Division

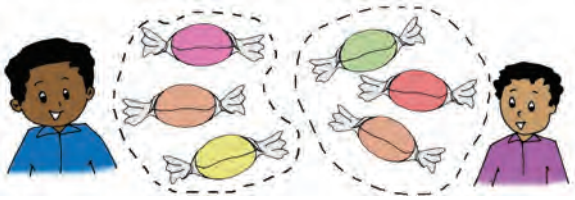
Making equal shares

Raju : My mother has given me 6 sweets. Let's share them equally.

Sanju : Ok, you take one, I'll take one, turn by turn.

Raju : I got 3 sweets.

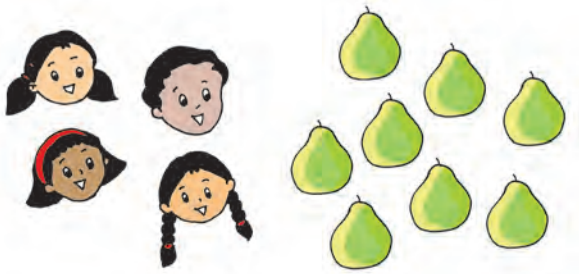
Sanju : I also got three. So, we got three sweets each.



Total sweets	Sweets for each
6	3

✤ These are pictures of some boys and girls. Count to see how many children there are. There are some guavas too. They have to be shared equally among the children. How will you do that ?

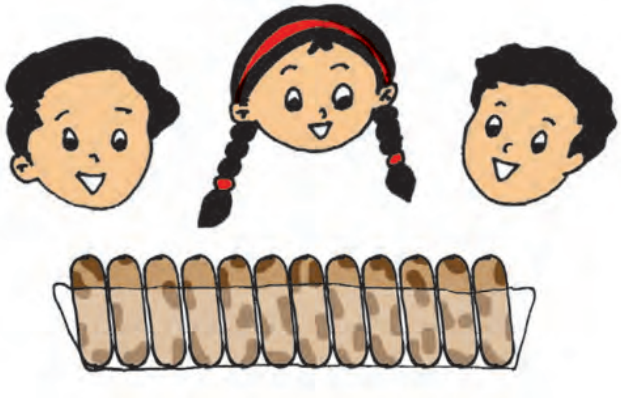
Total guavas	Suma	Raju	Meena	Anju



How many guavas did each child get ?

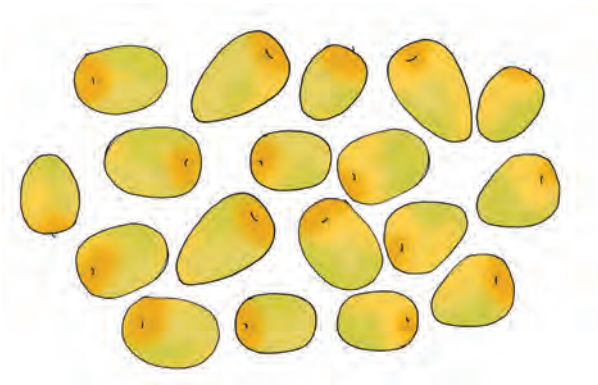
✤ There are 12 biscuits in a packet. Equal shares must be given to three children – Raju, Sanju and Anita.

Total biscuits	Each one's share		
	Raju	Sanju	Anita



On sharing the biscuits equally, each one got ____ biscuits.

- 18 fruits are shown in the picture alongside. If they are shared equally between two people, how many will each one get ?
- If 18 fruits are shared by 3 people equally, how many will each get ?
- If 18 fruits are shared equally by 6 people, how many does each one get ?



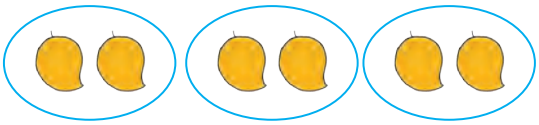
Forming groups or making shares or lots

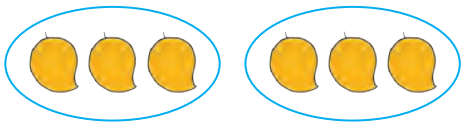
Mother : I have brought 6 mangoes.
Sucheta, make lots of 2 mangoes to a lot.
How many lots do you get ?

Sucheta : 3 lots. Now, shall I make lots of 3 mangoes each ?

Mother : Sure. Do it and see how many lots there are.

Sucheta : There are only 2 lots this time.





The table below shows how Sucheta distributed the mangoes.

