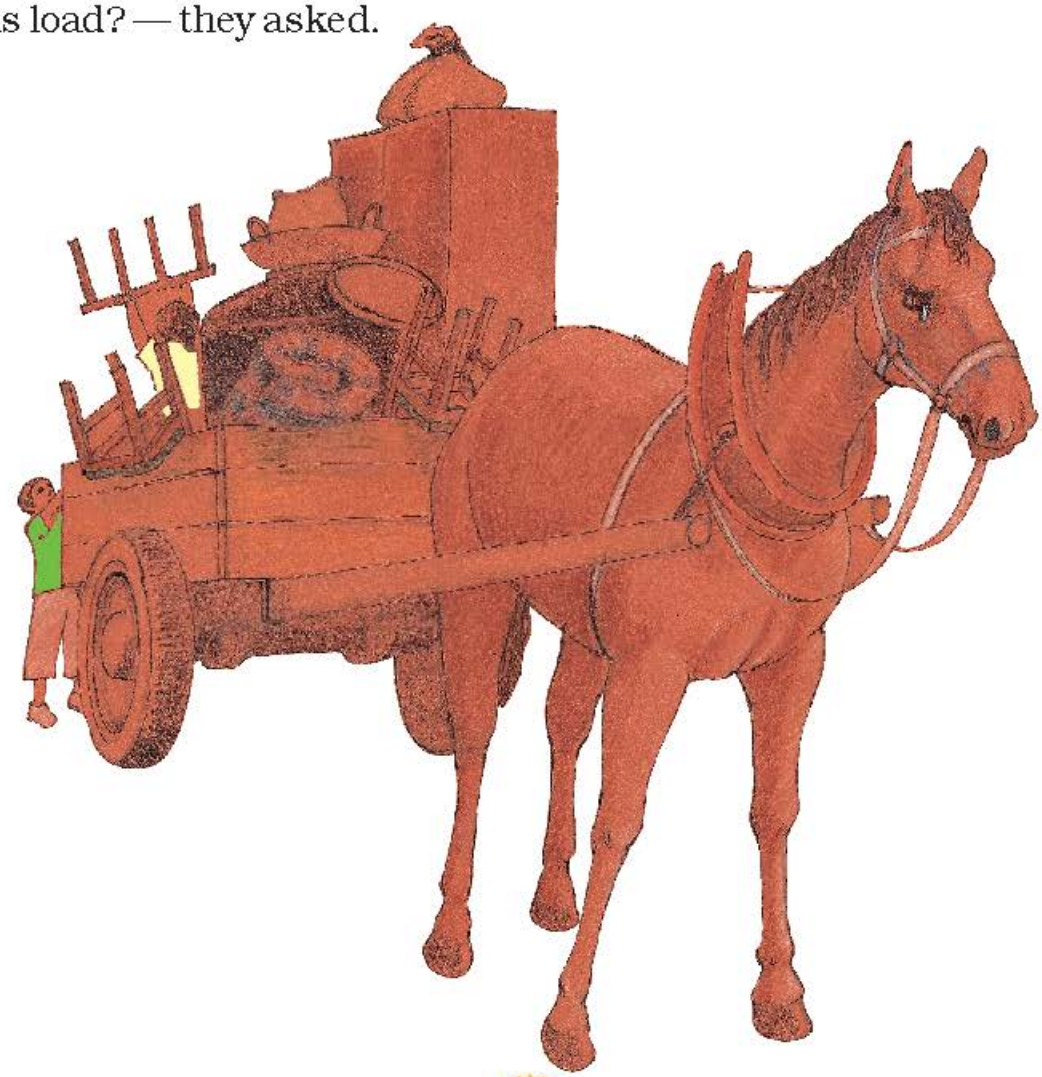
12 How Heavy? How Light?

0425CH12

Jaiju and Mannu were shifting house. They loaded all their things on a horse-cart. There were many things like — a water tank, five sacks of wheat, three tables, an almirah, four chairs, two mattresses, three sacks of rice, a bamboo ladder, pots and pans.

When they were ready to move, the horse refused to start. They wondered why. Their father said that this horse was not well and would not pull a load heavier than 700 kg. Oh! But how heavy is this load? — they asked.



