Preparation:** The teacher explains what a full arm length, a handspan, a foot span, a pace or a cubit is.



Full arm length



Handspan



Cubit



Foot span



Pace or Step

### Working:

- Ask the students to measure the length of the:
  - ✓ classroom wall in full arm lengths.
  - ✓ teacher's table in cubits.
  - ✓ length of the classroom in pace or foot span.
- Let them share and compare their measurements with their friends.

## Checkpoint 8C

**Measure using body parts and fill in the blanks.**

1. My study desk is 5 handspans long.
2. My classroom is 13 paces long.
3. My bed is 5 cubits long.
4. My pencil is 9 fingertips long.
5. The width of my classroom is 24 handspans.

*Some people still use their body parts to measure the length or height of objects.*

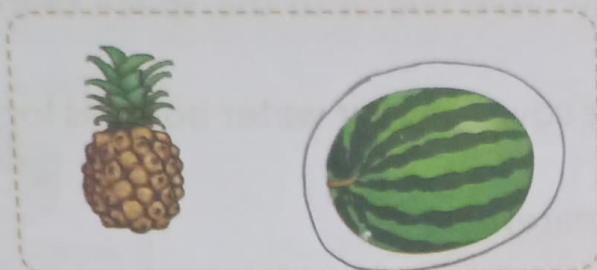
### Teacher's Support

Make the students understand through activities that usage of body parts for measuring lengths does not give the same result.

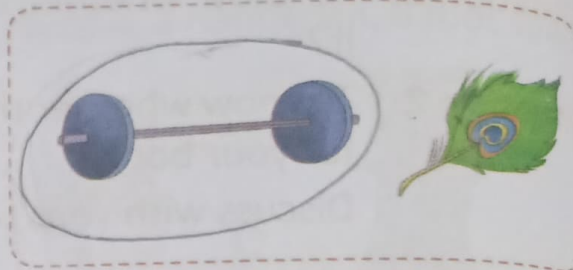
# Checkpoint 80

## 1. Ring the one that weighs more.

(a)



(b)



(c)

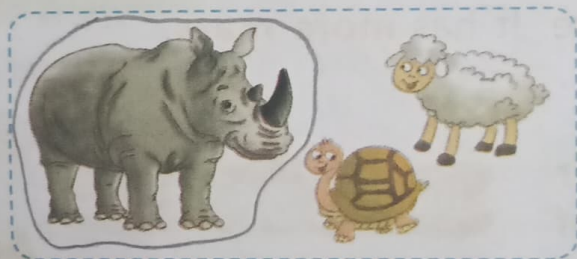


(d)

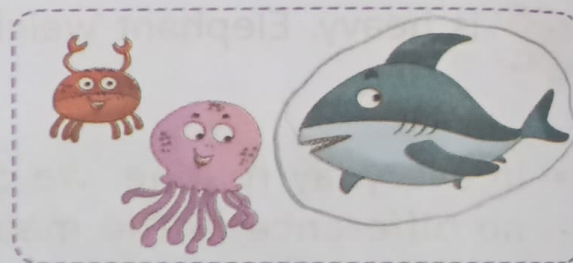


## 2. Ring the one that weighs the most.

(a)



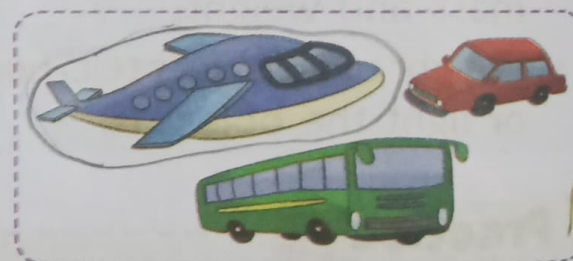
(b)



(c)



(d)



## 3. Look at the three objects in each of the following. Order them 1, 2 and 3 for showing them from the lightest to the heaviest.

(a)



(b)



## 4. The cotton candy is bigger than the apple but has less mass than the apple. Do you agree? Write yes or no. yes





# Measuring Mass

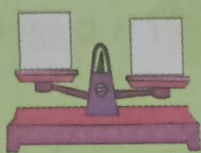
Kripa and Vanshika are playing with their "Toy Balance" and "Blocks" to know how heavy their toys are. When the balance is level, it means the mass on two sides of the balance is equal. Here, the mass of the toy car is 5 blocks.



## Practice



Look at the balance in the picture and write 'H' for heavy and 'L' for light in the correct boxes.



