CHAPTER -12

How Heavy? How Light?

2MARK QUESTIONS

Q1.Find out the total weight they had loaded on the cart.

Answer:

Weights of all the things

Things loaded	Weight	Number of items	Their total weights
A sack of wheat	100 kg	5	5 × 100 = 500 kg
A sack of rice	35 kg	3	3 × 35 = 105 kg
Water tank	50 kg	1	1 × 50 = 50 kg
Almirah	70 kg	1	1 × 70 = 70 kg
A table	10 kg	3	3 × 10 = 30 kg
A chair	5 kg	4	4 × 5 = 20 kg
A mattress	20 kg	2	2 × 20 = 40 kg
Bamboo ladder	10 kg	1	1 × 10 = 10 kg
Pots and pans	10 kg		10 kg

Total weight of all the things loaded = 500 + 105 + 50 + 70 + 30 + 20 + 40 + 10 + 10

= 835 kg

Therefore, the total weight they had loaded on the cart was 835 kg.

Q2.Which things should be removed so that the weight of the load is not more than 700 kg?

Answer:

The weight that should be removed to make the weight equal to 700 kg

= 835 – 700

= 135 kg

From the table,

The weight of 3 sacks of rice = 105 kg

The weight of 3 tables = 30 kg

Total weight of both of these two things = 105 + 30

= 135 kg

Therefore, to make the weight equal to 700 kg, they should remove 3 sacks of rice and 3 tables.

Q3.Now, you also make your own balance. Write down how you made it. Also, draw a picture of your balance in the box below.

Answer:

Do it yourself.

Q4.

Activity

Mannu and Jaiju put a pencil and a geometry box in the two pans of the balance. Which pan will go down? Why? Draw a picture to show it.

Answer:

We know that the geometry box is heavier than the pencil. Hence, the pan that has a geometry box will go down.

Q5.Make pairs of different things and use the balance to decide which is heavier. First, guess which thing will take the pan down and then check your balance.

Answer:

Following are the pairs of different things:

(a) Pen and book

A book is heavier than a pen. So, the pan that has the book will go down.

(b) Glass and spoon

Glass is heavier than a spoon. Hence, the pan that has the glass will go down.

(c) Toothbrush and toothpaste

Toothpaste is heavier than a toothbrush. Therefore, the pan that has the toothpaste will go down.

(d) Socks and trouser

A trouser is heavier than socks. Hence, the pan that has the trouser will go down.

Q6.(a) Make groups of three things. For example – eraser, ball and paper. Use the balance to arrange them in order of weight – the lightest, the one with in-between weight, and the heaviest. Complete the table with at least five examples.

Lightest	*In-between weight*	*Heaviest*
Paper	Eraser	Ball

Answer:

Lightest	*In-between weight*	*Heaviest*
Paper	Eraser	Ball
Orange	Coconut	Pumpkin
Pen	Notebook	Dictionary
Glass	Jug	Bucket
Handkerchief	Scarf	Shawl

(b) Can you find your own weight using this balance?

Answer:

No, we cannot find our own weight.

Q7.Get a new cake of soap. The packet will have the weight written on it. You can use this soap to make your own different weights.

The soap weighs _____ grams (g)

Answer:

The soap weighs 100 grams.

Q 8.Take a small plastic packet. Put it in one pan of the balance. Put the soap in the other pan. Slowly add sand to the packet till the pans are balanced.

Close the packet with a rubber band or string. Now stick a strip of paper; how many grams will both these weigh?

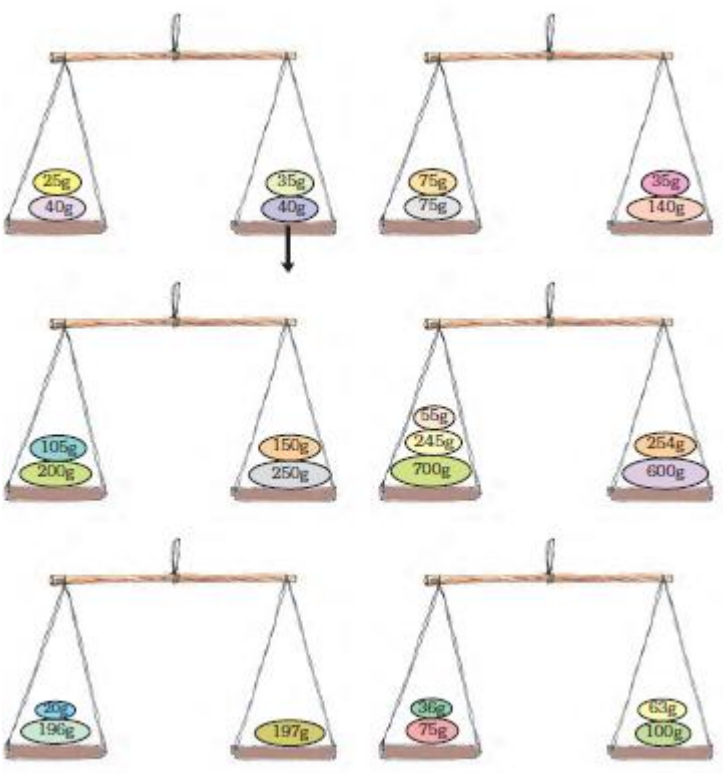
Answer: It is written 100 gm on the packet.