Father gave them some idea of the weight of each thing.

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

Now they decided to remove a few things from the cart.

* Which things should be removed so that the weight of the load is not more than 700 kgs?

Thing loaded	*Weight*
A sack of wheat	100 kg
A sack of rice	35 kg
Water tank	50 kg
Almirah	70 kg
A table	10 kg
A chair	5 kg
A mattress	20 kg
Bamboo ladder	10 kg
Pots and pans	10 kg



The things which were loaded on the cart were big in size and also very heavy. To measure the weight of such heavy and big things, we need a big balance.

But Jaiju and Mannu wanted to make their own balance. They collected a few things — a stick, two lids and a thick thread. They made this balance.



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

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.



What is heavier?

* 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 with your balance.

What is the heaviest?

* 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, the heaviest. Complete the table with at least five examples.

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

* Can you find your own weight using this balance?

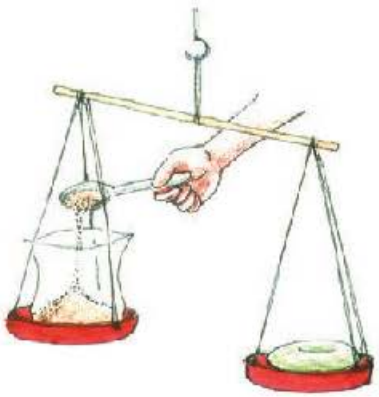
The balance children make will not be very accurate but will be good enough to compare weights which are different from each other.

Making Weights

Do this activity in pairs. You need a balance, weights, a cake of soap, plastic packets, sand and rubber bands. You can also take help of an older person.

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).



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 and write '____ g' on it.



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

Now make different weights — 150 g, 200 g and 250 g. You can use soaps of different weights for this.





Also make some bigger weights of 500 g, 1000 g, and 750 g.

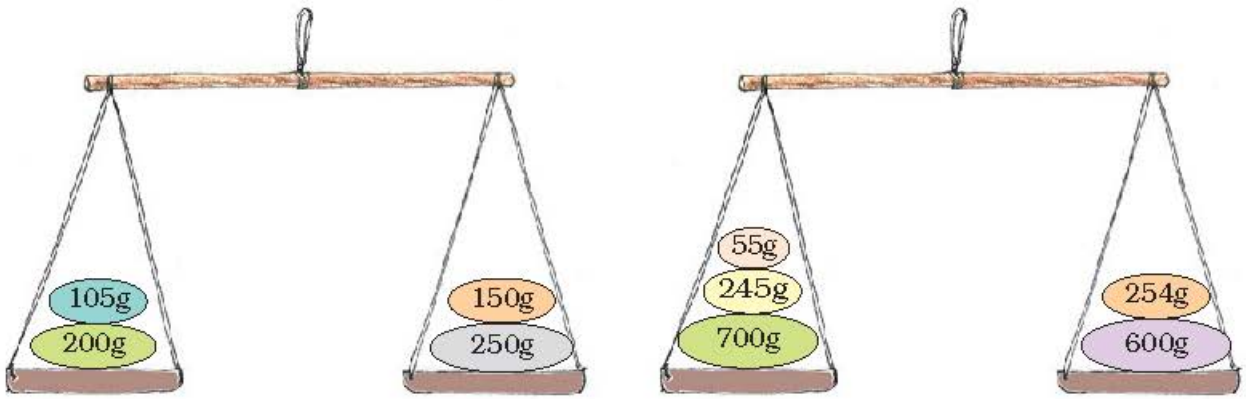


* Use your weights to weigh different things and write in your notebook.

Practice Time

* Which pan of the balance will go down? Show by drawing an arrow.







* Is the weight on any of the pans equal to 1 kilogram? Mark it.
* How many grams are there in 1 kg?