## Watch Your Step!



Bigger objects are heavier and smaller objects are lighter is not always true.

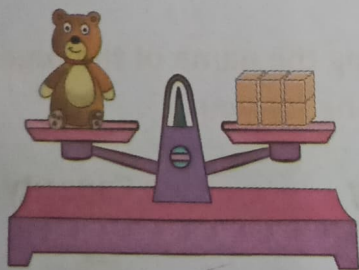


## Checkpoint 8E



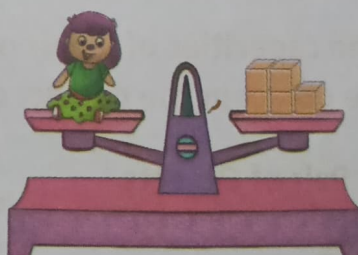
How many blocks is the mass of each toy? Write your answer in the box.

1.



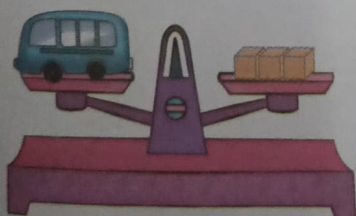
6

2.



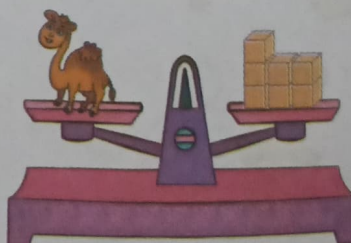
5

3.



3

4.



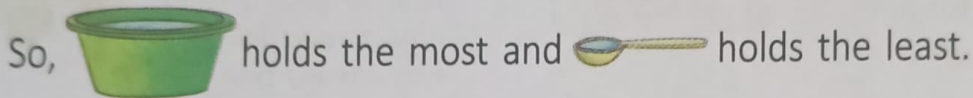
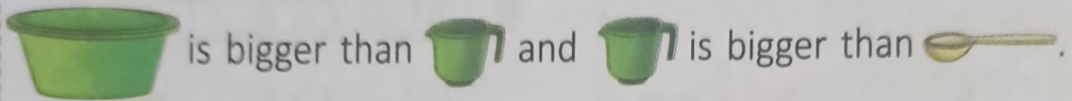
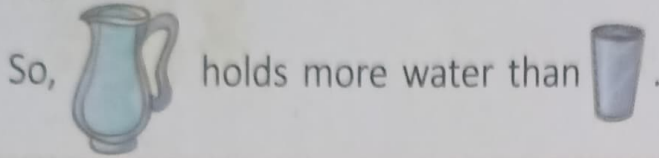
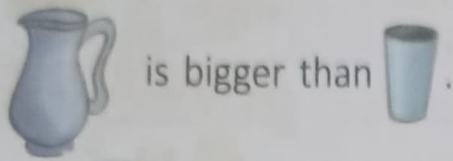
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## Teacher's Support



Visit to a fruit or vegetable shop can be planned with the students to know how weighing is done by the shopkeeper.







## Comparing Capacity











Capacity of a container tells how much liquid it can hold.

### Checkpoint 8F

Compare the capacities of a pair of objects by writing the name of the object or drawing the object in the correct column. One is done for you.

Pair of Objects	More Capacity	Less Capacity
Can  Water bottle 	 <u>Water bottle</u>	 <u>Can</u>
Bucket  Bath tub 	<u>Bath tub</u>	<u>Bucket</u>



Glass 		
Spoon 	<u>Glass</u>	<u>Spoon</u>
Cough syrup bottle 		
Water tank 	<u>Water tank</u>	<u>Cough syrup bottle</u>
Juice bottle 		
Cup 	<u>Juice bottle</u>	<u>Cup</u>
Bucket 		
Glass 	<u>Bucket</u>	<u>Glass</u>

## Teacher's Support



Carry two containers of different capacities in the class. Ask the students to compare (guess) their water bottles with the containers in terms of more, less or same capacity. Then you may check and verify by actually pouring water from one to another whether they are correct or not.

## Measuring Capacity

This teapot holds 3 cups of tea.  
Or we can say that capacity of this teapot is 3 cupfuls.



## Practice



Jug A can be filled using 2 jugs B full of water.

