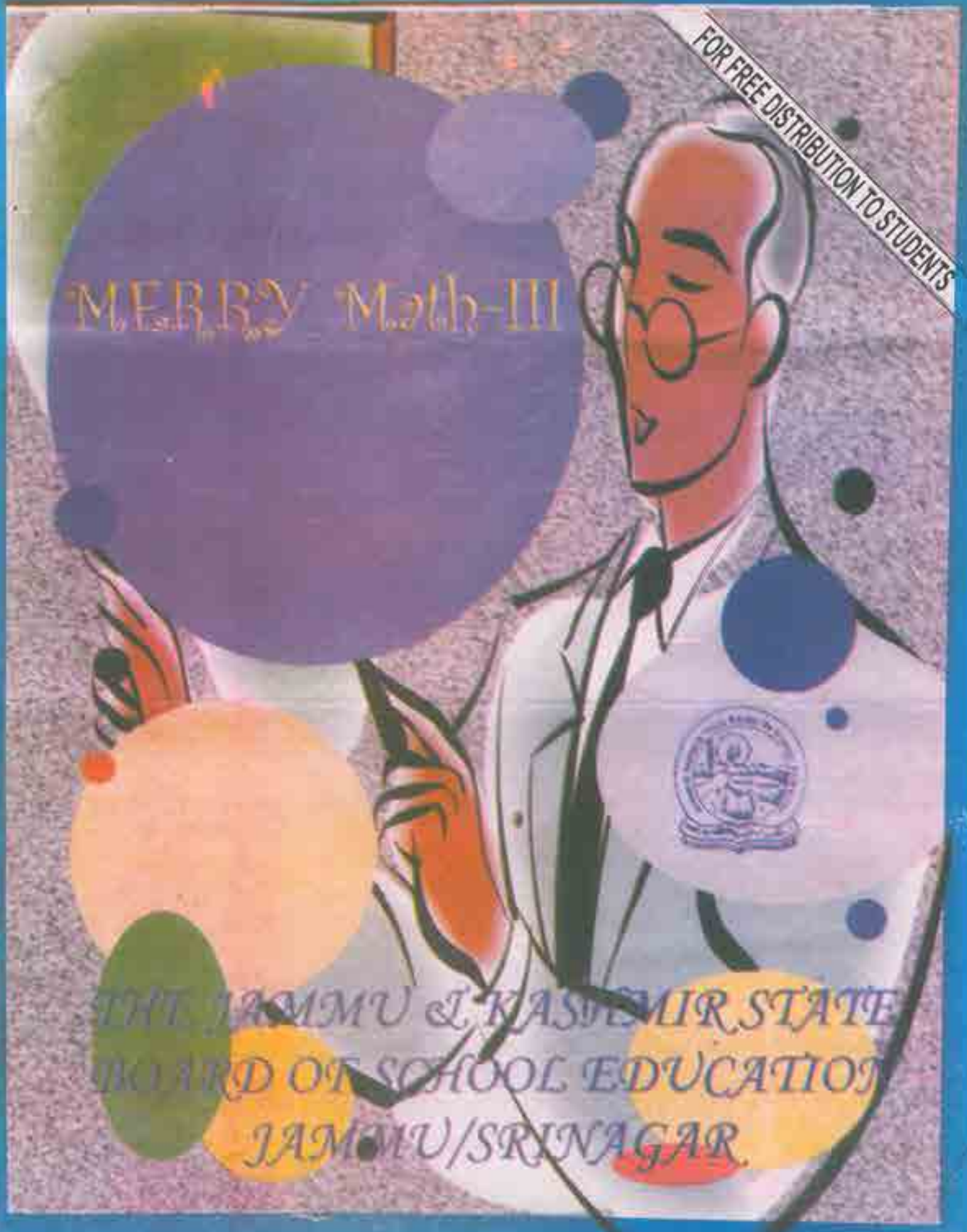
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MERRY Math-III
THE JAMMU & KASHMIR STATE
BOARD OF SCHOOL EDUCATION
JAMMU/SRINAGAR

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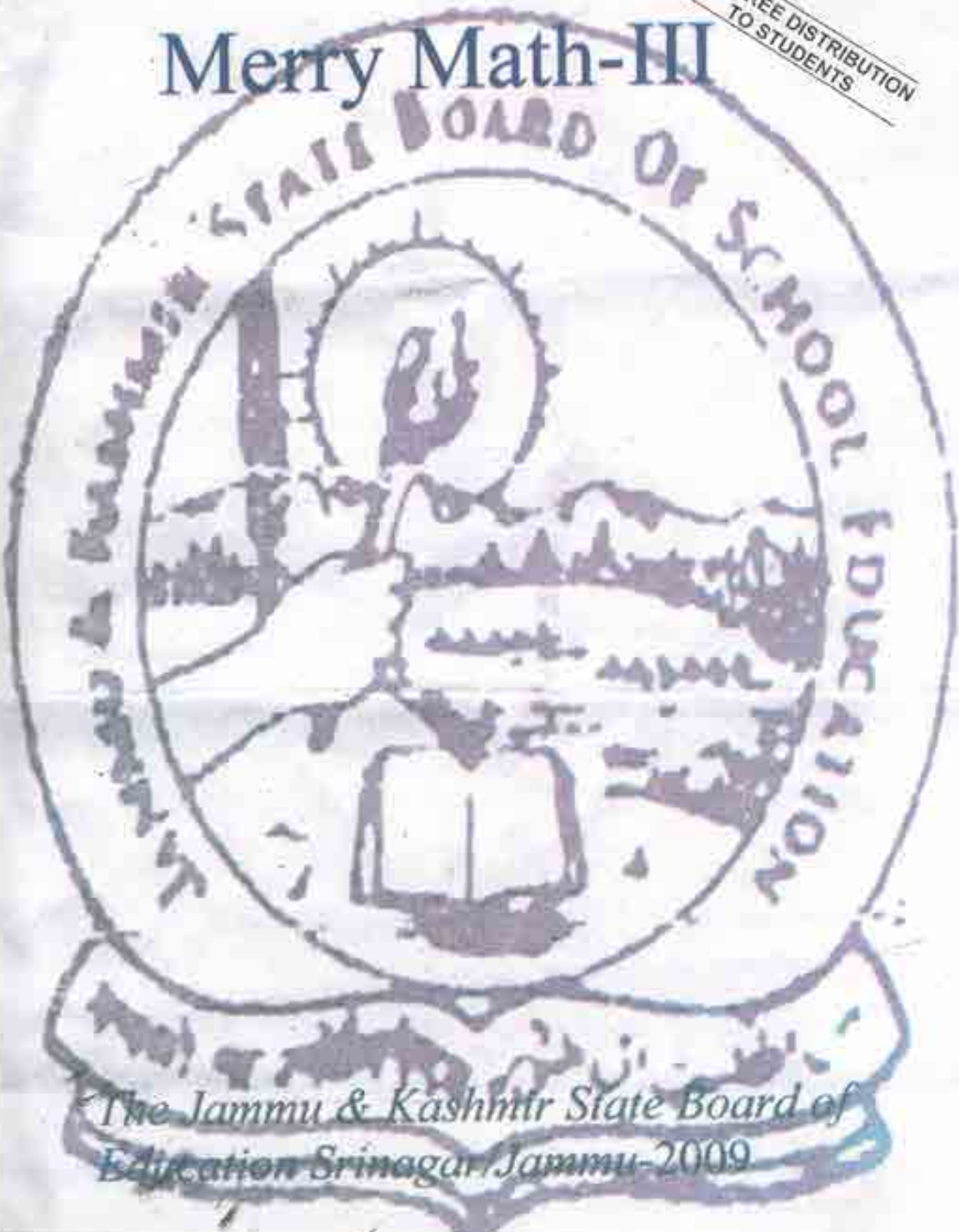
Merry Math-III



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FOREWORD

The Jammu & Kashmir State Board of School Education initiated the process of review and revision of school curriculum and the guidelines for this review and revision has been National Curriculum Framework 2005. While deciding the contours, the textbook of Mathematics for Class III–entitled Meery Math's an attempt has been made to relate Mathematics to the real life-like situation of children outside the classroom. Besides, an attempt has also been made to present the contents of the textbook in a pleasing manner so that the fear psychosis usually associated with learning Mathematics is done away with. As recommended by NCF 2005, it marks a departure from the usual rote learning from the textbook to the practical implementation of encouraging the children to reflect on their own learning and to pursue their imaginative activities and questions. Given a particular direction it is expected to initiate the child to imbibe on his imagination and generate new knowledge by engaging with the information passed on to them by adults. We should deviate from the usual method of relying solely on the textbooks in order to pass the examination and ignoring other resources of learning.

I am highly thankful to the subject experts who helped this organization in the development of the textbook. I also appreciate the efforts of Dr.Sheikh Bashir Ahmad, Secretary, BOSE, who has been carrying the flagship of review/revision. Again, I place on record my appreciation for Mr.M.D. Zargar, Deputy Director Academic, K.D. and Ms.Aaliya Qayoom, A.O. Mathematics who have put in their best efforts to come up with the book.

Prescribing a book or deciding the contents of the book is not a one time affair. JKBOSE is open to suggestions and I assure that any suggestions worthwhile will be given due consideration.

Prof (Dr.) Deshbandh Gupta
Chairman JK Bose

MERRY MATH-III

2IJJSU

What is inside this book?

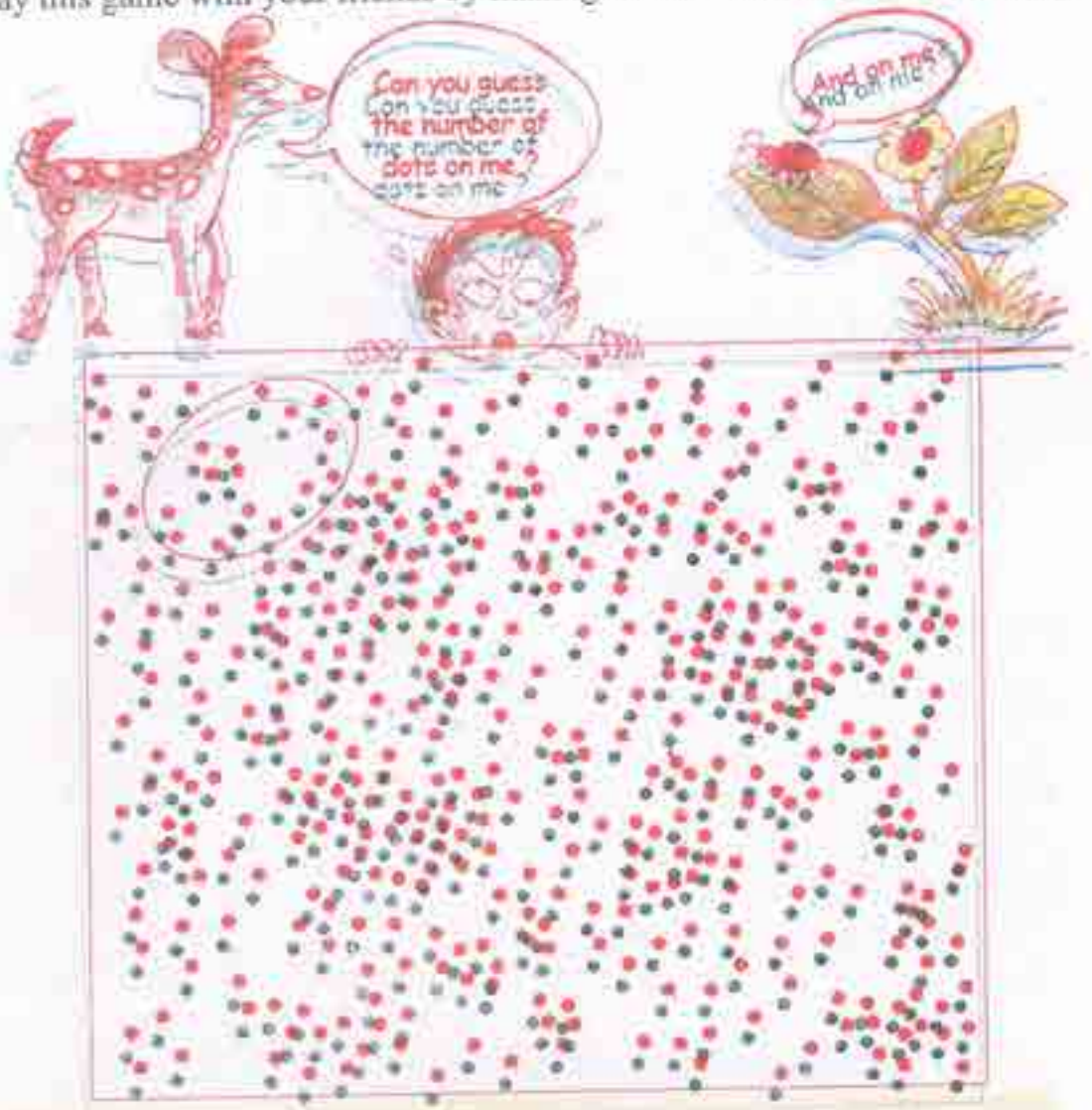
Fun with Numbers

Salma, Aamina, Aslam, Maria and Ali were collecting *Imli* (tamarind) seeds.

- _____ collected the most seeds.
- Ali will collect _____ more seeds to be equal to Aslam.
- If Salma gets 6 more seeds, she will have _____.
- How many children have more than 40 seeds? _____
- _____ needs 3 more seeds to have 50.
- Ali has 2 seeds less than 40 and _____ has 2 seeds more than 40.

Dot Game

Guess the number of dots in the circle. Now count and check your guess. Play this game with your friends by making circles. See who can guess best.



Children need interesting exercises to help them with visual estimation of numbers – of things arranged randomly and in symmetrical groups. Teachers could use other instances, such as bundles of leaves sold in the market, the school assembly, designs on mats, etc. to make them guess and estimate different numbers. In this book an ant has been used to show the child that a guess or estimate has to be made.

Dhoni's Century

One-day match between India and South Africa in Guwahati....., India batting first.....

Fill in the blanks:

Dhoni scored 96 + _____ = _____ runs.

How many runs do these players need to complete a century?

	Runs scored	*Runs needed to complete a century*
Player 1	93	_____
Player 2	97	_____
Player 3	89	_____
Player 4	99	_____

Numbers are understood not by reciting them in order but by making associations in familiar contexts. Here the idea of a "century" of runs is used. Teachers could add other examples from children's lives to think about 3-digit numbers. Encourage them to speak about large numbers even if they cannot read or write them.