Q9.If you put the soap and the weight you just made together in a pan, how many grams will both these weigh?

Answer:

Both weigh 100 + 100 = 200 gm

Q10.(a) Which pan of the balance will go down? Show by drawing an arrow.



Answer:

Do it yourself.

(b) Is the weight on any of the pans equal to 1 kilogram? Mark it.

Answer:

The left pan of the fourth figure weighs 1000 gm. The pan includes weights measuring 55 g, 245 g and 700 g, i.e.,

55 + 245 + 700 = 1000 g

= 1 kg

Therefore, the left pan of the fourth figure is equal to 1 kilogram.

(c) How many grams are there in 1 kg?

Answer:

We know

1 kg = 1000 g

Hence, there are 1000 grams in 1 kilogram.

5MARK QUESTIONS

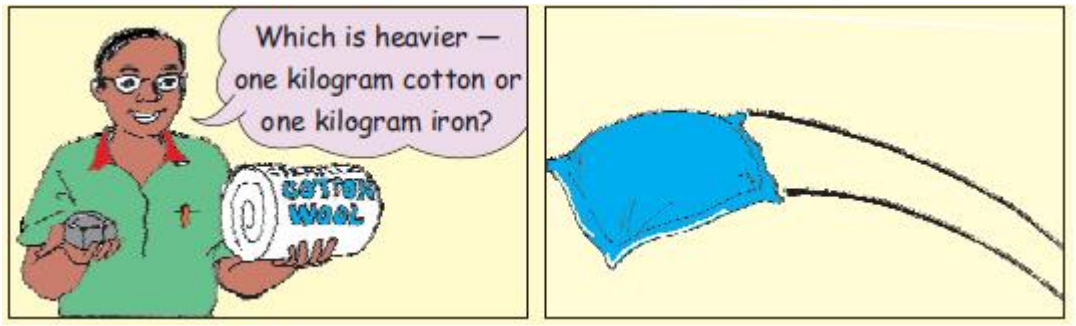
Q1.Name 5 things that we usually buy.

In grams	In kilograms
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Answer:

In grams	In kilograms
Turmeric powder	Tomatoes
Mustard seeds	Sugar
Chilli powder	Wheat
Cardamom	Bananas
Cloves	Rice

Q2.Which is Heavier?



Answer:

Both have equal weight.

Q3.Guess and write the weight of each thing he bought – in g or kg.

Items	*Weight*	
Rice	5	
Sugar	1	
Mustard seeds	10	
Wheat	3	
Dal	500	
Tea	250	
Pepper	25	

Answer:

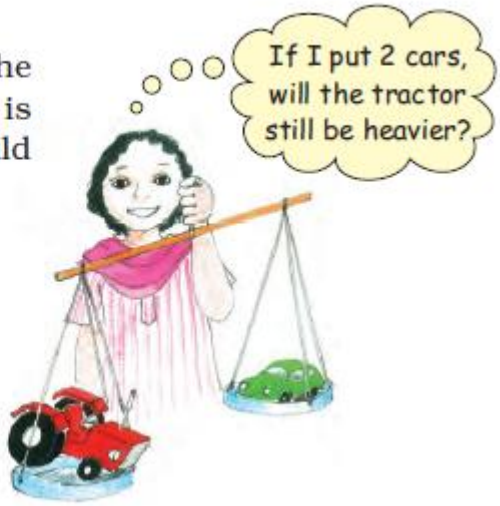
The weights of the given items are as follows:

Items	Weight
Rice	5 kg
Sugar	1 kg
Mustard seeds	10 g
Wheat	3 kg
Dal	500 g
Tea	250 g
Pepper	25 g

Q4.(a)

Car and Tractor

Ritu is weighing her toys. She wants to know if her tractor is heavier than her car. How would you help her to find out quickly?