Grams and Kilograms

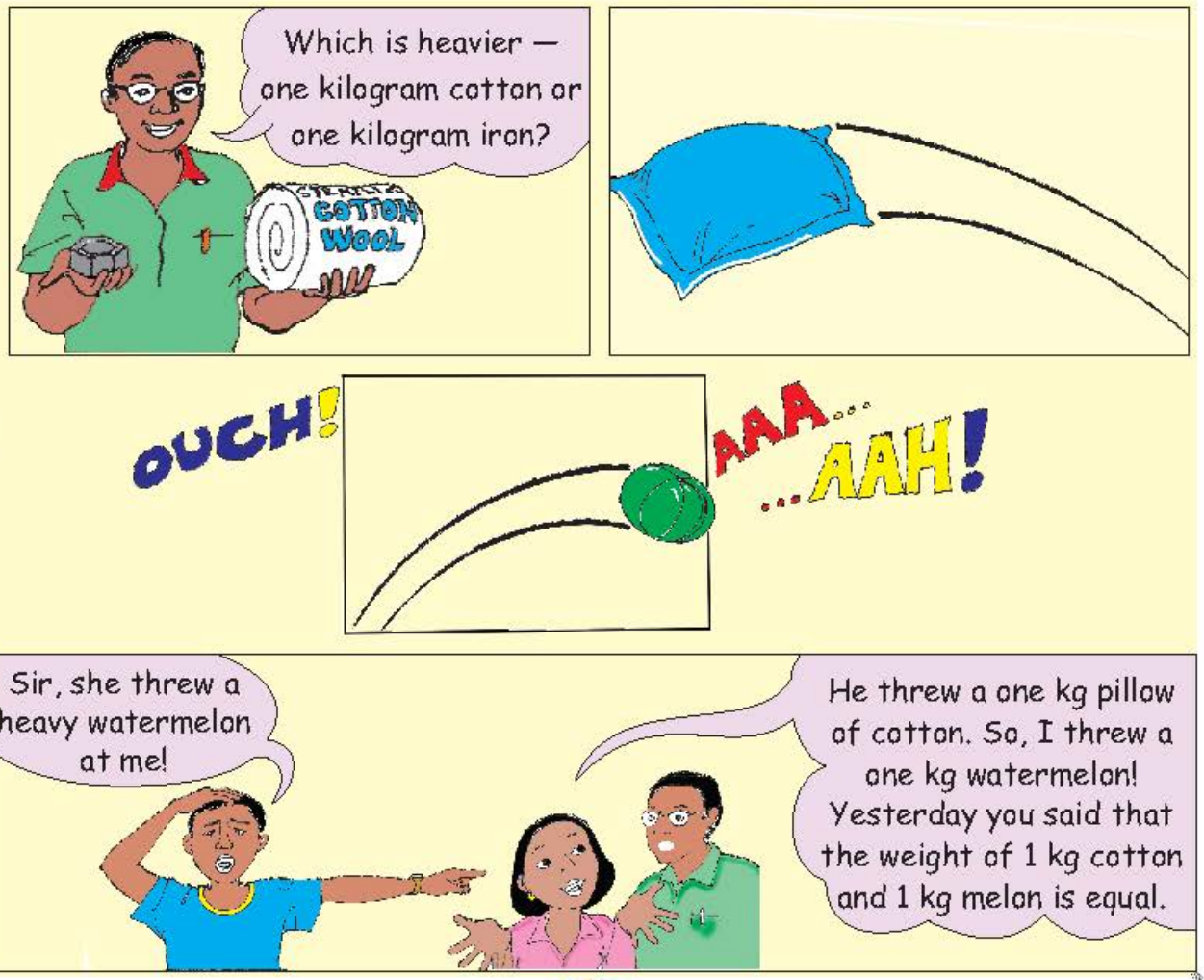


Name 5 things that we usually buy —



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

Which is Heavier?



Dinesan Went Shopping

Dinesan went to a shop and bought some things.

His younger brother cut the end of the bill where the weights were written.