99-112

Number (in figures)	Number (in words)
99	Ninety-nine
100	One hundred
101	One hundred one
102	_____
103	One hundred three
104	One hundred four
___	One hundred five
106	One hundred six
107	_____
___	One hundred eight
109	One hundred nine
110	One hundred ten
111	One hundred eleven
___	One hundred twelve

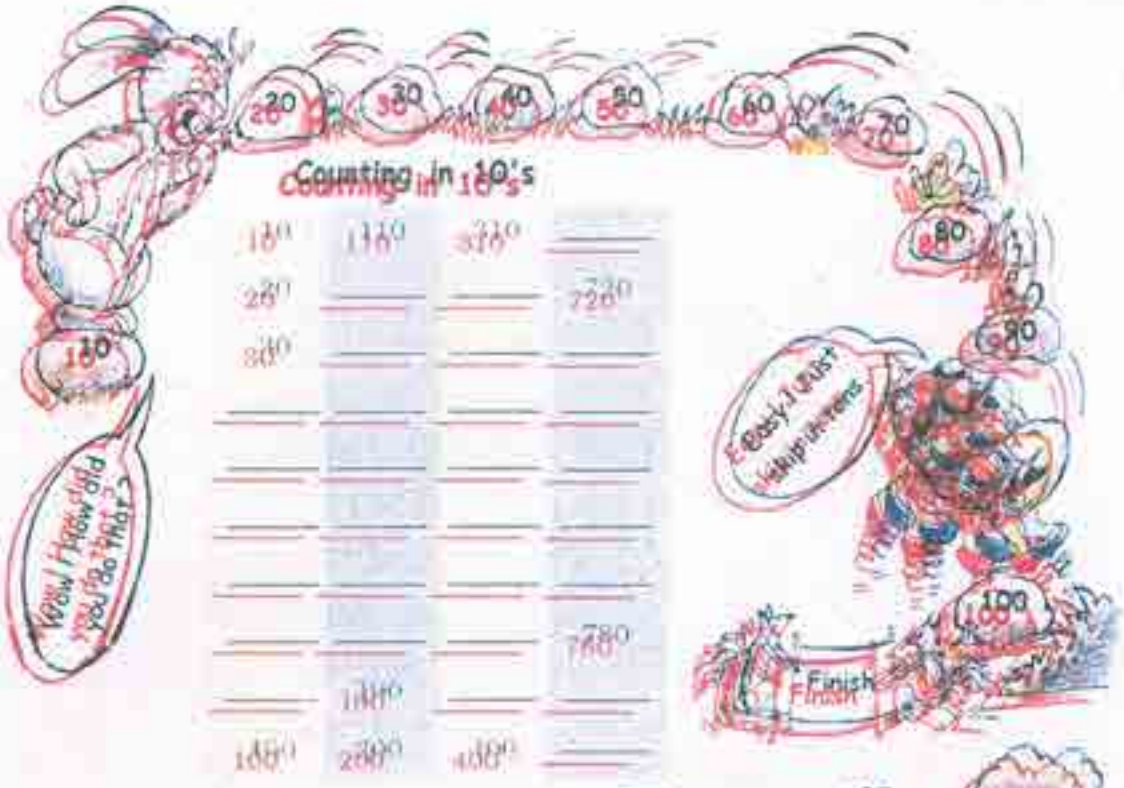
195-206

Number (in figures)	Number (in words)
195	One hundred ninety-five
196	One hundred ninety-six
197	One hundred ninety-seven
198	One hundred ninety-eight
___	One hundred ninety-nine
200	Two hundred
201	Two hundred one
___	_____
203	Two hundred three
___	Two hundred four
205	Two hundred five
206	_____

Top Ten Scores in the Cricket World Cup

Player	Score	Player	Score
M.D.	1228	M.D.	1078
A.S.	1090	P.K.	1035
C.K.	989	S.T.	1011
D.M.	1032	T.P.K.	1012

- C.K. just missed his century. How many runs did he need to make a century? _____
- _____ and _____ scored almost equal runs.
- _____ scored a complete century, no less, no more.
- Most runs scored by any batsman are _____.
- _____ and _____ have a difference of just 1 run between them.
- _____ scored 2 more than one and a half century.



10	110	210	
20			720
30			
			780
	1000		
1050	2000	4000	

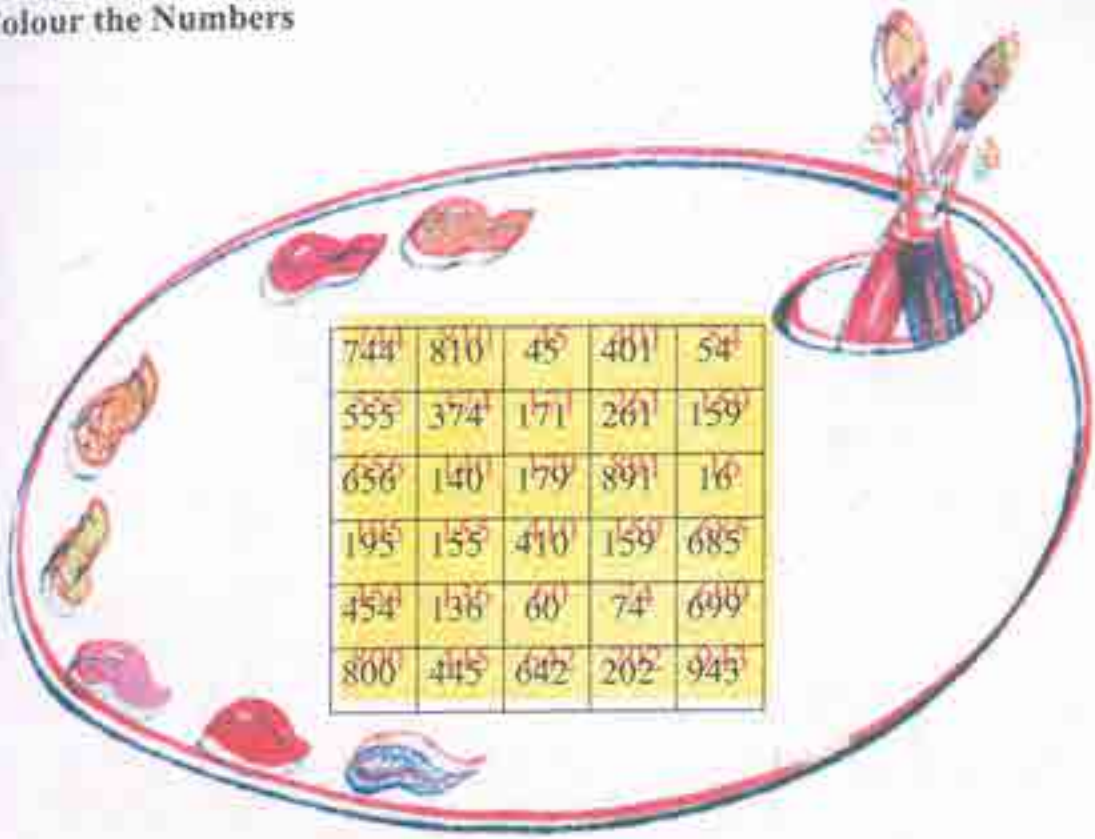
Counting in 50's

200	550
250	
	650
350	
	750
500	850

How far can you go like this?

What is the biggest number you can call out? _____

Colour the Numbers

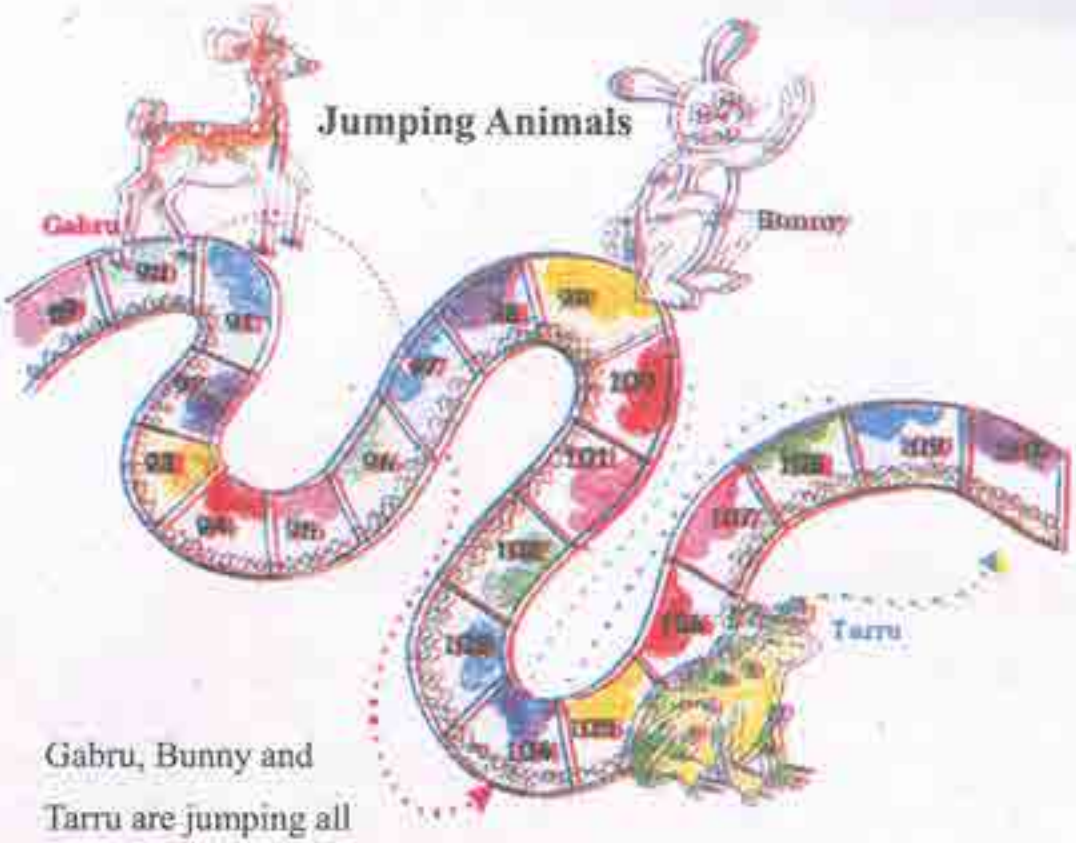


744	810	45	401	54
555	374	171	261	159
656	140	179	891	16
195	155	410	159	685
454	136	60	74	699
800	445	642	202	943

Find these numbers in the above chart. Colour them.

Green	Red	Yellow
One hundred sixty	Five ten	Four hundred forty five
Two hundred two	Sixty	Sixteen
Two hundred sixty one	One hundred ninety five	One hundred fifty nine
Eight hundred	Five hundred fifty two	Six hundred eighty five
300 + 70 + 4	600 + 40 + 2	600 + 90 + 9
900 + 30 + 6	100 + 70 + 9	70 + 4
2 + 50 + 100	800 + 10	1 + 40 + 30

Jumping Animals

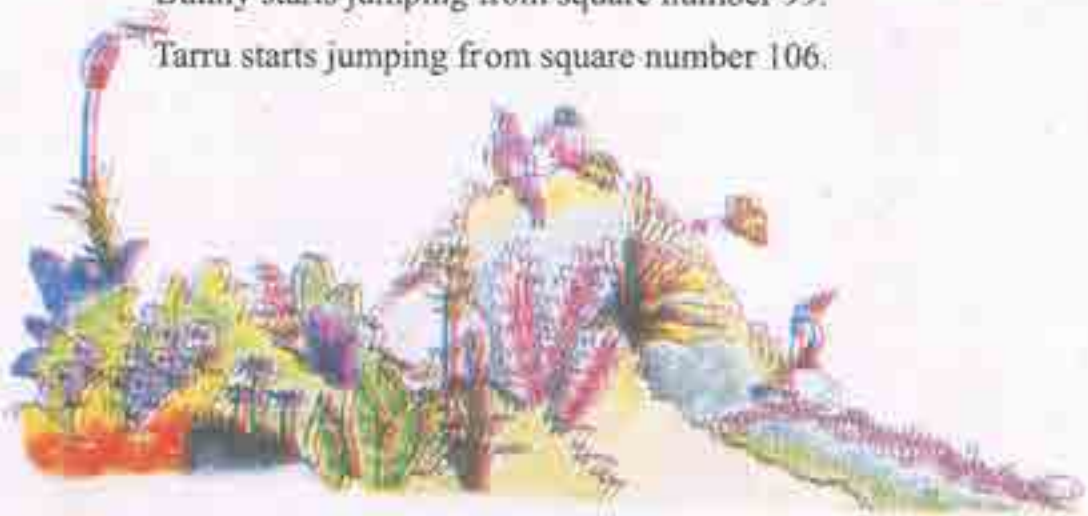


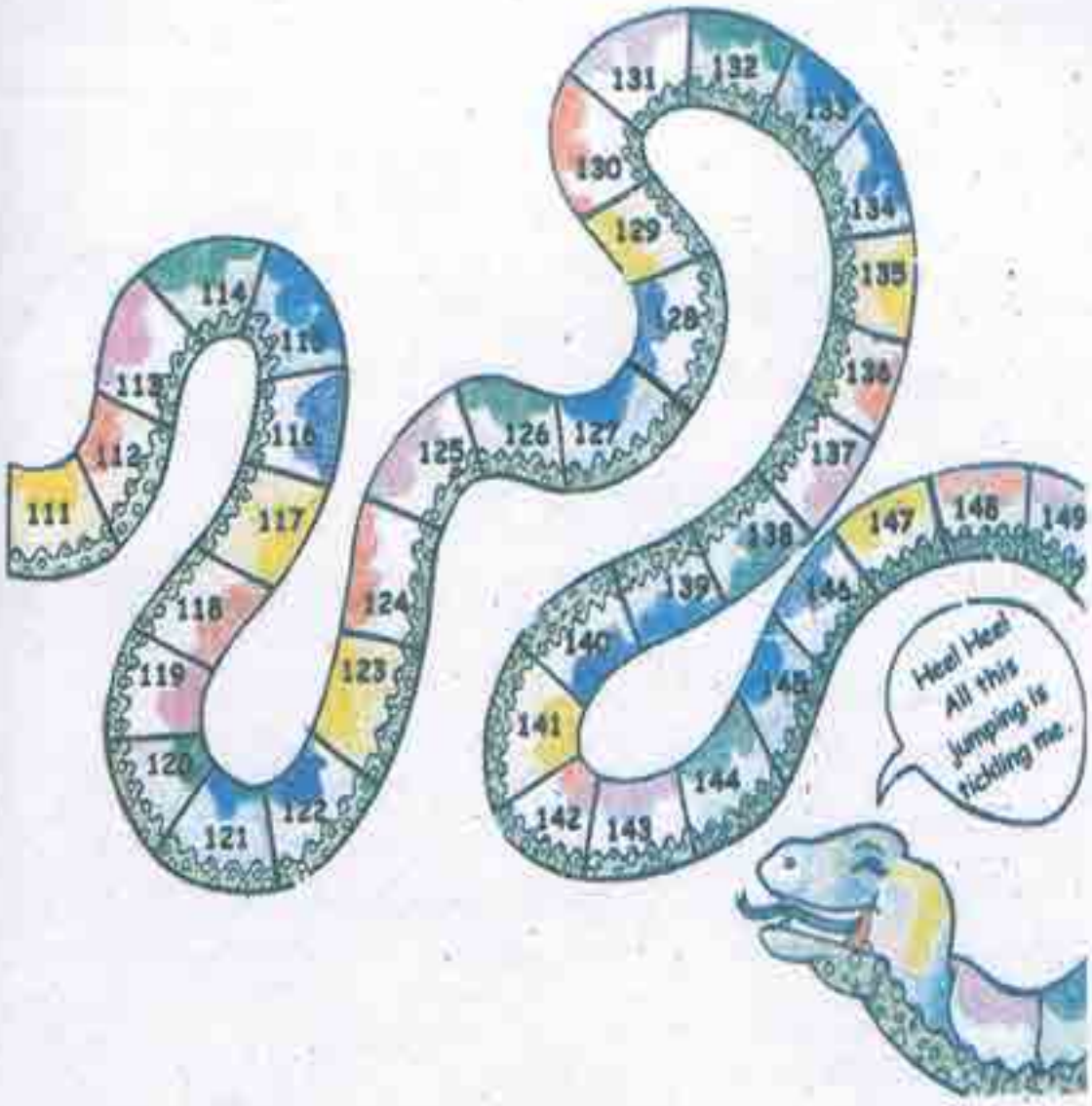
Gabru, Bunny and Tarru are jumping all the way. Gabru jumps on every 7th square, Bunny on every 5th square, Tarru on every 4th square.

Gabru starts jumping from square number 90.

Bunny starts jumping from square number 99.

Tarru starts jumping from square number 106.





Gabru and Bunny both jump on squares 104 _____ and _____.

Find out:

- Tarru and Bunny jump on squares _____, _____, _____ and _____
- Is there any square where all three of them jump? _____
- Guess who will finish in the least jumps? _____ In how many jumps? _____

Class, Jump!

Jump 2 steps forward:

104, 106, 108, _____, _____, _____, _____.

Jump 2 steps backward:

262, 260, 258, _____, _____, _____, _____.

Jump 10 steps forward:

110, 120, 130, _____, _____, _____, _____.

Jump 10 steps backward:

200, 190, 180, _____, _____, _____, _____.

Continue the pattern:

550, 560, 570, _____, _____, _____, _____.

910, 920, 930, 940, _____, _____, _____ _____.

209, 207, 205, _____, _____, _____, ___ .

401, 402, 403, _____, _____, _____, ___ .

Lazy Crazy Shop

This is the jungle shop. Lazy Crazy gives things only in packets of tens, hundreds and loose items.

Find out how many packets of tens, hundreds and loose items each animal will take. Fill in the blanks.

		Packets of 100	*Packets of 10*	*Loose items*
	143			
	210	____	____	____
	242	____	____	____
	552	____	____	____

Lazy Crazy also has a crazy way of taking money. He takes only in  notes,  notes and  co ins. Now find out how they will pay him for what they have taken.

Rs. 420

Rs. 145

Rs. 225

Rs. 55

Who am I? Match with the number.

a) I come between 40 and 50 and there is a 5 in my name.

b) I have 9 in my name and am very close to 90.

c) If you hit a 4 after me, you score a century.

d) I am equal to ten notes of 10.

e) I am century + half century

f) I am exactly in between 77 and 97.