Which jug can hold more water? \_\_\_\_\_



Jug A



Jug B

## Checkpoint 8G



1. Each bottle holds 2 cupfuls of water. Draw and write how many cups will be filled by 2 bottles.

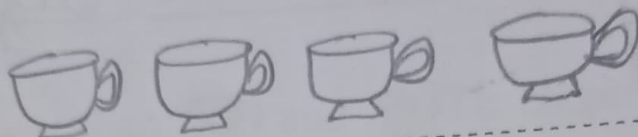


=



=

Draw cups here



2. A clay pot holds 2 jugs of water. Write how many jugfuls is the capacity of the 2 clay pots.



=



= 4 jugfuls

## Teacher's Support



Through examples of practical situations have the students experience that capacity of a container is the space inside it or the water (liquid) it holds.

## Fun Time

### (Real Life Connect)

**Fun with measurement vocabulary — indoor/outdoor measurement hunt.**

Observe the things around you inside and outside your home/classroom. Look for the things that

- are smaller than your fingertip.
- are bigger than your handspan.
- are lighter than a paper clip.
- are heavier than a watermelon.
- have capacity less than your water bottle.
- have capacity more than a bath tub.

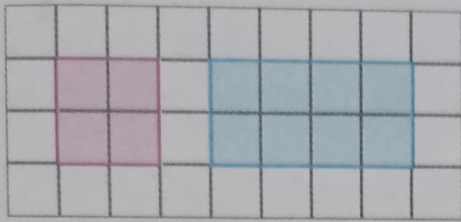
Think of one example of each and discuss with your teacher/parents.



## Let Us Assess

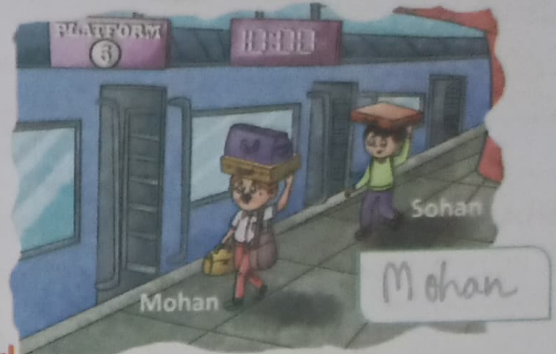
### 1. Write your answer in the box.

- (a) Which shape has more length: square or rectangle?



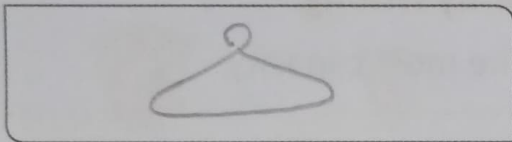
Rectangle

- (b) Who is carrying a heavy bag: Mohan or Sohan?

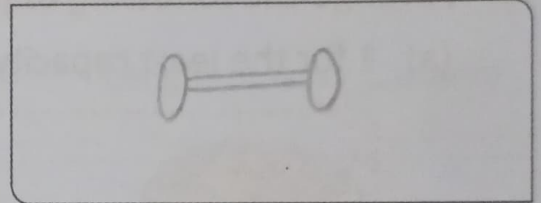


### 2. Draw a suitable object in the box as directed.

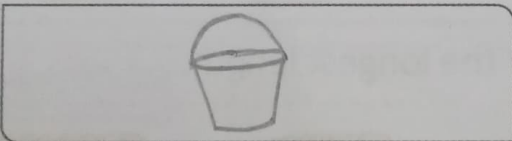
- (a) A straw longer than a



- (b) An object heavier than a

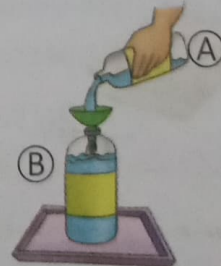
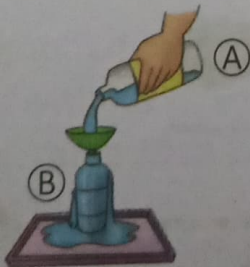


- (c) A container that holds more water than a



### 3. Read the statement and tick (✓) the correct option. One container A is filled with water and transferred into another container B then:


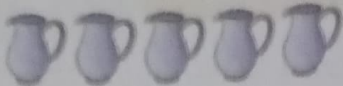

- (a) ✓ the container A holds more than B if B overflows. (b) the container A holds more than B if B is not completely filled.