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



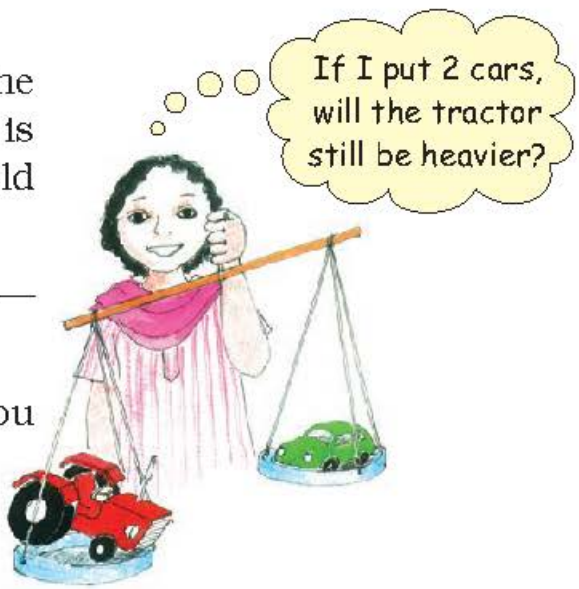
Items	*Weight*	
Rice	5	
Sugar	1	
Mustard seeds	10	
Wheat	3	
Dal	500	
Tea	250	
Pepper	25	

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?

Guess which is the heaviest — a real car, a bus or a tractor?

Which is the heaviest thing you have seen?

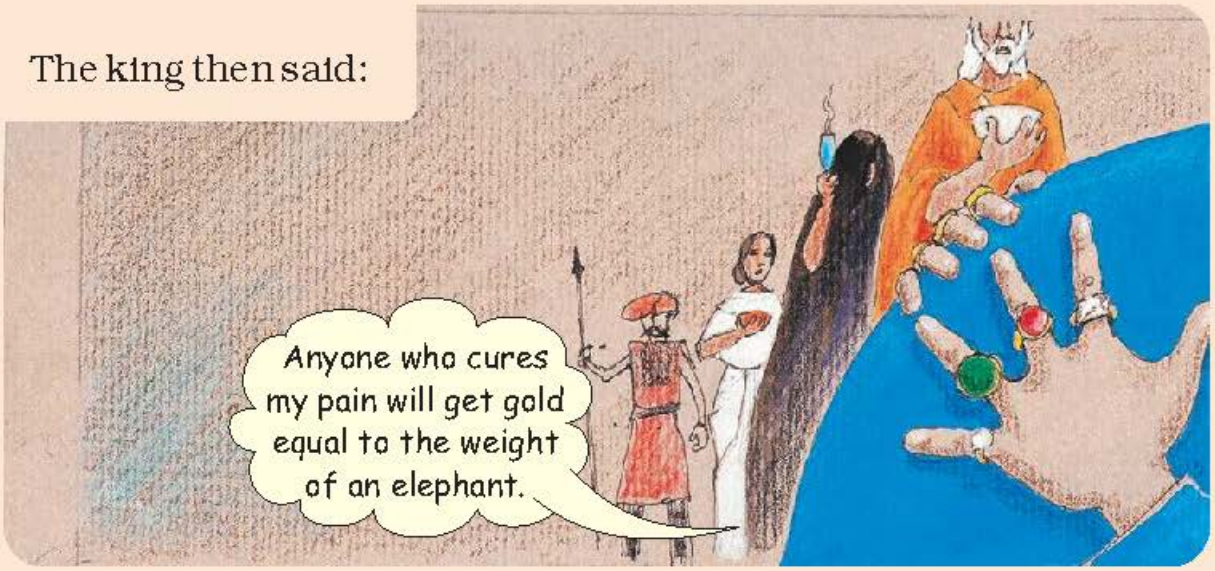


Elephant's Weight

Once a king had pain in his stomach. None of the palace doctors could cure his pain.



The king then said:



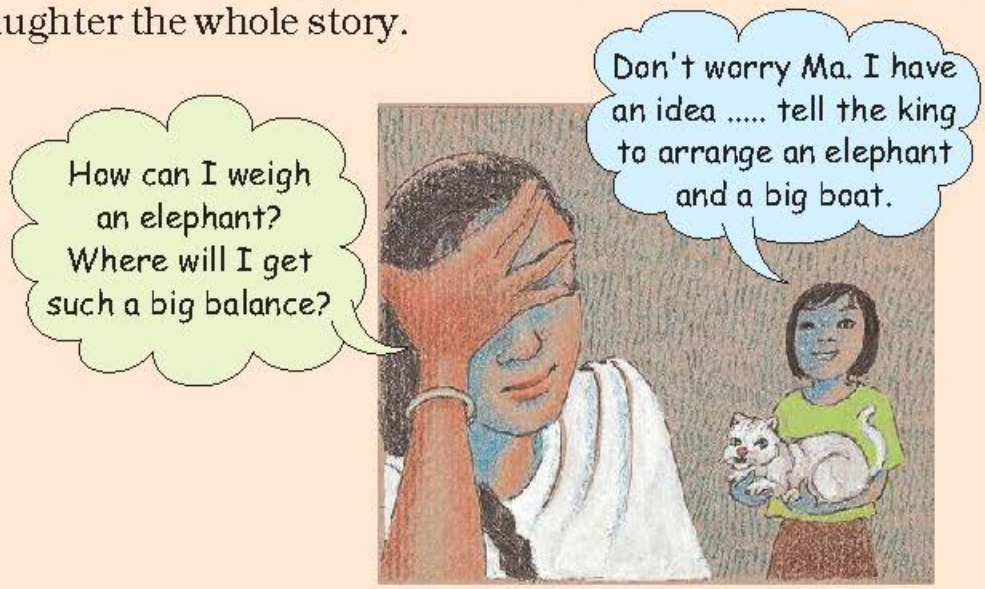
On hearing this, doctors from all over the country came. But only Dr. Vaidika could cure him.



But, the greedy king didn't want to give her the gold. So, he thought of a trick.



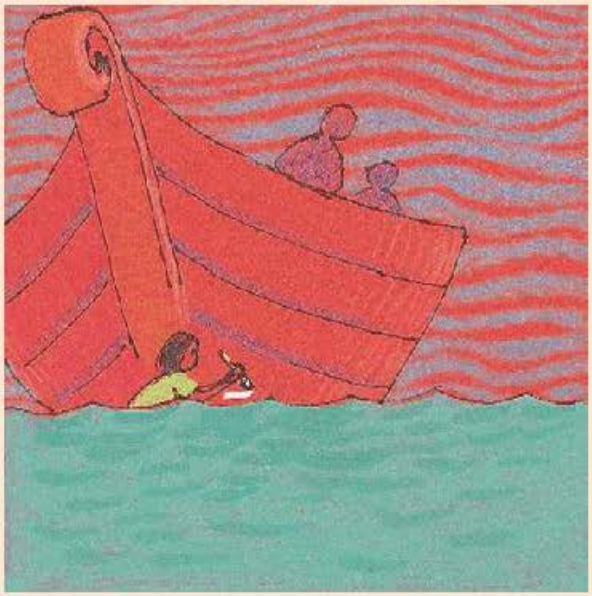
Vaidika was unhappy when she reached home. She told her daughter the whole story.