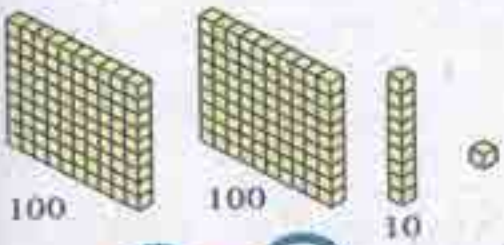
96
150
45
89
87
100

In this chapter several stories and exercises are used to help children understand the decimal number system. The term 'place value', which often confuses children, has not been used at all. Teachers could also find out about other locally used number systems, if any, especially while working in tribal communities.

How Many are these?

_____ rupees

_____ sticks



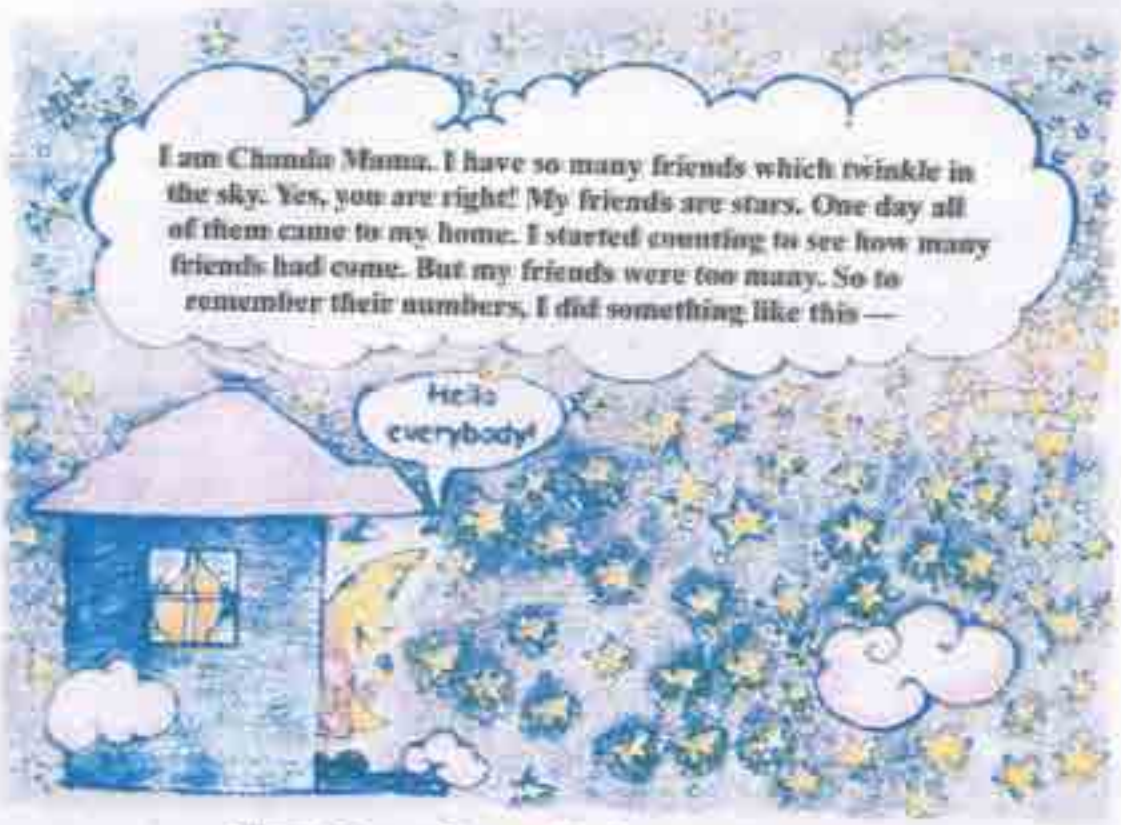
_____ blocks

_____ beads

_____ rupees

Who am I?

There is no biggest number
The biggest you cannot find
Add me to get the next one
To count, keep me in mind.



Moon Mama Counts his Starry Friends

I counted one star and kept one card in my pocket.

 for one star.  for 2 stars.

 for how many stars? _____

When I had 10 cards, I changed it with this card .

But my friends kept coming. So I had to count more stars. My pockets were getting full. So when I had 10 cards like this I changed it with a card.

But I have so many, many, friends that my pockets kept getting full.

Just see how many **cards I had**.

Which cards will I have in my pocket if I have counted up to...

a. 19 →

b. 21 →

c. 95 →

d. 201 →

e. 260 →

f. 300 →

g. 306 →

h. 344 →

i. 350 →

j. 400 →

When I had 10 10 cards in my pocket, I knew I had counted 20 stars. Now you tell me the number of stars counted in each case. Write the answer in the blank space.

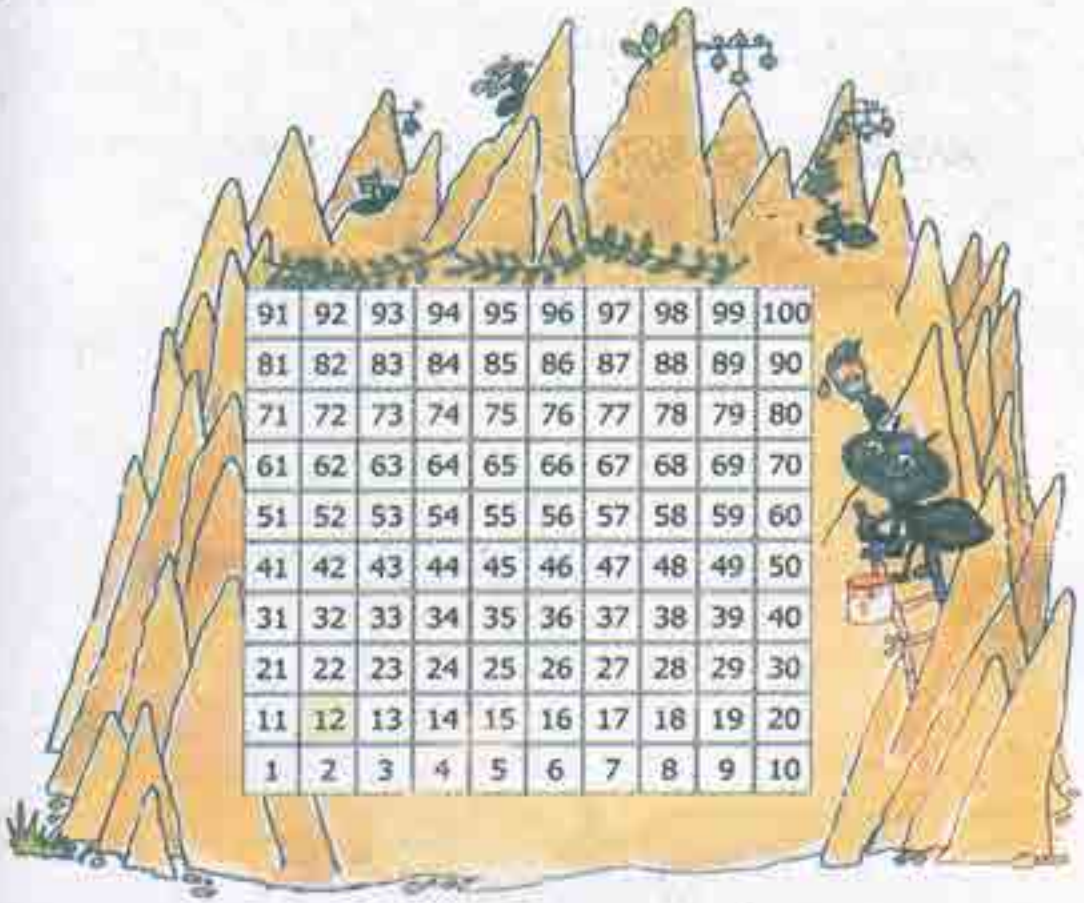
Guess how many starry friends I have in all... !!!

Give and Take

2J3BW5

2

I am Kittu. This is my home. Isn't it huge? It has 100 rooms. Help me in painting some of the rooms.



91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

I start from room 2. I add 10 to 2 to reach room 12 and paint it. To add 10 to 2, we can go all the way to the right to 10.

Then up to 11, and one step right to 12.

This is one way to go from 2 to 12.

Is there a shortcut? Of course! Follow me.

We can jump up one row.

A jump from 2 to 12 is like taking _____ steps.

- Now try one jump up from 14

  $14 + 10 =$ 24 .

  Colour this room.

- How will I go from 22 to 41? Jump from 22 to 42.

  Then one step left. We can write it like this

  $22 + 20 = 42$

  $42 - 1 = 41$

  How many steps did I go in all ?

  You could also go this way:

  From 22 take one step left to 21

  Then two jumps up to 41.

  $22 - 1 = 21$

  $21 + 20 = 41$

Try these on Kittu's home:

a) 10 less than 34 is _____.

b) $53 - 20 =$ _____.

c) 11 more than 31 is _____.

d) 11 less than 66 is _____.

e) $62 + 13 =$ _____

f) 23 less than 89 is _____.

g) 10 and 40 more is _____.

The 10×10 number grid is a useful aid for adding and subtracting two-digit numbers. Children should be encouraged to try these operations mentally using the grid as often as possible.

h) 9 added to 28 gives _____.

i) The sum of 9 and 44 is _____.

j) Reducing 98 by 34 gives ____ ____.

k) 4 and 37 more is _____.

l) Take 35 away from 83. We get _____.

Find My Food

Hey! I have something more interesting for you.

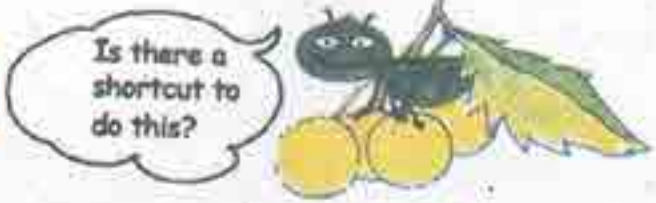
Amma told me, there are things to eat in some rooms.

Help me find those room numbers. Mark them in my home.

See what you get!

E.g., $47 = 37 + 10$

$37 + 9 = \square$



$62 + 30 = \square$

$\square = 46 + 28$

$\square = 87 - 14$

$62 - \square = 43$

$45 + \square = 99$

$\square + 26 = 75$

$\square - 1 = 1$

$36 = \square - 8$

$43 + \square = 74$

$100 = \square + 50$

$57 - \square = 20$

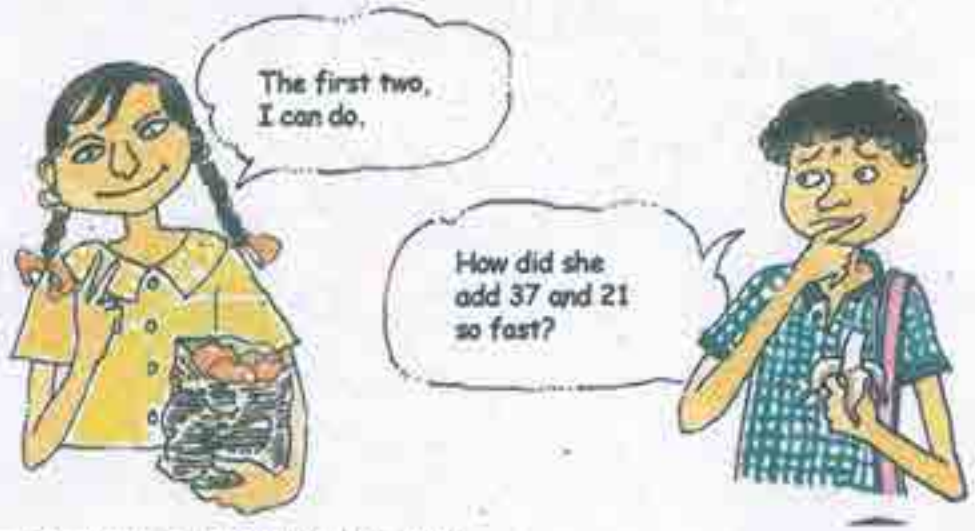
Adding Made Easy

Jyoti bought apples for 37 rupees. Raja bought bananas for 21 rupees. The woman selling fruits said:

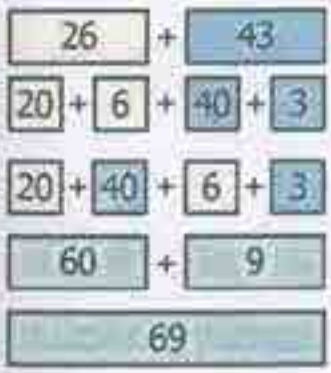
37 is 30 and 7

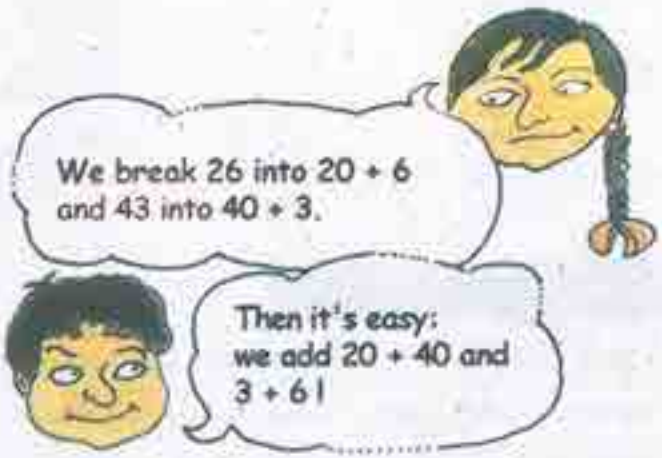
21 is 20 and 1

So 37 and 21 make 58.



Let us also try. Look at this sum.





The answer is 69

Can you do it another way? Say how.

33 + 56 = 30 + 3 + 50 + 6

= 80 + 3 + 6

= 80 + 9 = 89

See if you can do the same with these sums.

37 + 22 = 30 + 7 + 20 + 2

= + +

= + =

73 + 24 = + + +

= + +

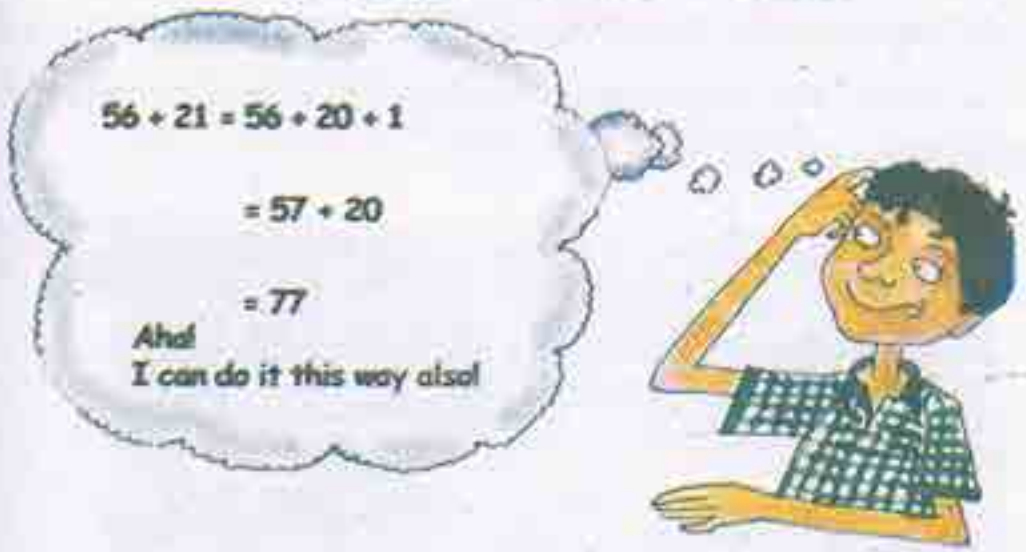
= + =

Use a pair of dice (or ten marbles marbles). Keep a different coloured button for each player. If you reach a mango you go forward (+). If you step on a chilli you have to go back (–). See who reaches back home first!

56 + 21 = ☐ + ☐ + ☐ + ☐

= ☐ + ☐ + ☐

= ☐ + ☐ = ☐



Now work out the steps in your mind.

Write the answers directly in the boxes.

33 + 42 = ☐ ☐ = 33 + 27 55 + 25 = ☐

19 + 61 = ☐ ☐ = 34 + 63 67 + 25 = ☐

☐ = 48 + 42 ☐ = 53 + 64 72 + 56 = ☐

Let Me Tell You a Story.....