Total number of mangoes	Mangoes in each lot	Total number of lots
6	2	3
6	3	2

- **Mark the lots in the picture and complete the table.**

Total number of mangoes	Mangoes in one lot	Total number of lots	
8	2		
8	4		

✤ **Mark the lots in the picture and complete the table.**

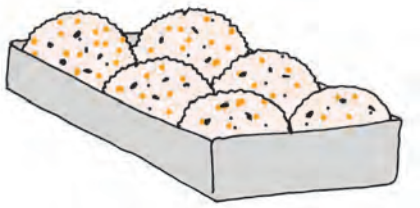
Total number of cucumbers	Number of cucumbers in one lot	Total number of lots	
10	1		
10	2		
10	5		
10	10		

✤ There were 12 children with Tai. She said to them, 'Let's play the game of making groups. You must make groups of as many children as the number of fingers I show'.

- Tai showed 4 fingers.
  How many groups were formed ?
- Tai made a hand-sign of 3 fingers.
  How many groups were formed ?
- Tai showed 2 fingers.
  How many groups were formed ?
- Tai made a hand-sign of 6 fingers.
  How many groups were formed ?

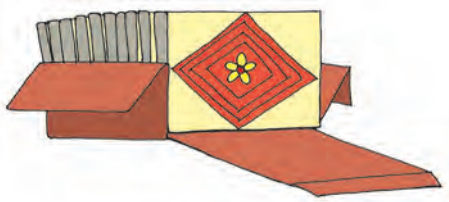
✤ One carton can hold 6 laddoos. How many cartons will be needed to pack 48 laddoos ? Let's see if you can work that out.

Total laddoos	Number of laddoos in one carton	Number of cartons
48	6	

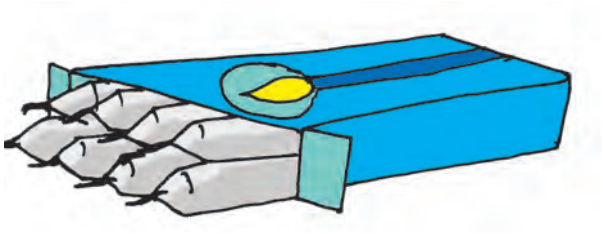


✤ One carton can hold 10 tiles. A certain room needs 60 tiles for the floor. How many cartons of tiles will be needed ?

Total number of tiles	Number of tiles in one carton	Number of cartons
60	10	



✤ One carton contains 8 candles.
How many cartons do we need for packing 24 candles ?

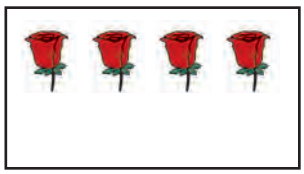


Making equal lots from a collection of objects is called division.

✤ Subtracting the same number again and again

From these 8 flowers, we shall take away 2 every time.

The first time, we take away 2 flowers from 8.
8 – 2 = 6 6 flowers left.



The second time, we take away 2 flowers from 6.
6 – 2 = 4. 4 flowers left.

The third time, we take away 2 flowers from 4.
4 – 2 = 2. 2 flowers left.

The fourth time, we take away 2 flowers from 2.
2 – 2 = 0. No flowers left.
In other words, zero (0) flowers are left.

Four is the maximum number of times that we could take away 2 flowers at a time from 8 flowers.

✤ The doctor gave Nandu 15 pills and told him to take 3 pills every day. How many days does Nandu have to take the pills ? Draw pictures as shown above to show it.

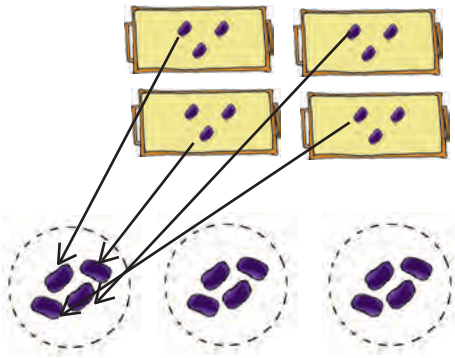
Tai : I have brought some *jamuns*. Who is present today ?

Sonu : Three of us – Salma, Tony and me.

Tai : Count these *jamuns*. And share them equally among the three of you.

Sonu : These are 12 *jamuns*. I'll distribute them giving each, one *jamun* at a time.

Tai : How many did each of you get ?



Sonu : Each of us got four.

Salma : May I distribute them in a different way ?

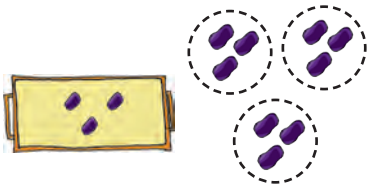
Tai : Certainly. How do you want to do it ?