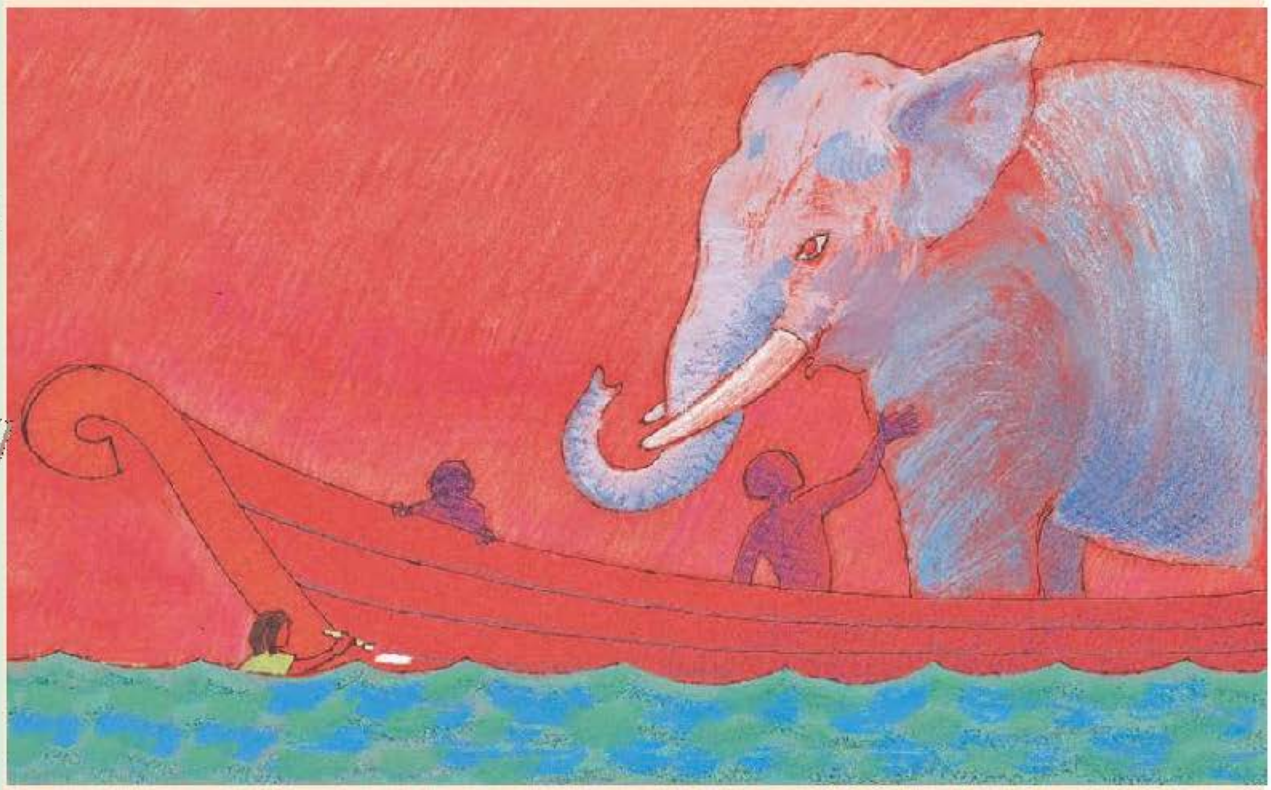
Next morning, Dr. Vaidika invited the king near a river. The king came with an elephant and a big boat.



Vaidika's daughter went into the river. She marked on the boat how much it sank in the river.



Then she asked them to bring the elephant into the boat. The boat sank deeper. So she marked the new water level on the boat.



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

How Much the Chair Weighs

Anamika wants to weigh this chair using the weighing machine.





Can you suggest a way for doing this?



Broken Stones

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

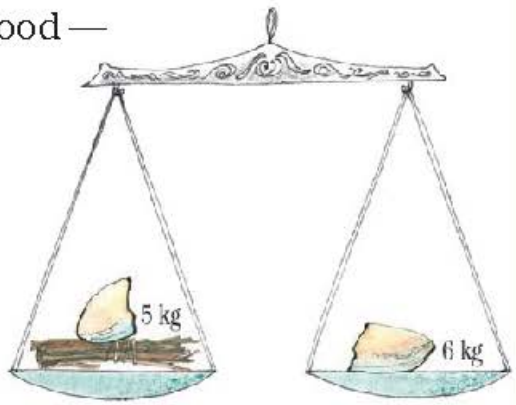
One day the stone fell down and broke into three pieces which weighed – 2 kg, 5 kg and 6 kg.



But Abdu was very smart. He used those three pieces to weigh firewood of all weights — from 1 kg to 9 kg.

Here is how Abdu weighed 1 kg of firewood —





✤ Now you show how Abdu will use these stone pieces to weigh —



a) 4 kg of firewood



b) 3 kg of firewood



c) 7 kg of firewood



Post Office

Have you ever been to a post office? _____

What different things do people go there for?

How much does a postcard cost? _____

How much does an inland letter cost? _____



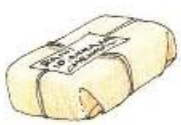
Postal Rates

Postal Items	*Postal Rates (in ₹)*
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

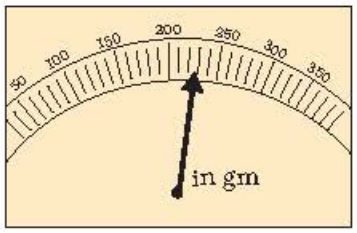


Look at the postal rates given in the chart.

1. How much will you have to pay for stamps on a letter weighing 50 grams? _____
2. Akash wants to send a parcel of the Math Magic textbook to his friend Rani in Chennai. The book weighs 200 g. See the chart to find the cost of posting the book. _____



3. Read the weight shown in the picture. Find out the cost of sending a parcel of that weight.













Parcel weight = _____

Cost of stamps = _____

How Many Stamps?