Once a baby lion lost his way in the jungle. He started crying and called out for his mother. An old deer took pity on him. He took him to his place. But the other deer got really scared. So did their other friends — rabbits, squirrels and birds. A lion among us! Oh, no! He will eat up our babies. The old deer said — don't worry. I will warn him about this. In the morning the baby lion thanked every one and started to leave, But a rabbit said — wait, he cannot go like this! Let us count to see if he has done any mischief. We should be 240 in all. Let's count.

In the chapter Fun with Numbers, children would have made token cards. The same token cards should be used for exercises in addition before children do written sums.

Let's add and find out how many deer and rabbits were there...

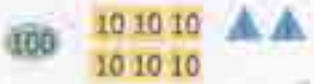
So total number of  and  = 75

Similarly we add the number of birds and number of squirrels.

	100	10	▲
Number of	1	2	4
Number of +		3	8
	1	6	2

Putting all the ▲s together first and grouping them

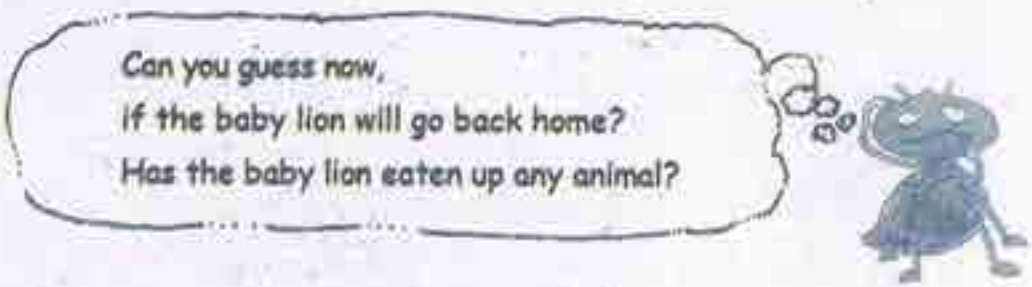
Then putting together the 10s and lastly the 100s we get



So together birds and squirrels were 162,

and deer and rabbits were 75

The old deer said – we were 240 in number, now how many are we in all



To find out, do the addition in the box below:

		100	10	▲
Number of	and			
Number of	and	+		

How Many Bulbs?

1. A factory makes 270 bulbs on the first day.

   On the second day it makes 123 bulbs.

How many bulbs does the factory make altogether?

First day – 270 bulbs

Second day - 123 bulbs

Solution:

	100	10	▲
Bulbs made on first day	2	7	0
Bulbs made on second day	1	2	3
Sum	3	9	3

2. A shopkeeper Rafi had 153 ca ndles. Mushtaq gave him 237 more candles. How many candles does Rafi have now?

Solution:

	100	10	
	2	3	7
+	1	5	3
Sum			

Work out the following story problems in the same way.

Read each problem and say it in your words.

Guess the answer before writing it.

A. A train compartment is carrying 132 people. Another compartment is carrying 129 people. In all, how many people are there in both the compartments?

B. Shanu found 138 pebbles.
Karim found 44 pebbles.
How many pebbles did they find in all?

	100	10	1
	1	3	8
+		4	4

C. A teacher kept a note of which fruits students like in her school. This is what she found:

Students	Oranges	Mangoes	Total
Girls	136	240	
Boys	128	243	
Total			

Find out:

(a) How many students in the school like oranges?

(b) How many students in the school like mangoes?

(c) Altogether, how many students are there in the school?

(d) Is the number of girls more than 350 or less than 350?

Practice Time

A. (i) 345 + 52

(ii) 492 + 29

(iii) 245 + 93

(iv) 643 + 345

(v) 750 + 219

B.

319	804	363
+ 823	+ 406	+ 456
427	684	
+ 248	+ 2 32	

Puzzle

Addition is my best friend
We never have a fight
When I am done
Call out to him
And check if I am right

MIND TRAIN GAME :

Two friends play this game. You look at each train. Some people come in (+) and some leave (–). How many are there in all? Solve in your MIND! Discuss your answer. The friend who gets the right answer first wins some points. List down your points. Add to find who wins the most!

Work out four different ways to write the numbers.

If you add all the numbers in the first box, you will always get 59.

59
50 + 9
30 + 29
19 + 40
59 + 0

78
+
+
30 +
+

83
+
+ 43
+
+

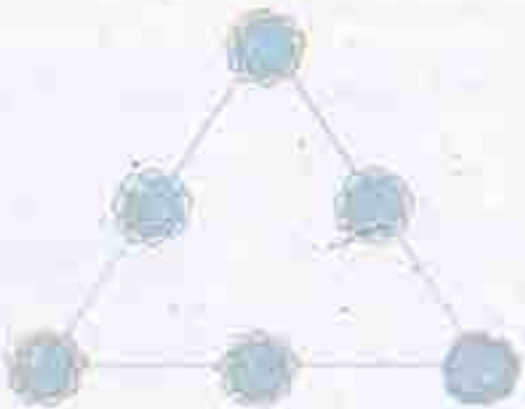
99
+
+ 39
+
+

102
+
+
+
+ 50

168
+
+
+ 68
+

Can You Solve this Puzzle?

Write the numbers 1, 2, 3, 4, 5, 6 in the circles, so that the sum of the numbers on each side of the figure is 12.



Find Mithoo's Bag

Do all the sums mentally:

a) 75 + 20 = 95

b) 90 + 60 = 150

c) 25 + 30 + 3 =

d) 9 + 40 + 31 =

e) 500 + 200 =

f) 400 + 350 =

g) 670 + 120 =

h) 380 + 210 =

i) 205 + 650 =

j) 128 + 600 =

k) 150 + 69 =

l) 37 + 46 + 3 =

Find Mithoo's bag and check your answers.

Draw a line through the numbers which are answers written in the boxes above.

95	150	73	428	59
80	58	590	855	615
700	750	790	728	155
341	212	93	219	47
100	99	120	86	200

Card Game

One day Bubbly and Gopal were playing. Bubbly gave three number cards to Gopal. He arranged the cards in two ways.

150 − 30 = 120

Bubbly arranged them this way:

120 + 30 = 150

30 + 120 = 150

You can also play it. Here are the cards for you. Work out the combination. Place the cards in the right boxes.

i) 50 70 20

50 20 70

ii) 30 42 12

30 42 12

Fun with Give and Take

3

Cricket Match

In a cricket match, Sri Lanka made 235 runs. India has made 123 runs. How many more runs does India need to win?

To win India must make 236 runs.

Runs India needs to win:

236 – 123 = ?

Guess...

To win India needs

(a) more than 100 runs

(b) less than 100 runs

Let's subtract by first taking away ▲s from ▲s

	100	10	▲
Runs to win	2	3	6
Runs by India –	1	2	3
Runs needed	1	1	3

100 10 10 ▲▲▲▲▲

100 10 ▲

100 10 10 ▲▲▲

So we are left with 100 10 ▲▲▲

To win India must make 113 runs

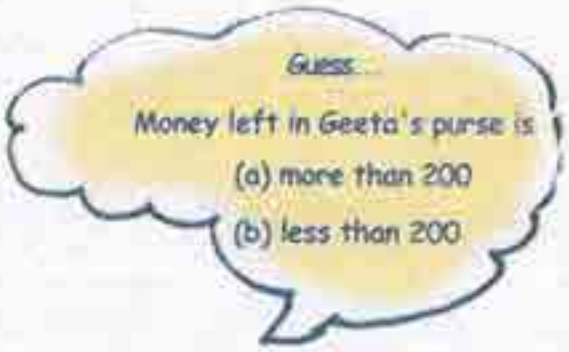
Try it Yourself

Geeta had Rs 368 in her purse.

She bought a book for Rs 123.

How much money is left in her purse?

Money left in her purse is Rs 368 – Rs 123 = ?



	100	10	▲
Money in Geeta's purse	3	6	8
Cost of book –	1	2	3

100 100 100 100 10 10 10 10 10 10 ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲ ▲

The teacher should discuss with students which number is to be placed above and why.

Can You Help Nabeela?

Nabeela's mother sent her to the market to buy some things. She gave her Rs 245. Nabeela bought 1 kg ghee for Rs 127. The shopkeeper gave her back Rs 98. (Kilogram is written as kg.)

Did the shopkeeper give her the right amount?

Let's find out

	100	10	1
Money Nabeela had	2	4	5
Cost of Ghee -	1	2	7

We cannot take seven 1 s from five 1 s

So borrow 10

10 is 1 1 1 1 1 1 1 1 1 1

Now we have fifteen 1 s

	100	10	1
	2	4	5
-	1	2	7

The shopkeeper had to give Nabeela Rs 118

How much more money should the shopkeeper give Nabeela?

Practice Time

1. Baby tortoise is 33 years old. Mummy tortoise is 150 years old. How much younger is Baby tortoise than Mummy tortoise?

   Age of Mummy tortoise: 150 years

   Age of Baby tortoise: 33 years

	100	10	1
	1	4 5	1 0
−		3	3
	1	1	7

Baby tortoise is 117 years younger than Mummy tortoise.

2. Arvind has read 69 pages of a story book. Gouri has read 95 pages of that story book. Who has read more pages and how many more?

	10	1
	9	5
−	6	9

Teachers should motivate students to decide which operation they have to use to solve a problem. More such exercises can be given where students decide the appropriate operation.

3. Reena noted the electricity meter readings of her house. Last month's reading was 118 units. This month's reading is 193 units. How much electricity did she use in one month?

This month's reading _____

Last month's reading _____

She used _____ units of electricity.

100	10	1
1	9	3
1	1	8

4. Khushboo bought a shirt for Rs 125 and trousers for Rs 165.

How much money did she spend altogether?

Bought a shirt for Rs _____

Bought trousers for Rs _____

100	10	1
1	6	5
1	2	5

She spent Rs _____

altogether.

5. Solve the following:

17	14	39	12	86
− 3	+ 3	−10	+24	−58

139	237	325	474
−110	+213	−204	−136

642	49	135
−110	+20	+146

6. Check your answers yourself:

236	122	340	312
−114	− 28	+ 28	+ 28
122	236	312	340

Check Rashi's subtraction using addition. Give her a 3 for every right answer.

	3	8	4
−	2	4	3
	1	4	1

	1	4	1
+	2	4	3
	3	8	4

3

	4	6	8
−	1	3	9
	2	2	1

+			

	3	5	6
−	2	4	7
	1	1	9

+			

	4	6	8
−	1	3	9
	2	2	1

+			

7. Fill in the missing numbers in the coloured boxes.

	7	8
−	3	
		5

	2	1
−	1	7
	3	2

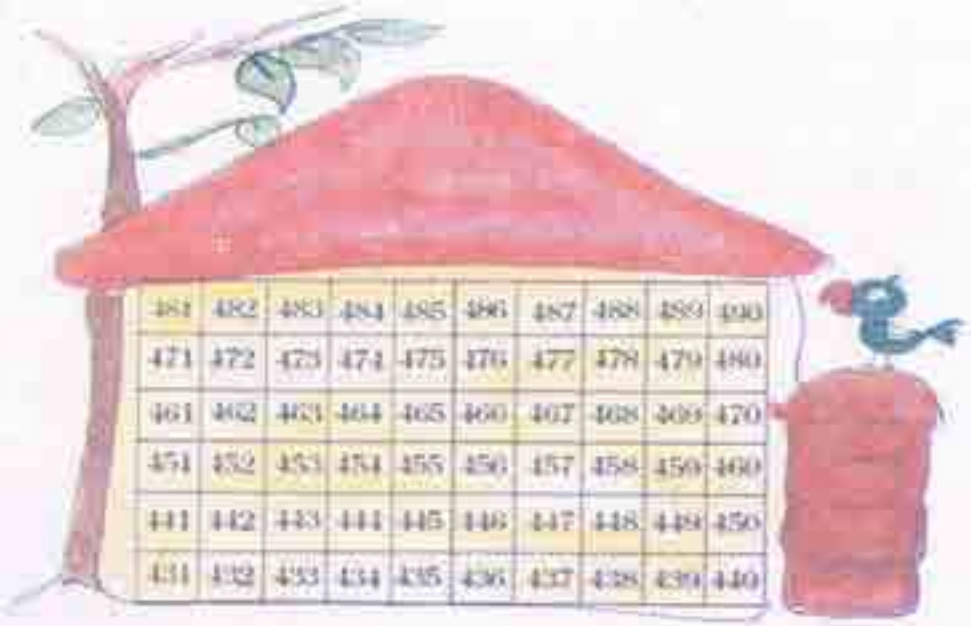
		6
−	3	
	6	0

		4	4
−	2	3	8
	2		

The teacher should encourage students to discuss and correct the wrong answers. Children love to correct other's mistakes (for a change!) and also learn from this process

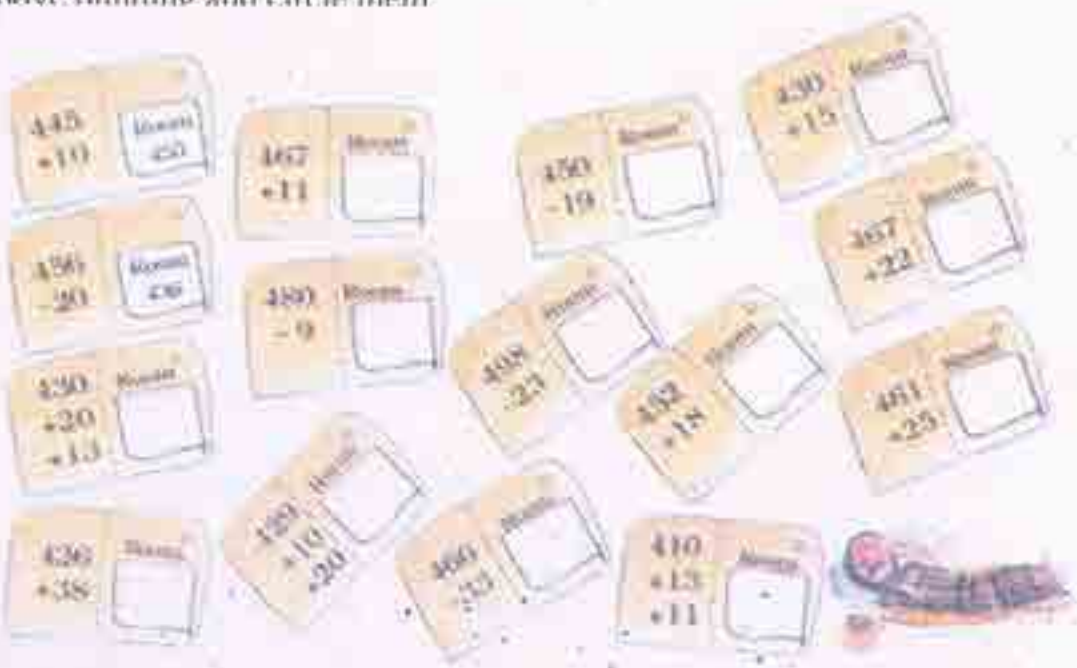
Let's Deliver Letters

Postman Uncle is ill today. Let's deliver the letters for him..



481	482	483	484	485	486	487	488	489	490
471	472	473	474	475	476	477	478	479	480
461	462	463	464	465	466	467	468	469	470
451	452	453	454	455	456	457	458	459	460
441	442	443	444	445	446	447	448	449	450
431	432	433	434	435	436	437	438	439	440

Write the correct room numbers on the letters. Then find the rooms in the above building and circle them.



The teacher should encourage students to solve the problems mentally using the above chart.