Salma : Three of us have to share them, so I'll make groups of three *jamuns*. Then each of us will take one from each group.

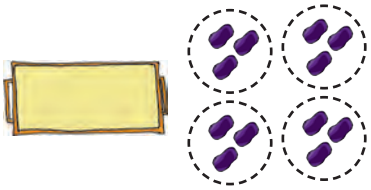
Tony : Oh, yes ! One from each group means 4 *jamuns* for each of us.

Tai : And, did you notice this? When Salma was making the groups, she was taking away three *jamuns* every time. In other words, from 12, she was subtracting 3 again and again.

Salma : Yes, Tai! And when she did this four times, no *jamuns* were left.



Tai : So, now you must have understood that sharing twelve *jamuns* equally among three or making groups of three *jamuns* from them is the same as taking away 3 *jamuns* from 12 again and again. The outcome of all these actions is the same.



Tony : Yes, Tai.

Tai : That is why all these actions are given the same name in mathematics, which is division.

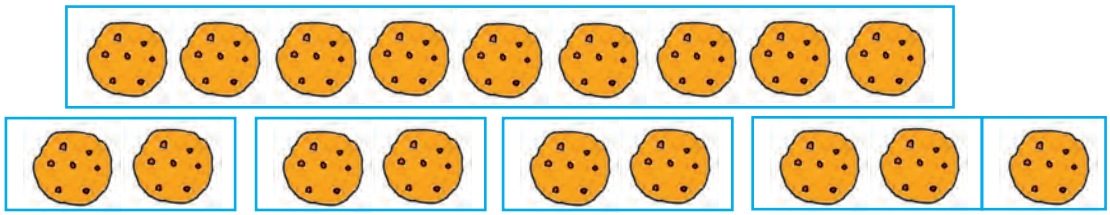
- Division means distributing things equally.
- Division means making equal groups of things.
- Division also means taking away the same number of things again and again from a certain number of things.

Tony : Tai, we know the method of writing a multiplication using a sign. There must be a sign for division too!

Tai : This is the sign for division '÷'. This is how we use it, 12 ÷ 3 = 4. It is read as '12 divided by 3 is equal to 4'.

Salma : I understood ! 4 threes are 12. It means that when we put together 4 groups of 3 things each, we get 12 things. And if we make groups of 3 things using 12 things, the number of groups we get is 4.

Tai : Excellent. When making groups of three, we say the 3 times table up to 12. We come to know how many groups of three we can get from twelve. When making 3 equal shares out of 12 also, we say the 3 times table. When we come to '3 fours are 12' we know that each one will get 4 things.



There are 9 laddoos in one box. They have to be shared equally by four people. After giving 2 laddoos each to 4 people, 1 laddoo remains. It means that if we have to give whole laddoos, we cannot make equal shares. Had there been only eight laddoos in the box, there would be no laddoos left over after the equal shares had been made. Sometimes, things get left over after making equal shares containing whole things only. This number of remaining things is called the 'remainder'. Look at the vertical arrangement which shows numbers instead of things.

Shared among 4 persons.

	2	Number of laddoos in each share
4)	9	Number of laddoos to be shared
−	8	Number of laddoos shared
	1	Remaining laddoo

✤ **12 flowers shared equally among 4 children.**

(Quotient)
3 Flowers each one got
(Divisor) 4) 12 (Dividend) Total flowers
− 12 Flowers shared
0 (Remainder) Flowers left.

Each one gets 3 flowers, because 4 threes are 12.
This division is written vertically as shown alongside.
12 divided by 4, remainder 0.

✤ **15 laddoos were shared among 5 children.**

3 (Quotient)
(Divisor) 5) 15 (Dividend)
− 15
0 Remainder

Each one gets three laddoos.
Because 5 threes are 15.
The number of laddoos that each one gets is called the 'quotient'.
All the laddoos are finished. Nothing remains.
That is, remainder 0.

✤ **22 rupees to be distributed equally among 5 people.**

5) 22
4 Quotient
Divisor 5) 22 Dividend
− 20
2 Remainder

Tony : Here, 22 is the dividend and 5, the divisor.
Salma : Here, 5 is the divisor, so we shall use the 5 times table. 5 fours are 20 and 5 fives are 25.
Tony : We can't give away 25 rupees from 22. But we can give 20 from 22.
Sonu : So, we use 5 fours are 20 and we write 4 in the units place above the line.
Nandu : We mustn't write this 4 in the tens place because each one gets 4 rupees and not 4 tens. That would be 40 rupees !

✦ **Divide.**

4
9) 36
− 36
0

7) 42

8) 64

6) 54

7
8) 58
− 56
2

6) 49

5) 47

7) 29