Rahul needs stamps of Rupees 25 for his parcel. He went to the post office. Only stamps of ₹ 1, ₹ 2, ₹ 5 and ₹ 10 were there at that time. Using those stamps in how many different ways can he make ₹ 25?

Can you show five different ways? What is the heaviest parcel he can send using stamps of ₹ 25?

Our Weight Together

A frog was struggling to escape from the mouth of a crow. How can I escape? — the frog thought. Suddenly a trick came to his mind. He asked the crow — Are you good at arithmetic? If yes, then I will ask you a problem.



Your weight is 650 g and I am only 145 g. How much do we weigh together?

The crow was good at mathematics, so he happily opened his beak to answer.

What happened after that? So what was the answer the crow wanted to give? _____

Am I Fit or Fat?

The chart shows the height and weight of children between 6 and 10 years old.

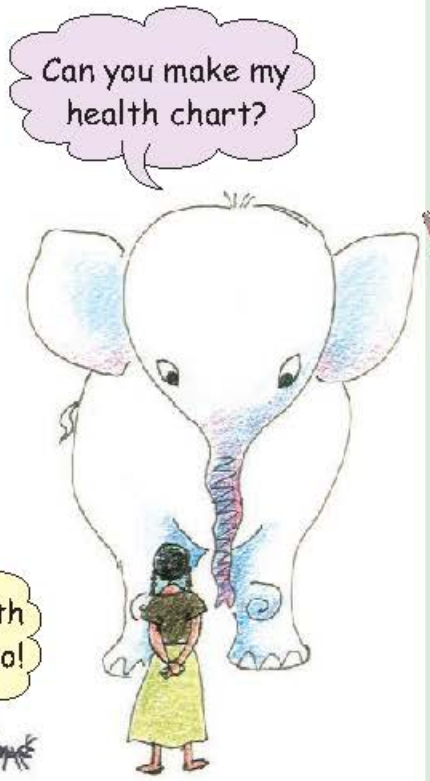




Name	*Age*	*Height*	*Weight*
Temshula	6	3 feet, 7 inches	16 kg
Sreekunth	10	4 feet, 3 inches	23 kg
Rabiya	6	3 feet, 10 inches	17 kg
Vineet	8	3 feet, 11 inches	19.5 kg
Kavita	9	3 feet, 10 inches	20 kg

Now, you also fill the table by finding out the age, height and weight of any five friends.

Name	*Age*	*Height*	*Weight*

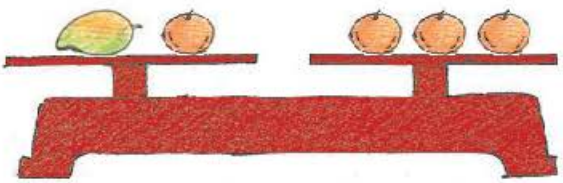


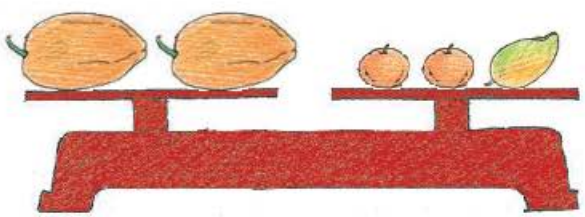
Puzzle

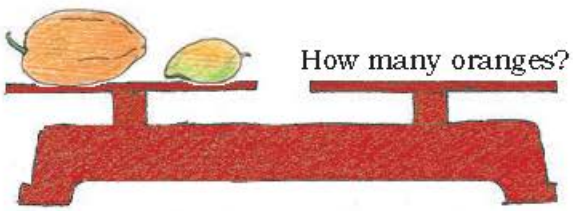
How Many Oranges?

All oranges have equal weight. The two papayas have the same weight. The weights in the first and second balances are equal.

How many oranges balance the weight in the third?







How many oranges?

Find That Marble

There are 3 marbles of the same size but one marble is slightly heavier or lighter than the other two. Can you find which is that marble and if it is heavier or lighter? You can use a balance only two times.