Find the Missing Numbers

Look at the number patterns. Write the missing numbers.

a) 100, 200, 300, _____, _____, 600, _____

b)

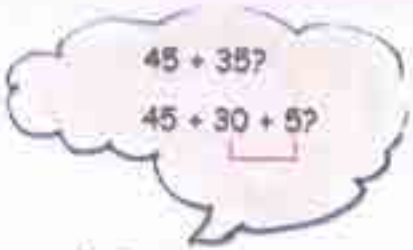
c) 50, 100, 150, 200, _____, _____, _____,

d)

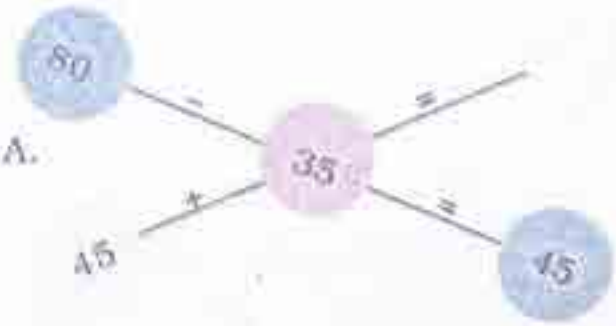
e)

f) 280, 260, 240, _____, _____, _____,

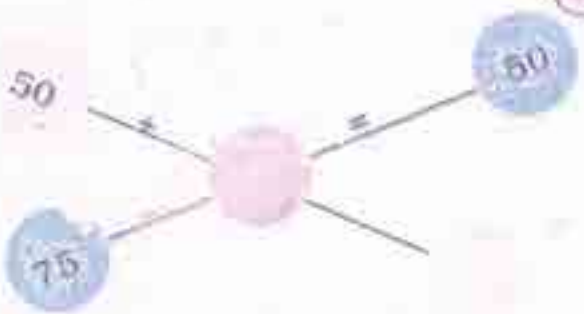
g ..50, ..., 200, _____, 250, _____, _____



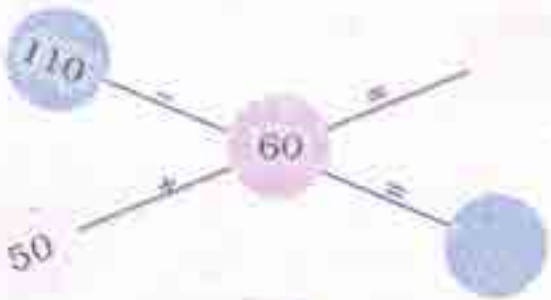
A.



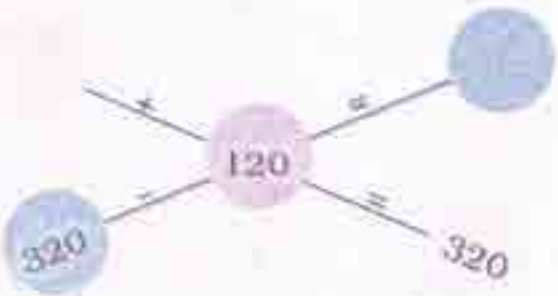
B.



C.



D.



Practice Time

1. Indu's pencil is 15 cm long. Jyoti's pencil is 8 cm long. Whose pencil is longer? How much longer?
2. Ask your Papa or Mummy
   Price of 1 kilo salt –
   Price of 1 kilo sugar –
   Which one is more costly?
   How much more does it cost?

3. Raja cooked *chapatis* in 25 minutes. Then he made *daal* in 15 minutes. How much time did he take to cook both things?

4. Rifat sells school sweaters. In 2 days she sold some red, blue and grey coloured sweaters.

	Red	*Blue*	*Grey*
Sweaters sold on first day	38	60	74
Sweaters sold on second day	40	25	80

Look at the above and answer the following:

(a) How many grey sweaters did Rifat sell in 2 days?

(b) Did she sell more red sweaters than blue sweaters in 2 days?

(c) How many red and grey sweaters did she sell on the first day — more than 120 or less than 120? Tick (✓) the right answer.

more than 120 ☐ less than 120 ☐

(d) How many sweaters in all did she sell on the second day — more than 140 or less than 140? Tick (✓) the right answer.

more than 140 ☐ less than 140 ☐

5. Is Lucy right?

Lucy went to the market with her grandpa.

She looked at the prices and said to her grandpa —

(a) Ghee is Rs 102 rupees costlier than biscuits. ☐

(b) Price of oil and ghee altogether is more than Rs 200. ☐

(c) Price of ghee and 10 kg rice is less than Rs 300. ☐

(d) Oil costs Rs 40 more than a pack of biscuits. ☐

Is Lucy right? Mark (✓) or (×) in the box.

Can you find this without using paper and pencil?

Story Problems

Nisha and Sonu were making story problems. Nisha said — 13 boys and 14 girls in a class. Sonu, can you make a problem on it?

Sonu wrote

There are 13 boys and 14 girls in a class.
How many students are there altogether?

You can also make story problems with your friends. Look at each picture and the words next to it. Write your problem below it.

A. 36 men and 52 women

waiting for their turn

B. We have our mid-day meal in 20 minutes and play for 15 minutes.

C. The post office is 1 kilometre from Shahid's home and 2 kilometres from his school.

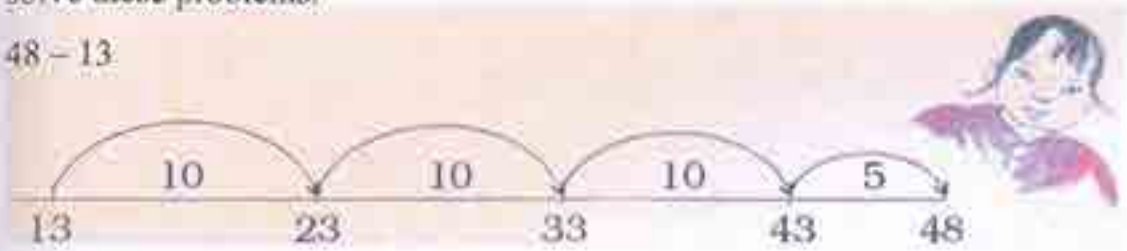
D. Bunty has read 27 books and Babli has read 34 books.

Count to Subtract!

Dolma bought 4 dozen (48) bananas and gave one to each of her friends. 13 bananas were left. How many friends got a banana?

As you know, this can be found by counting forward from 13. It is easier to count in jumps of 10. You can also use Kittu's home shown on page 29 to solve these problems.

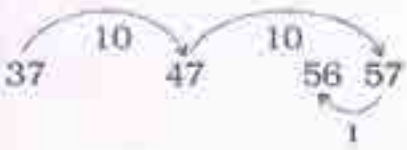
48 – 13



10 + 10 + 10 + 5 = 35

So 48 – 13 = 35

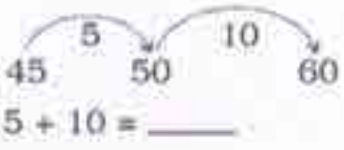
A. 56 – 37 = ?



10 + 10 – 1 = _____

So 56 – 37 = ☐

B. 60 – 45 = ?

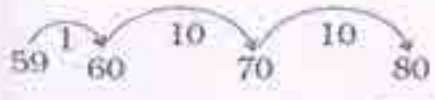


5 + 10 = _____

5 + 10 = _____

So 60 – 45 = ☐

C. 80 – 59



_____ + _____ + _____ = ☐

So 80 – 59 = ☐

D. 63 – 85 =

E. 84 – 69 =

F. 60 – 20 =

G. 90 – 50 =

All the King's Horses....

Once there was a king who could count only up to 9. Up to what number can you count?

The king loved horses. But he could never count all of them. He kept them in such a way that he needed to count only up to 9 from each side.

How many horses in all did the king have? _____

One day a visitor with 4 horses came there. It was getting dark so he wanted to stay there at night. But the horse-keeper was scared. If the king saw these

extra horses he would be very angry! The visitor said — do not worry. The king will never know. So he arranged the horses like this:

How many horses are there now? _____

At night the king came to count the horses. Along each side he counted 9 horses. Ah! That's fine – he said. Then he happily went to sleep.

In the morning the clever visitor tried another trick. He took out his own 4 horses. But he also ran away with some of the king's horses. He left the king's horses standing in this way. How many horses are now left?

The silly king did not find any horse missing. Can you help him?

How many horses are now left? _____

How many of the king's horses were taken away?

(Based on the Tamil folk story from the book "Numeracy Counts!")

Puzzle

What numbers are we?

If you add us both you get 100.

The difference between us is also 100.

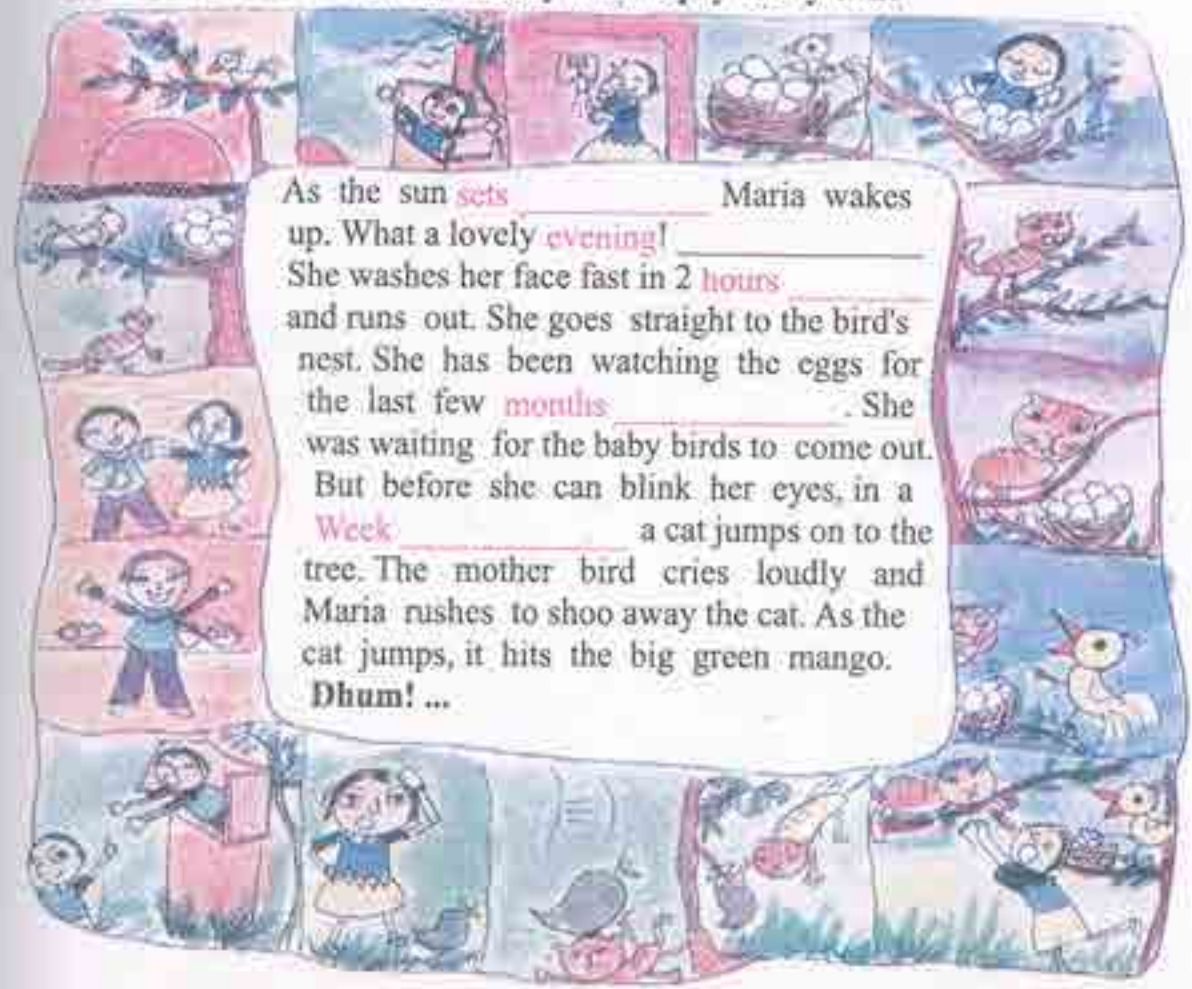
2JC7XS

Time Goes On.....

2JL3ZF

4

Ulta Pulta Time – This is a story with topsy turvy time



As the sun sets _____ Maria wakes up. What a lovely evening! _____ She washes her face fast in 2 hours _____ and runs out. She goes straight to the bird's nest. She has been watching the eggs for the last few months _____. She was waiting for the baby birds to come out. But before she can blink her eyes, in a Week _____ a cat jumps on to the tree. The mother bird cries loudly and Maria rushes to shoo away the cat. As the cat jumps, it hits the big green mango. **Dhum! ...**

Dhum!

... In two days _____ it is on the ground ! Oh, how sad! The mango is still not fully ripe. It needed one more year _____ to become sweet. Suddenly Maria's sister calls out — Are you still not hungry? Has your stomach clock gone to sleep? Come and eat hot Pulao for dinner _____

Wasn't that funny? You must have guessed that the coloured words are wrong. Choose the correct word from the box given below and write it next to the wrong word.

days	rises	seconds	morning
breakfast	moment	minutes	week

How Long does it Take?

Have you seen someone knitting a sweater? Or someone weaving a cloth? Do try to find out from a potter how long it takes to make a pot. Also tell us if you take hours or minutes to have your bath! (Is it years since you last had a bath? Ha, ha!)

Think of many different things that can take different times. Make your table as long as you can.

Takes minutes	*Takes hours*	*Takes days*
a bath	to stitch a shirt	to knit a sweater
to boil milk	to set curd	to weave a sari
	a school day	for a banana to become ripe

Think of some other things, some faster and some slower. Make a long list.

Takes seconds

to blink my eyes to snap my fingers to gulp my medicine

for fruit to fall from a tree

Takes months

to grow wheat (from seed to big plant)

to change from summer to winter

for a baby to come out of its mother's stomach

Clap! Clap! — Before you Catch

Play this game

Throw a stone into the air. Clap once before you catch it.

Now try to clap 2 times before the catch.

Try more claps. How many times can you clap before you catch the stone?

Ta Thai — Different Claps

Clap 2 times and say 1 2

Keep clapping 1 2, 1 2, 1 2, ...

or say *Ta Thai, Ta Thai, Ta Thai, ...*

Also stamp your feet Left Right, Left Right, Left Right,.....

Now clap with three beats 1 2 3, 1 2 3, 1 2 3, ...

Say: *Ta Thai Tut, Ta Thai Tut, Ta Thai Tut, ...*

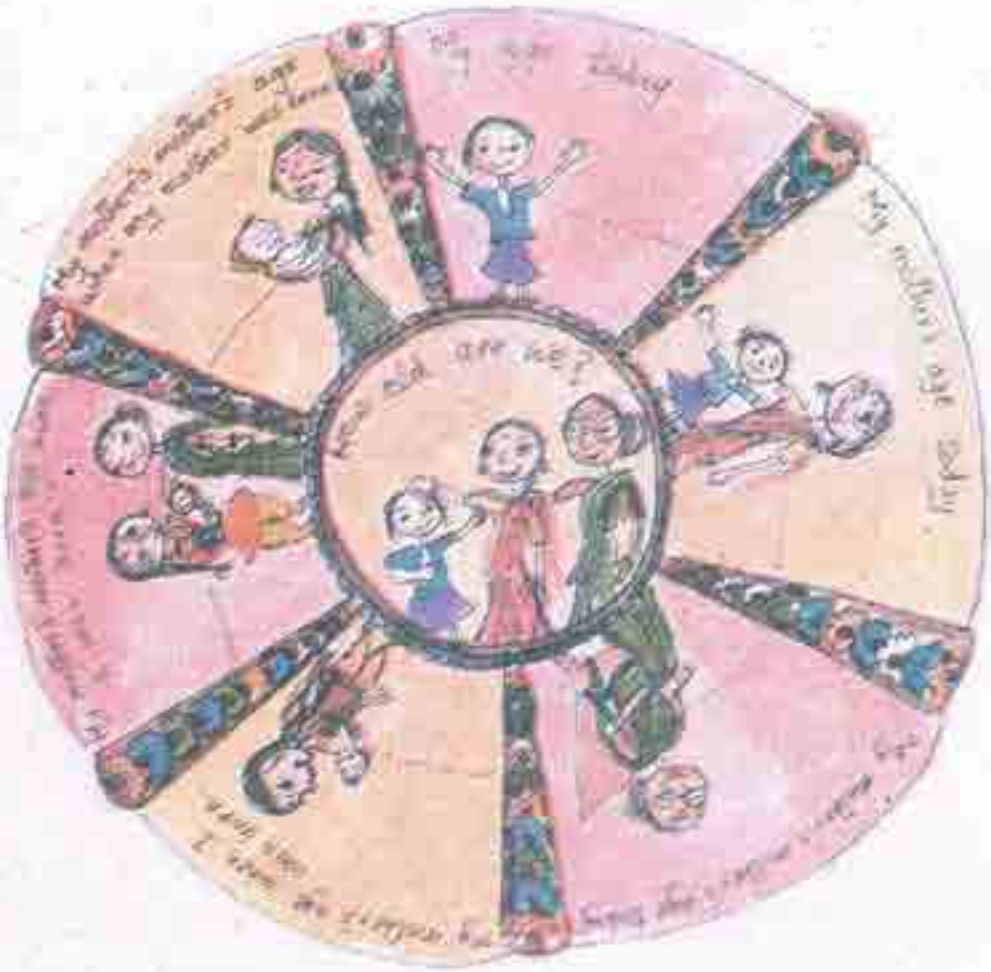
Can you stamp your feet Left Right Left, Left Right Left, ...