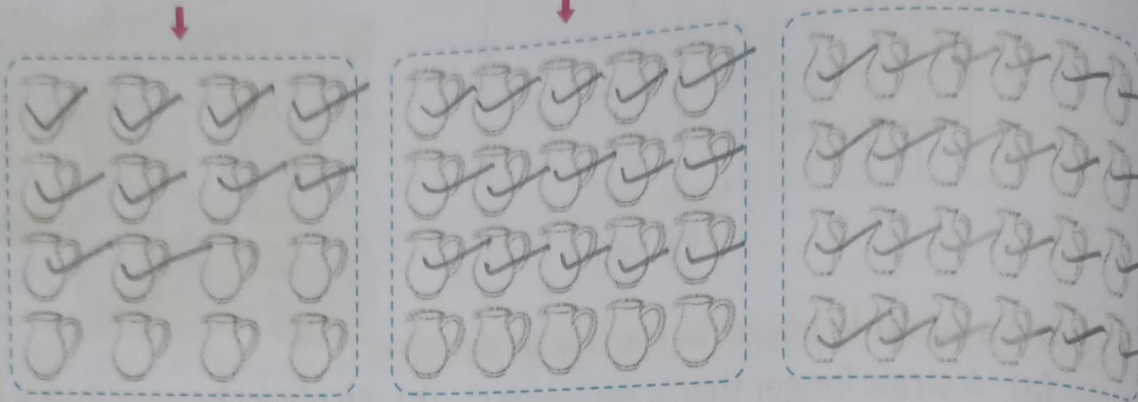
### 4. Fill in the blanks with taller or longer.

- (a) My pencil is longer than the eraser.  
(b) I am taller than my younger brother or sister.

5. Colour the jugs that are needed to fill the given number of buckets.

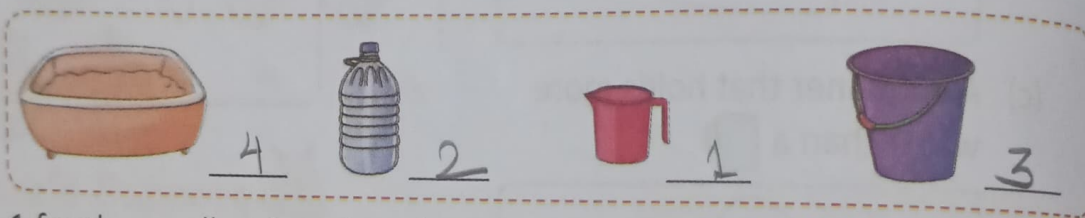
If  =  = 

Then   

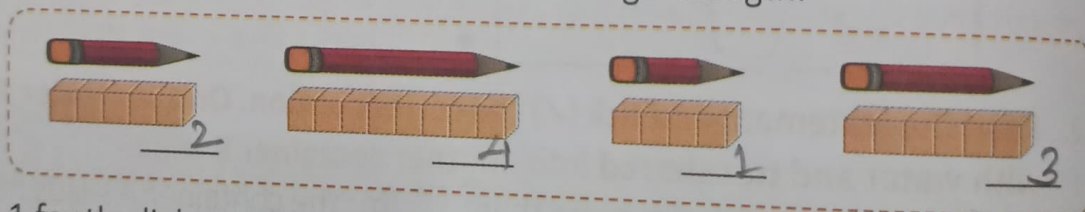


6. Arrange the following objects in order by writing:

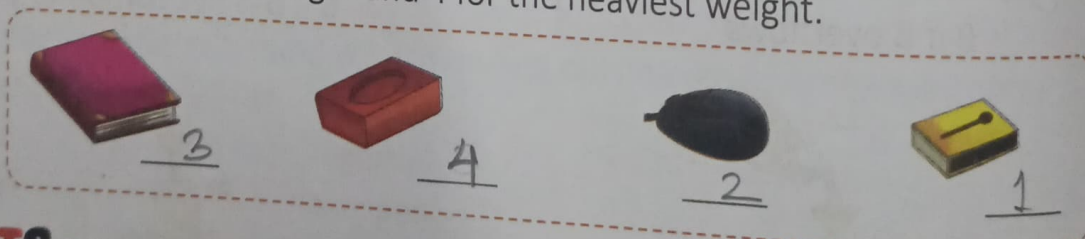
(a) 1 for the least capacity and 4 for the most capacity.



(b) 1 for the smallest length and 4 for the longest length.

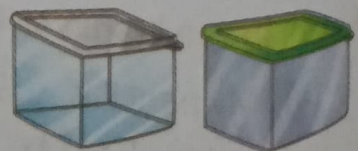


(c) 1 for the lightest weight and 4 for the heaviest weight.



## HOTS

There are two containers. One container is made up of plastic and another is made up of steel. Both are exactly of the same size and shape. Will they hold the same amount of water or the heavier will hold more?



21<sup>st</sup> CS