Answer:

This can be done by keeping the tractor and car in each of the pan of the balance separately. By this, we come to know that the toy which goes down is the heavier toy among these two.

(b) Guess which is the heaviest a real car, a bus or a tractor?

Answer:

A bus is the heaviest.

(c) Which is the heaviest thing you have seen?

Answer:

The heaviest thing I have seen is a rail engine.

Q5.Now imagine what happened next and complete the story. Discuss with your friends how Vaidika's daughter found the weight of the elephant.

Answer:

First, Vaidika's daughter marked how much the boat sank in the river. She then asked them to bring the elephant into the boat. Now, the boat sank deeper, and she marked the new water level on the boat. She requested the king to put the gold on the boat till the water level touches the new raised water level mark when the elephant was on the boat. Now, the king was left with no alternative and had to give the gold equal to the weight of the elephant to Vaidika.

Q6.Anamika wants to weigh this chair using the weighing machine.

Can you suggest a way to do this?

Answer:

First, Anamika should put a flat wooden slab on the weighing machine, on which the chair can be kept easily and record its weight. Then she should place the chair on the slab kept on the weighing machine. The difference in the weight of the chair with the wooden slab and the weight of the wooden slab will give the weight of the chair.

Broken Stones

Abdu sells firewood. There was a stone in his shop which weighed 13 kg. He used it to weigh firewood.

One day the stone fell down and broke into three pieces which weighed – 2 kg, 5 kg and 6 kg.

Q7.Now you show how Abdu will use these stone pieces to weigh.

(a) 4 kg of firewood

Answer:

By keeping a broken stone of 6 kg on the left pan and a broken stone of 2 kg on the right pan with firewood, he can weigh 4 kg of wood. Their difference, i.e.,

6 – 2 = 4 kg will give the weight of firewood.

(b) 3 kg of firewood

Answer:

He can weigh 3 kg of firewood by keeping the broken stone of 5 kg on the left pan and the broken stone of 2 kg on the right pan with firewood. The difference in weight, i.e., 5 – 2 = 3 kg, will balance the two pans of balance by firewood.

(c) 7 kg of firewood

Answer:

He can weigh 7 kg of firewood by keeping the broken stone of 5 kg and 2 kg on the left pan and firewood on the right pan.

भारतीय डाक
INDIA POST

Postal Rates

Postal Items	*Postal Rates (in Rs)*
Single post card	0.50
Printed post card	6.00
Inland Letter	2.50
Letter weighing –	
i) 20 grams or less	5.00
ii) For every additional 20 grams	2.00
Parcel weighing –	
i) 50 grams or less	5.00
ii) For every additional 50 grams	3.00

Q8.Have you ever been to a post office?

Answer:

Yes.

Q9.What different things do people go there for?

Answer:

People go to the post office for the following reasons:

(i) To post the letters

(ii) To send money orders

(iii) For banking

(iv) To purchase postcards, inland envelop, stamps, etc.

Q10.How much does a postcard cost?

Answer:

The cost of the postcard is Rs 0.50.

Multiple-Choice Questions (MCQs):

Q1.Which unit is commonly used to measure weight?

A) Meters

B) Liters

C) Grams

D) Kilometers

Answer: C) Grams

Q2.If an object has a mass of 500 grams, how would you describe its weight?

A) Heavy

B) Light

C) Medium

D) Impossible to determine

Answer: A) Heavy

Q3.What tool is often used to measure the weight of small items in grams?

A) Ruler

B) Scale

C) Stopwatch

D) Thermometer

Answer: B) Scale

Q4.Which of the following objects is likely to be the heaviest?

A) Feather

B) Paperclip

C) Rock

D) Balloon

Answer: C) Rock

Q4.If an object weighs 250 kilograms, what is its weight in grams?

A) 250 grams

B) 25,000 grams

C) 2,500 grams

D) 2.5 grams

Answer: B) 25,000 grams

Fill in the Blanks:

Q1.The measure of the amount of matter in an object is called _____.

Answer: mass

Q2.To compare the weights of objects, we use a _____.

Answer: scale

Q3.If an object has a mass of 1 kilogram, its weight is approximately _____.

Answer: 9.8 newtons (on Earth)

Q4.The opposite of heavy is _____.

Answer: light

Q5.A common unit for measuring larger masses, such as a person's weight, is _____.

Answer: kilograms