How many of you can speak and stamp at the same time?

Find Out

Have you heard people playing a *tabla* or the drums? Find out a few different beats they play. Also ask what 'bols' they say for the beats they play.

How Old are We?

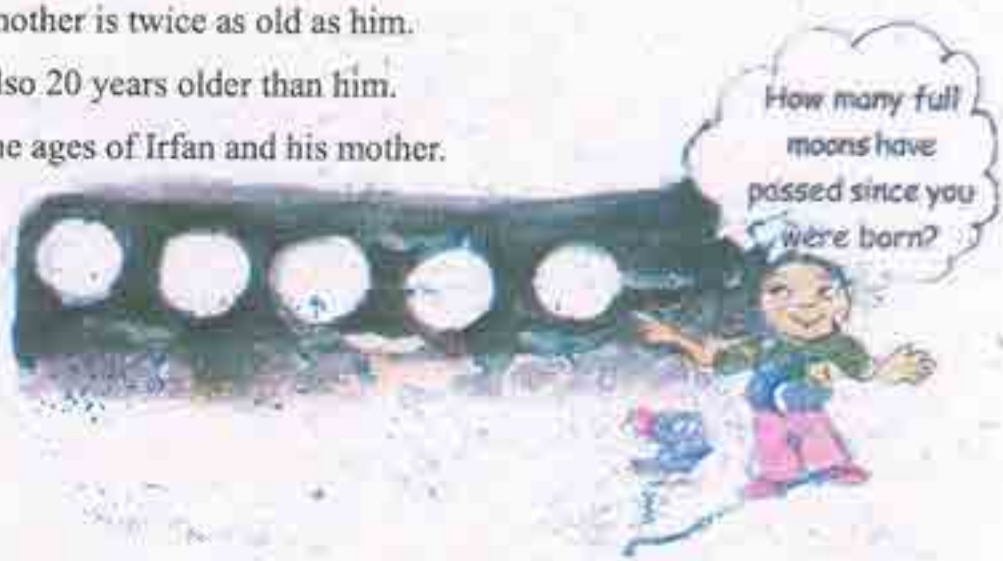


Puzzle

Irfan's mother is twice as old as him.

She is also 20 years older than him.

Guess the ages of Irfan and his mother.



Birth Certificate

Look at the birth certificate of Shakeela.

[illegible]

Government of J&K

Birth Certificate

This is to certify that this information is taken from the original record of birth which is in the register for the year 2002 of Sopore

Name	Shakeela Bano
Sex	Female
Date of birth:	02/05/2002 (Second May, Two Thousand Two)
Place of birth:	Lal-Ded Hospital
Name of Father:	Gulam Mohd
Name of Mother:	Raja Begum
Date of Registration:	02/05/2002
Registration Number	815/02

[illegible] [illegible]

(1) 2/5/2002 shows that Shakeela was born on 2 ____________, in the year 2002.

(2) How old will Shakeela be on 2 May 2008? ____________

(3) How old will she be in the year 2052? ____________

(4) On what date will she be eight years old? Write in numbers. ____________

(5) How many months old was Shakeela on 2 August 2002?

_____

(6) How many years old is Shakeela now? _____

(7) After how many months of her birth was the certificate issued? _____

(8) What is the registration number of her certificate? _____

Find Out

When were you born? _____

Write your date of birth in numbers. _____

Do you have a birth certificate? Ask your parents and make one for yourself.

Form Number _____

Government of _____

Birth Certificate

This is to certify that this information is taken from the original record of birth which is in the register for the year _____ of _____

Name

Sex

Date of birth:

Place of birth:

Name of Father:

Name of Mother:

Date of Registration:

Registration Number

Date Signature of issuing authority

Calendar 2008

JANUARY

MON	TUE	WED	THU	FRI	SAT	SUN
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY

MON	TUE	WED	THU	FRI	SAT	SUN
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29		

MARCH

MON	TUE	WED	THU	FRI	SAT	SUN
31					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

APRIL

MON	TUE	WED	THU	FRI	SAT	SUN
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

MAY

MON	TUE	WED	THU	FRI	SAT	SUN
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

JUNE

MON	TUE	WED	THU	FRI	SAT	SUN
30						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

JULY

MON	TUE	WED	THU	FRI	SAT	SUN
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

AUGUST

MON	TUE	WED	THU	FRI	SAT	SUN
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

SEPTEMBER

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

OCTOBER

MON	TUE	WED	THU	FRI	SAT	SUN
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

NOVEMBER

MON	TUE	WED	THU	FRI	SAT	SUN
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

DECEMBER

MON	TUE	WED	THU	FRI	SAT	SUN
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Let us look at the calendar for the year 2008.

- How many months does a year have? _____
- List the months which have 30 days. _____
- List the months which have 31 days. _____

_____

- How many days does the month of February have? _____
- How many days makes a week? _____
- How many weeks are there in July? Is it true for all the months? _____
- In which month did you come to Class III?
- Make a circle on these dates in the calendar:

  26th January

  14th November

  31st December.

Is there something special about these dates?

Fill in the blanks with the correct year:

2007 2008 2009 2006 2011 2010

1. Which year was it two years back? _____
2. In which year were you in Class II? _____
3. Which year will be the next year? _____
4. Which year will come after 3 years? _____

This chapter encourages children to look at different cultural contexts in which the idea of elapsed time occurs in their lives. It is more important for them to be able to develop an intuitive estimate of seconds, minutes, months etc. than to actually measure. The chapter also helps them to understand the use of a clock and calendar through interesting exercises. Teachers could create more such exercises related to number patterns and symmetries.

Which Festival comes First?

Given below are some festivals we celebrate during the year.

Look at the calendar (2008) to find the days on which these fall.

Name of the festival Day	*Date*	*Day*
Diwali	October 20	
Eid-ul-Fitr	September 2	
Raksha Bandhan	August 15	
Gandhi Jayanti	October 2	
Milad-Ul-Nabi	March 20	
Good Friday	October 28	
Guru Nanak's Birthday	November 13	
Janamashtimi	August 23	
Christmas Day	December 25	

❖ Arrange the festivals in the order in which they come in the year.

1. _____ 6. _____
2. _____ 7. _____
3. _____ 8. _____
4. _____ 9. _____
5. _____ 10. _____

❖ Which festival comes in the beginning of the year?

_____

❖ Which festival comes at the end of the year?

_____

Calendar Magic

Here is the calendar for the month of February 2007.

Let us mark a square on the calendar and see some magic.

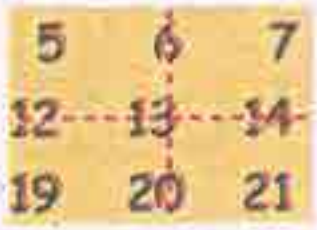
February 2007

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

Which is the number in the centre of the square? _____

Join three numbers by drawing a line. The line must pass through the number at the centre.

How many such lines can you draw?



Add the three numbers on each of these lines.

What do you notice?

5 + 13 + 21 =

6 + 13 + 20 =

19 + 13 + 7 =

12 + 13 + 14 =

- Now look at the calendar of 2008. Also look for the present month and draw any similar square in your notebook. Does the magic work for these?
- Is this magic possible on a 10 × 10 number chart? Go to the chapter 'Fun with Numbers' and check.

More Magic!

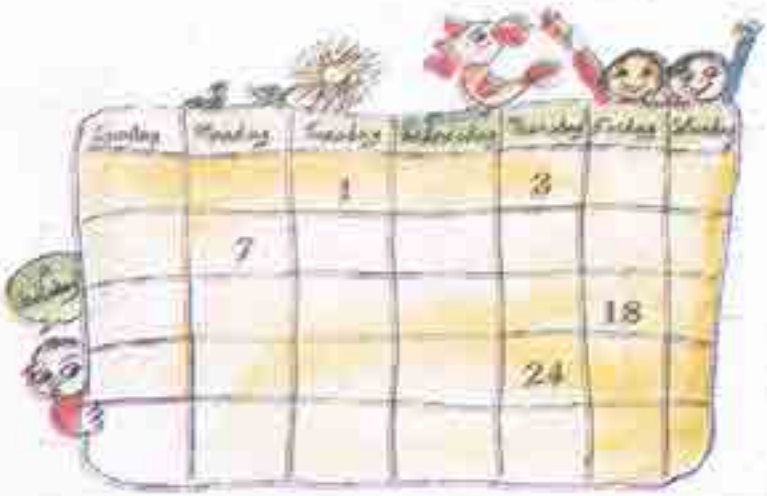
March 2007

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

See if this magic works for other lines which have five numbers. What about five numbers on a slanting line? Try this trick with your family and friends. Can you find other magic patterns in the calendar?

Complete the Calendar

for August 2008



Colour all the Sundays in red.

On which day does this month end? _____

Write the number of days in this month. _____

What day is it on 13th August? _____

What is the date on the second Saturday? _____

Is the 21st a Sunday? _____

What is the day on the 29th? What will be the date on the same day next week? _____

How many Thursdays are there in this month? _____

Find Out!

Which months in the calendar (2008) have 5 Sundays?

Is there any other day in any month which comes 5 times?

Can there be 6 Sundays in a month? Why?

Ask such questions for the current month and also other months. Encourage students to discover more patterns through a calendar.

The True Story of Pedki Devi

My Time Line

My name is Pedki Devi. I live in a village in Dhanbad district (Jharkhand). I never got a chance to go to school. I remember that when I was 5 years old I broke my foot. I had climbed a tree to eat the Jamun fruit. But the branch broke and I fell down. My foot still hurts in winter. While grazing our goats we often got busy in playing. Once at the age of 10 years I got a big scolding — I had lost one goat! At the age of 15 years I was married. My husband was much older than me. My first daughter was born three years after my marriage. Later I had three more children when I was 20, 22 and 24 years old.

Time passed very fast then. I was busy with my farm, housework and looking after my animals. But at the age of 35 years my world came to a stop. My husband fell ill and died. His brothers tried to take away our farm. They beat me badly and said I was a witch! Some good people saved me. We fought a case against those who beat me up. At the age of 40 years I saw a police station for the first time.

When I was 45 I learnt to read and write. 2 years later I got my eldest daughter married. Now I am 50 years old. I enjoy playing with my grandchild. Two of my children are studying in school.

Some things that happened in her life are given below. Mark these on her time line. For example, when she was 5 years old Pedki broke her foot. A is marked at 5 on the time line.

A. Broke her foot

B. Lost one goat

C. Got married

D. Had her fourth child

E. First saw a police station

F. Learnt to read and write

G. Eldest daughter got married

- Mark on the time line when she was born.
- In the blank box draw a picture of Pedki as a new born baby.
- Make your own time line. Ask people around you and mark at least one thing that happened in each year of your life.

- Make time lines of people you admire. These can be from among your family, friends, teachers, etc.

One Day in the Life of Kusum

Let's see what Kusum does every day.

Write down the time for each picture.

For some pictures the time is already written and you must draw the hands on the clock. In others you have to write the time shown by the clock.

Kusum gets up early in the morning.

At six-thirtyin the morning

She brings water from the well.

She cleans her house.

She goes to school

At eight o'clock

She is studying in school.

She comes back from school

1 o'clock in the afternoon

She takes lunch with her brother and grandmother.

She plays with her friends.

Five-thirty in the evening

She listens to a story from her grandmother before she sleeps.

9 o'clock at night

Now prepare a chart showing your own daily routine.

Time of the day

In words	*On the clock*	*What do you do at this time?*
		
		
		
		
		
		
		

Geometrical Shapes

The approach of this unit should be intuitive rather than formal. Models of various geometrical shapes be presented to children. The children themselves should handle and explore these shapes as much as possible.

Basic Shapes

When we look around us, we see a variety of shapes in objects. Some of the objects are shaped like:

When we look at the faces of these shapes, we find that some are flat and some are curved.

All the faces of a cuboid or a cube are flat. With the help of a flat face of the above shapes, we can draw, on a piece of paper, the following 2-dimensional shapes, called basic shapes.

These basic shapes are available and can be seen both inside and outside the school.

Description of Shapes

Before children are asked to select appropriate objects and draw basic shapes using objects, it is necessary that children know the description of these shapes.

It is a square which has four equal sides

It is a rectangle whose opposite sides are of equal lengths

It is a triangle which has three sides

It is a circle

This should be followed by actual drawing of shapes using objects, cut-outs. etc.

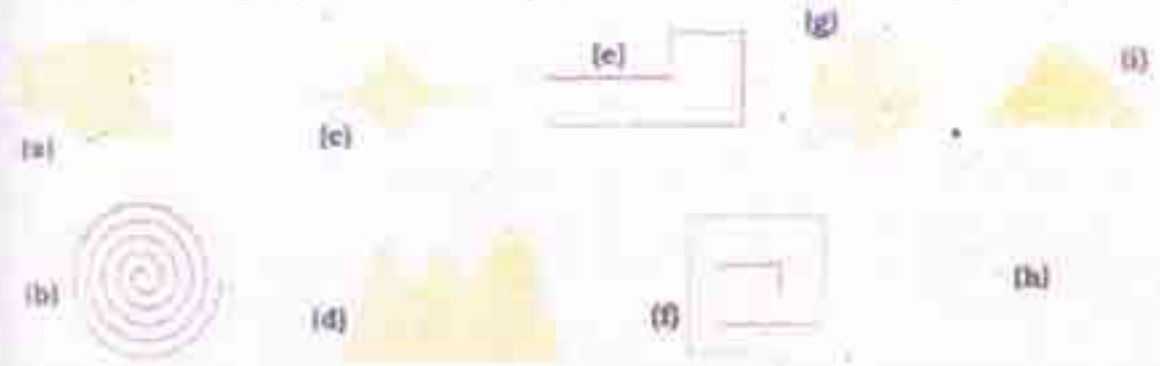
Straight and Curved Lines

By moving a pencil along an edge of a die, a match-box, a set-square, a ruler, we get a straight line. Children should be asked to move their pencils along the edges of cuboidal objects. Similarly, by moving a pencil along a curved edge of a tin, a carom-coin, a rupee coin, etc., we get a curved line. Children should be asked to move their pencils along a curved edge of cylindrical or conical objects.

Note: At this stage, there is no need to make any distinction between a straight line and a line-segment.

Closed and Open Figures

The figures traced out with the help of a pencil without lifting the pencil are called curves. Here are some examples of curves.

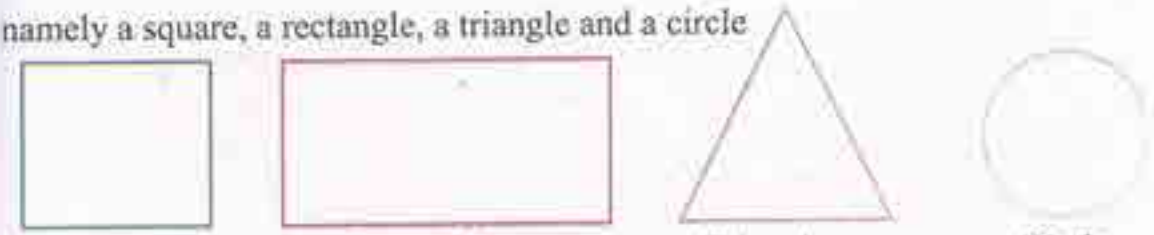


The five curves (a), (c), (d), (g) and (i) above are different from the curves (b), (e), (f) and (h). Curves like (a), (c), (d), (g) and (i) are called closed figures. Each of these ends at the starting point. Each of the curves shown below is a closed figure.

Curves (b), (e), (f) and (h) drawn above are called open figures, as these do not end at the starting point.

Recognition of basic shapes

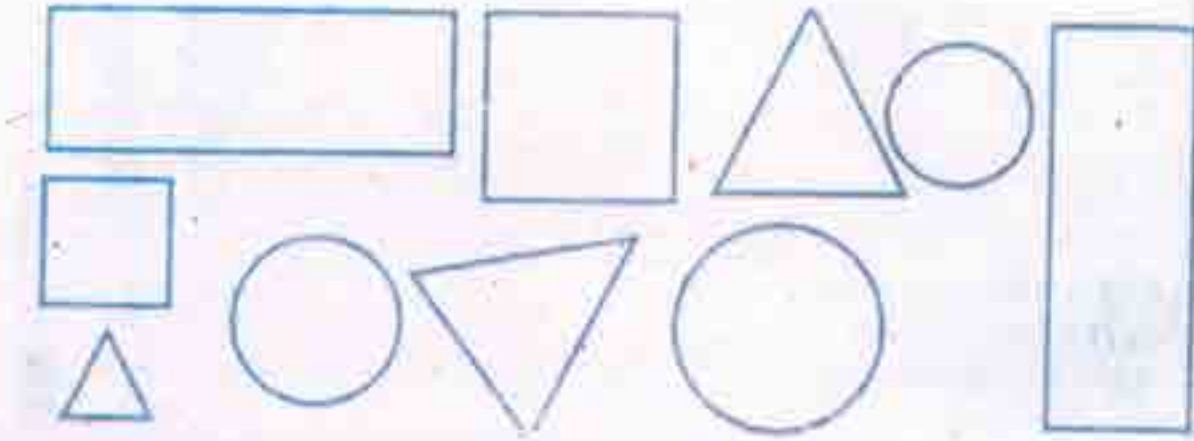
In previous class you have studied about four basic geometrical shapes, namely a square, a rectangle, a triangle and a circle



Square Rectangle Triangle Circle

Let us recognise these basic shapes in the following collection.

Write R in the rectangles, S in the squares, T in the triangles and C in the circles.



These shapes can easily be seen in our surroundings.

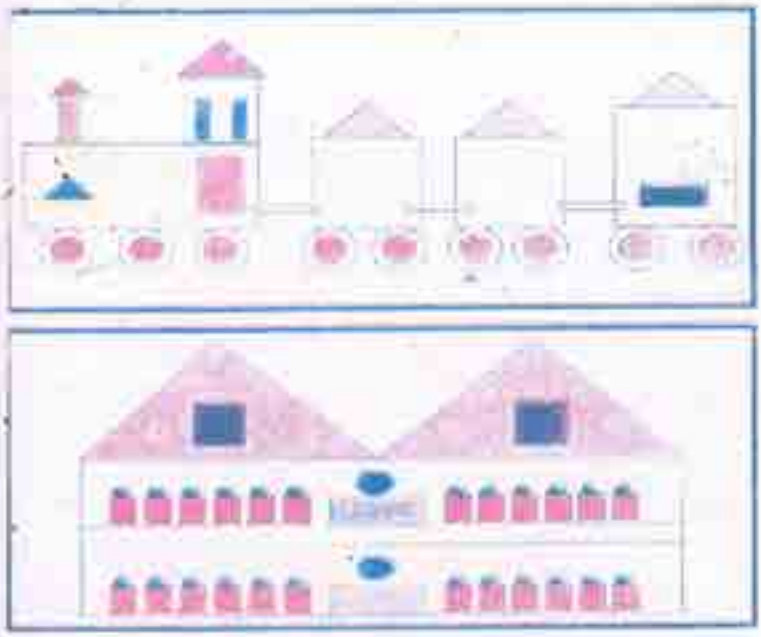
Let us count the number of shapes of each kind in the following models:

Circles - 7

Squares - 2

Triangles - 2

9



Circles - 18
Squares - 2
Triangles - 6
Rectangles 8
Circles - 26
Squares - 2
Triangle - 2
Rectangles - 27

Activity I

1. Colour the following shapes in the picture as indicated:

Yellow

Red

Green

2. In the picture, colour:

Red

Green

Blue

Yellow

3. In the picture, count the number of each given shape and write it in the box:

Circles

Squares

Triangles

Rectangles

Circles

Squares

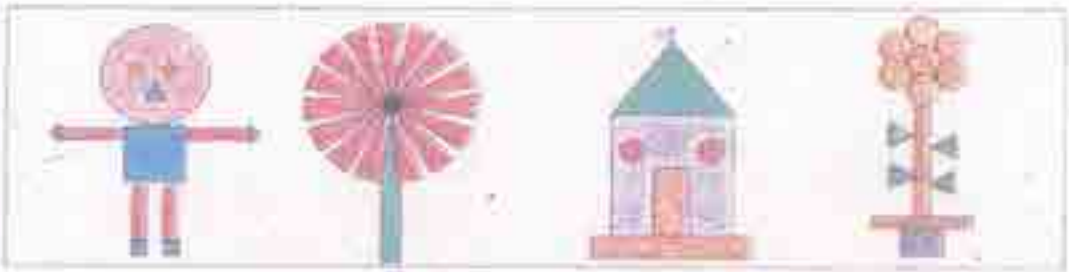
Triangles

Rectangles

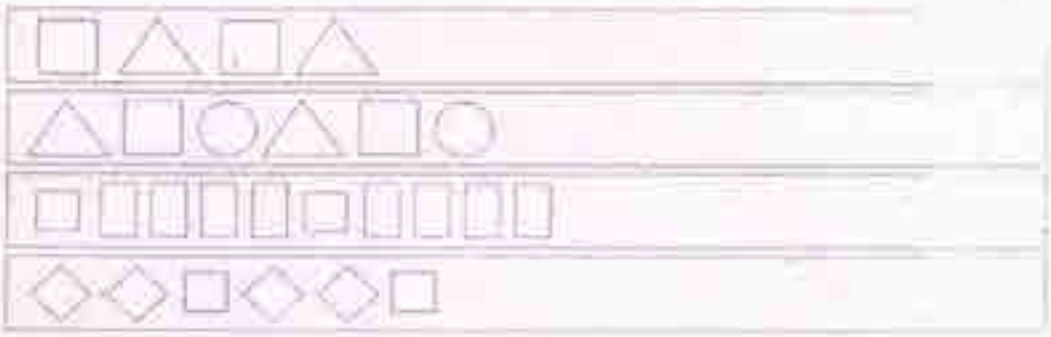
Simple geometrical designs and models

Here are some geometrical designs made with the four basic shapes. Can you make some more?

Here are some models made with the four basic shapes. Can you make son more?

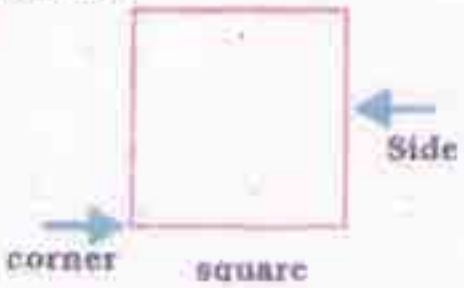


Given blow are series made with the basic shapes. Can you continue these?



Description of basic shapes

1. Square



This is a square

It has four sides and four corners.

All its sides are of the same length.

This shape can be obtained when we put a die on a piece of paper and move a pencil along the edges of the bottom face.

Some easily available objects, using which we can make a square, are the following.

2. Rectangle

This is a rectangle.

It has four sides and four corners.

Its opposite sides are of the same length.

Corner

Keeping a match box on a piece of paper, we can obtain a rectangle if we move a pe along the edges of the bottom face.

Some objects which can be used for tracing a rectangle are:

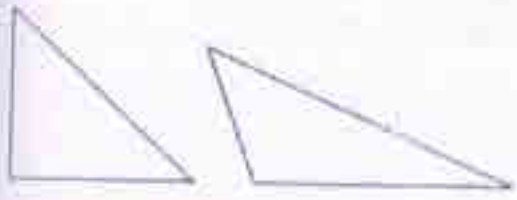
3. Triangle

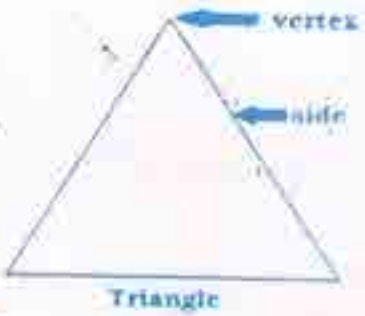
This is a triangle

It has three sides and three vertices.

The three sides of a triangle mayor may not be of the same length.

The following figures are also triangles.





This shape is obtained when we keep a triangular wooden board on a piece of paper and move a pencil along the edges of the bottom face.

This shape can be traced using the following objects :

4. Circle

This is a circle.

It has **no comers.**

This shape can be traced with a bangle, a one-rupee coin, a carom coin, etc. as shown below.

Many a time, by using objects, available in the environment, we are not able to draw a fine figure. To get fine figures, we can make use of the following cut-outs:

Making shapes

(A) Making Shapes with matchsticks

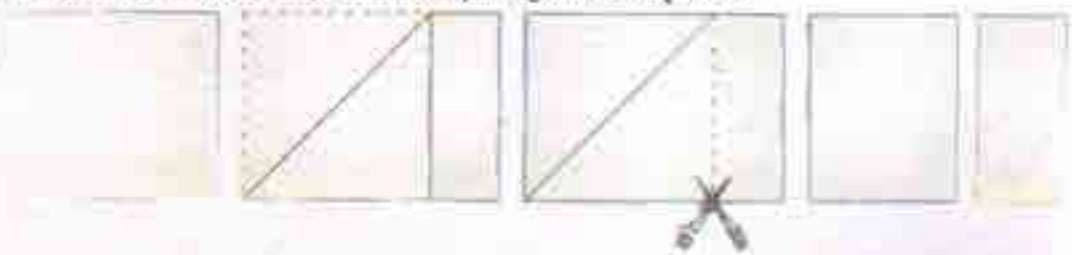
Children may not be able to make a circle with matchsticks.

Discuss with them why they are not able to get a circle.

(B) Making shapes with folding and cutting paper

Take a sheet of paper. Fold its shorter side onto the longer side.

Cut off the excess. Unfold. What you get is a square.

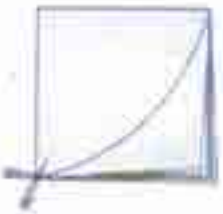


Fold the square by bringing one of its corners onto the opposite corner.

Press. Cut along the crease and obtain two pieces. Each piece is a triangle.

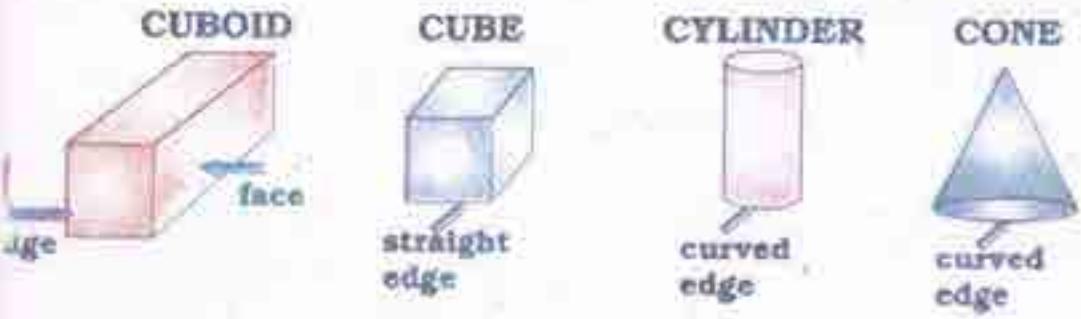
To get a circle from a square, fold a square twice, the way it is shown below.

Cut along the dotted line. Unfold .What you get is a circle.


Straight and curved faces/Lines

In class II you have learnt about certain geometrical solids.



These solids have different number of faces, some of which are flat faces and some of which are curved faces.

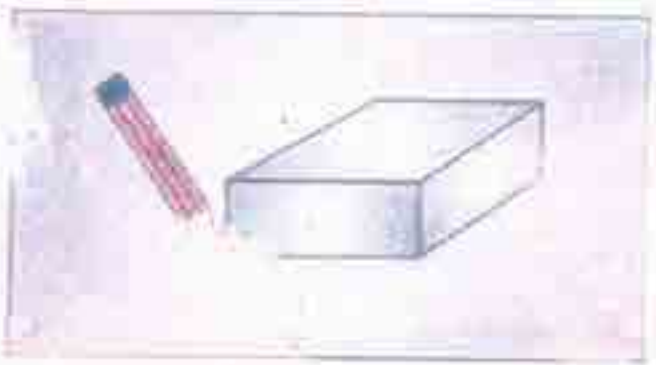
CUBOID CUBE CYLINDER CONE

1. Each cuboid and a cube has 6 faces.

   All the 6 faces of each are flat.

   Each of a cuboid and a cube, has 12 straight edges.

   When we move a pencil along an edge, we get a straight line.

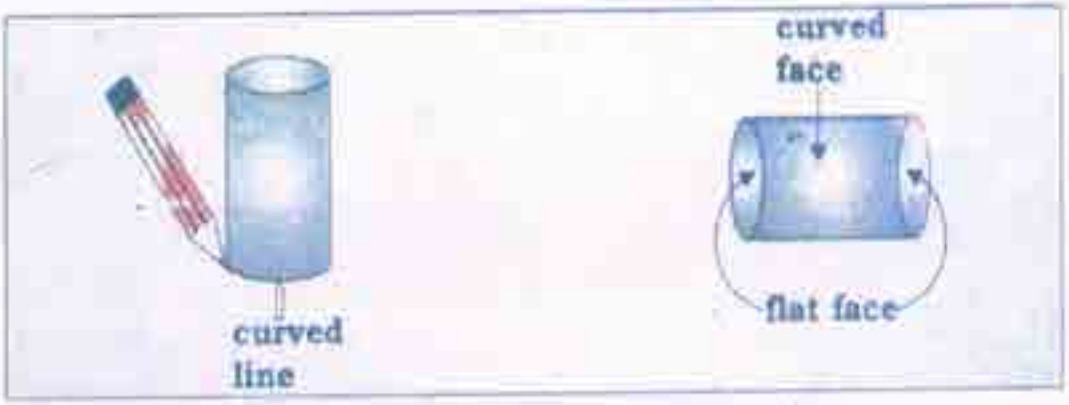


Note: When we draw along a straight edge, we get a straight line.

2. A cylinder has 3 faces, 1 curved face and 2 flat faces.

It has 2 curved edges.

When we move a pencil along a curved edge, we get a curved line.

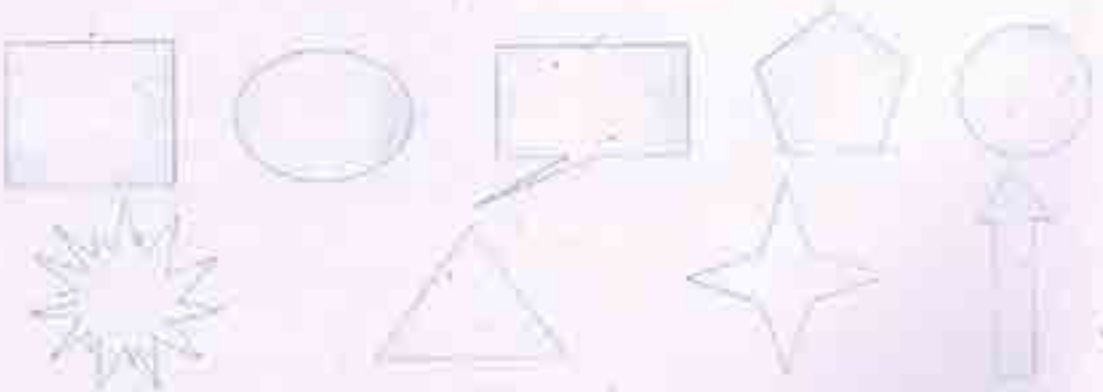


Activity: take a piece of string or thread.

Hold the thread in your hands and s-t-r-e-t-c-h

Open and closed plane figures

Look at the following figures.



Each of these figures is a closed figure.

gures shown below are not closed. These are called open figures.

Activity II

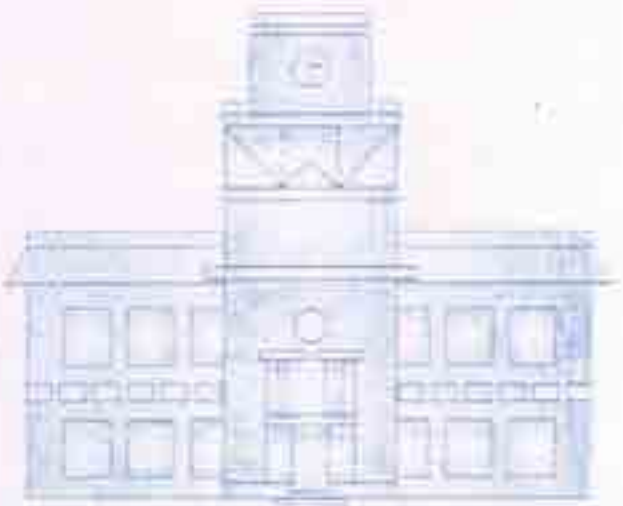
1. In the figure, count the number of

Squares

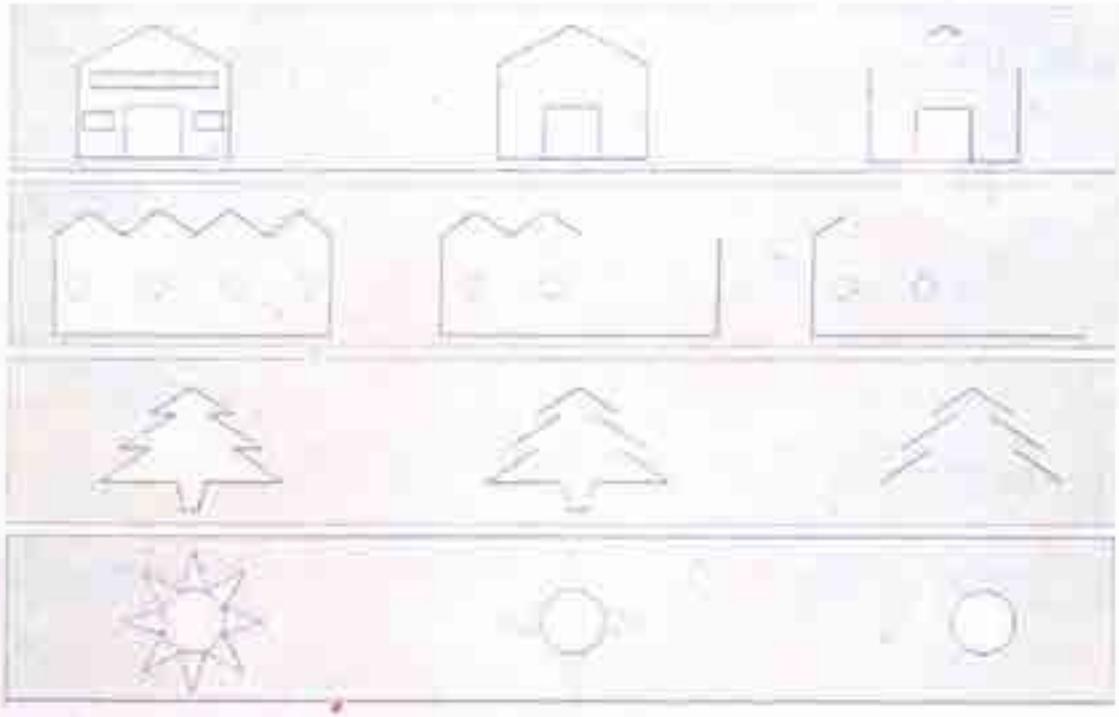
Circles

Triangles

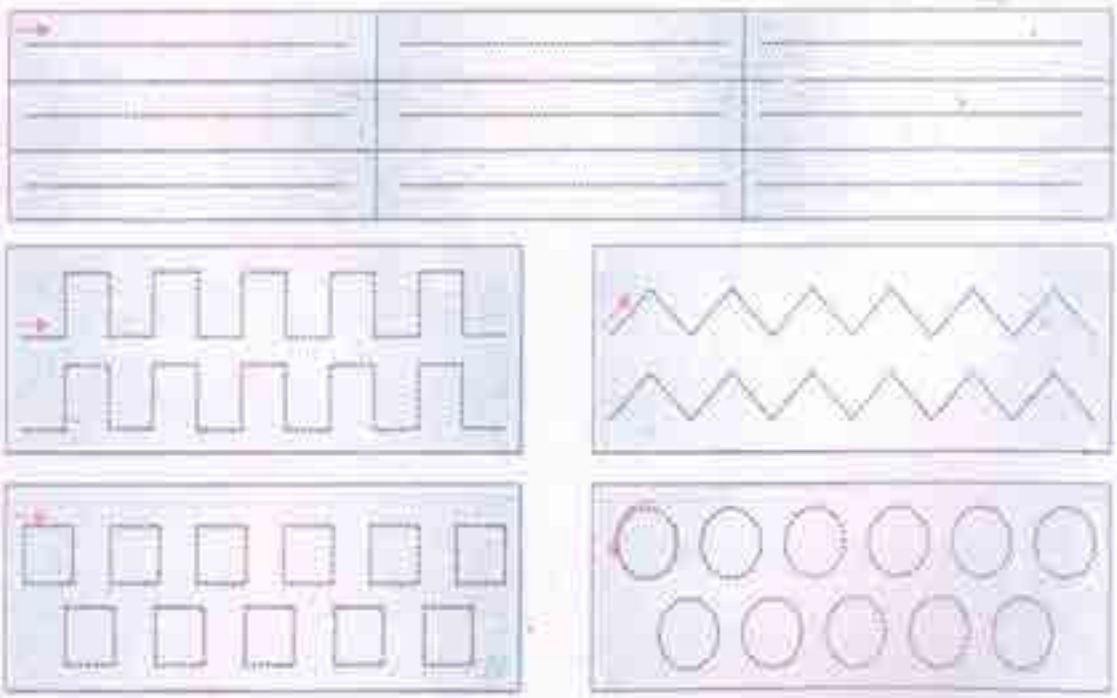
Rectangles



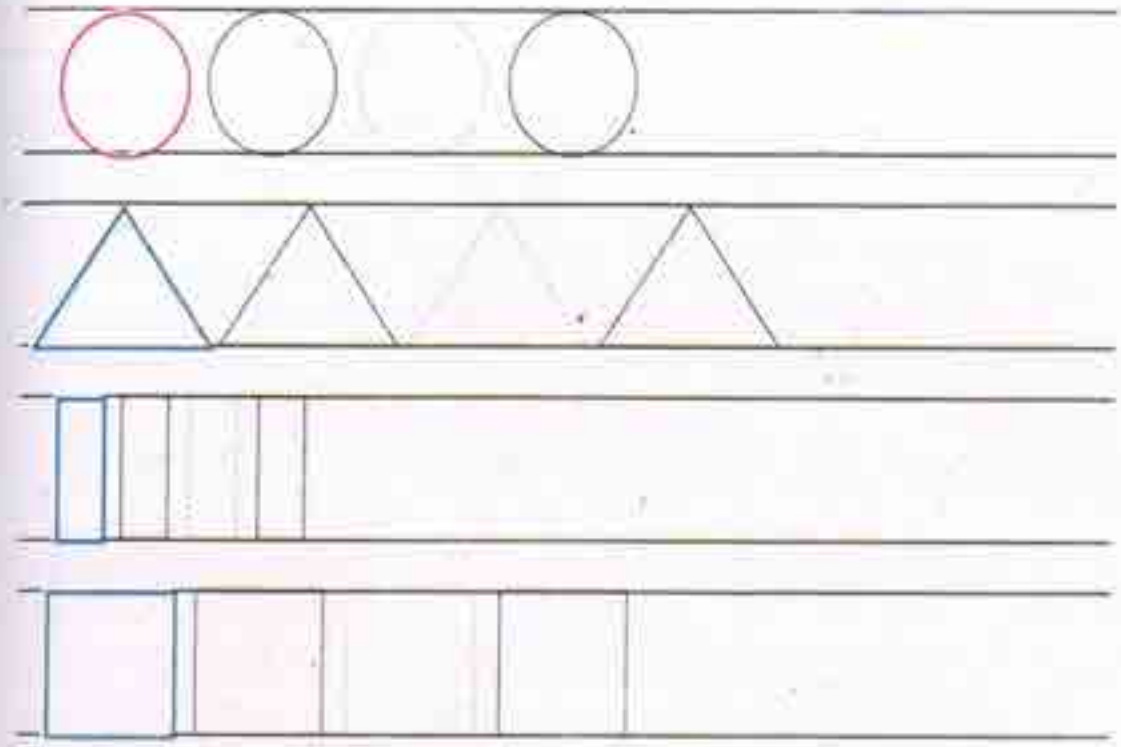
2. Complete the incomplete drawing:



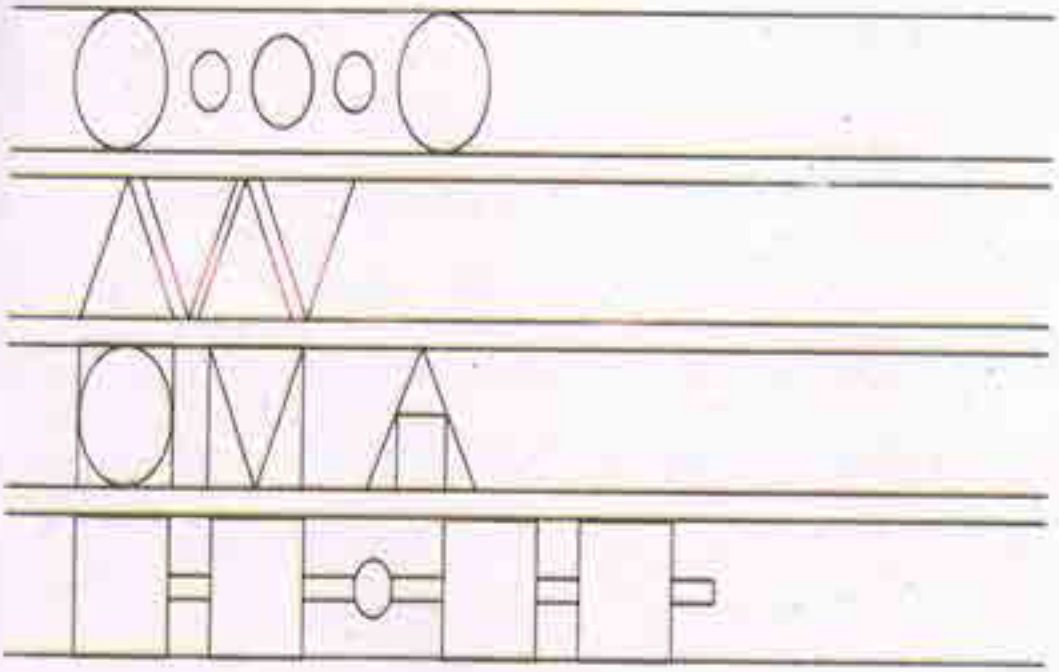
3. Draw along the dots following the directions of the arrows



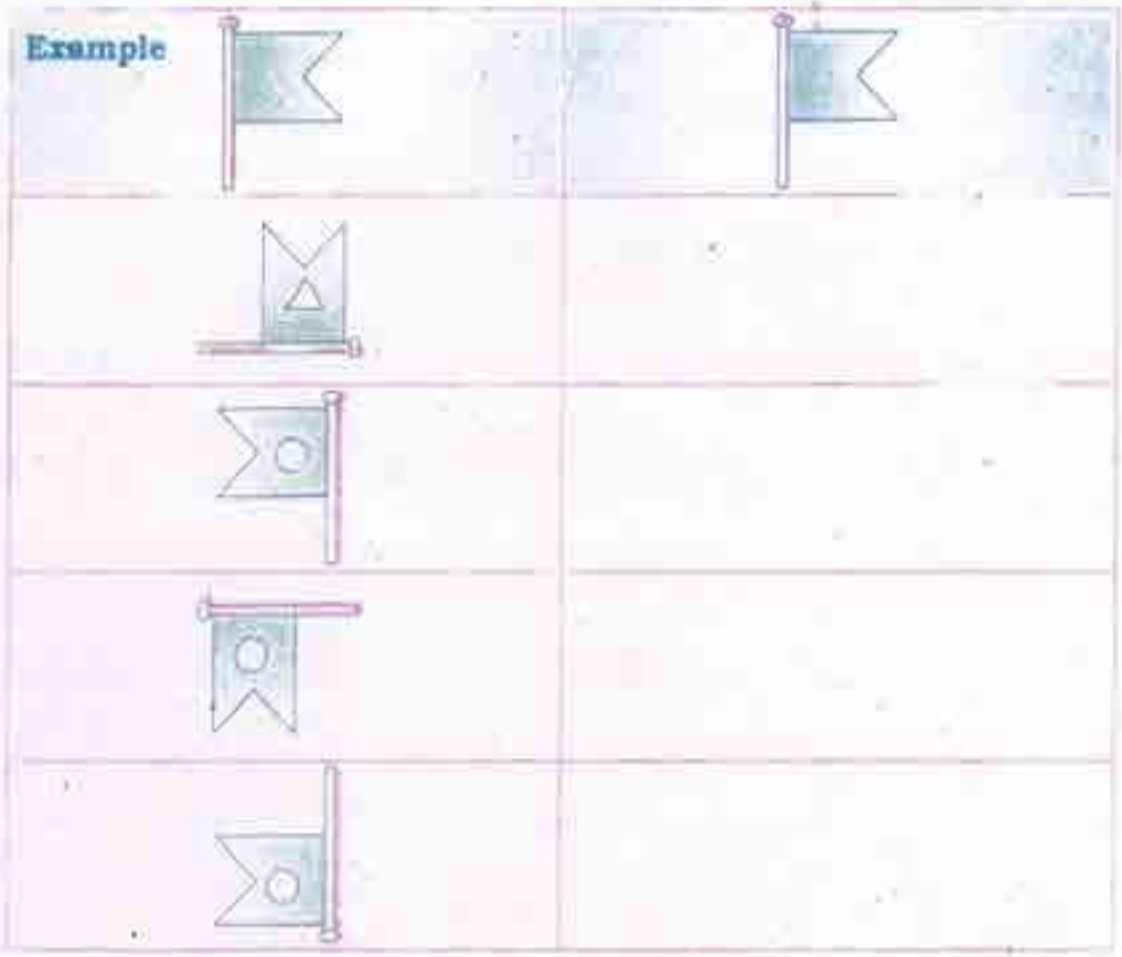
4. First draw the shape along the dots. Then draw some more shapes.



5. Extend the series :



6. Copy the given figure on the left in the light hand column:



7. Count the number of straight lines and curved lines and write in the box given below.

Straight lines ____ Curved lines ____

8. Draw four straight lines and three curved lines in the space given below:

Straight lines **Curved lines**

9. Mark a tick (✓) on the objects which can be used to draw curved Lines.

2JUZ23

How Many Times?

Leggy Animals

There are 5 goats.

How many legs altogether?

4 + 4 + 4 + 4 + 4 = 20

or 5 times 4 is 20

or 5 × 4 = 20

How many spiders? _____

One spider has _____ legs.

In all, spider legs are 3 times _____

or ___ + ___ + ___ = _____

or 3 × _____ = _____

Do you know this leggy fellow?

This is an octopus.

It lives in the sea.

It also has 8 legs.

So how many legs altogether do 5 octopuses have?

___ + ___ + ___ + ___ + ___ = _____

or 5 times = _____ = _____

or 5 × = _____ = _____

Find the Number without Counting

How many flowers in a flower bed?

It has 4 columns. Each column has 6 flowers. So altogether the flower bed has 4 times 6 flowers,

$6 + 6 + 6 + 6 = 24$ or

$4 \times 6 = 24$

Let's try another way. The flower bed has 6 rows. Each row has 4 flowers. Altogether the flower bed has 6 times 4 flowers,

$4 + 4 + 4 + 4 + 4 + 4 = 24$

or $6 \times 4 = 24$

In the same way, how many bottles are these?

_____ times _____ = _____ bottles

How many eggs?

_____ times _____ = _____ eggs

Practice Time

A. *Rewrite using the + sign.*

2 × 5 is 2 times 5 or 5 + 5

4 × 18 is 4 times _____ or _____ + _____ + _____ + _____

3 × 20 is _____ times _____ or _____ + _____ + _____

8 × 9 is _____ times _____ or _____ + _____ + _____ + _____ + _____ + _____ + _____ +

B. *Tell how many times!*

9 + 9 + 9 + 9 + 9 + 9	= 6 × 9 = 54
4 + 4 + 4 + 4 + 4	= 5 × 4 = 20

8 + 8 + 8 = ___ × 8 = _____

3 + 3 + 3 + 3 + 3 = 5 × ___ = _____

30 + 30 + 30 = ___ × ___ = _____

7 + 7 + 7 + 7 + 7 + 7 = ___ × ___ = _____

12 + 12 + 12 + 12 = ___ × 12 = _____

6 + 6 + 6 = ___ × ___ = _____

10 + 10 + 10 + 10 = ___ × ___ = _____

2 + 2 + 2 + 2 + 2 = ___ × ___ = _____

6 + 6 + 6 + 6 + 6 + 6 + 6 = ___ × ___ = _____

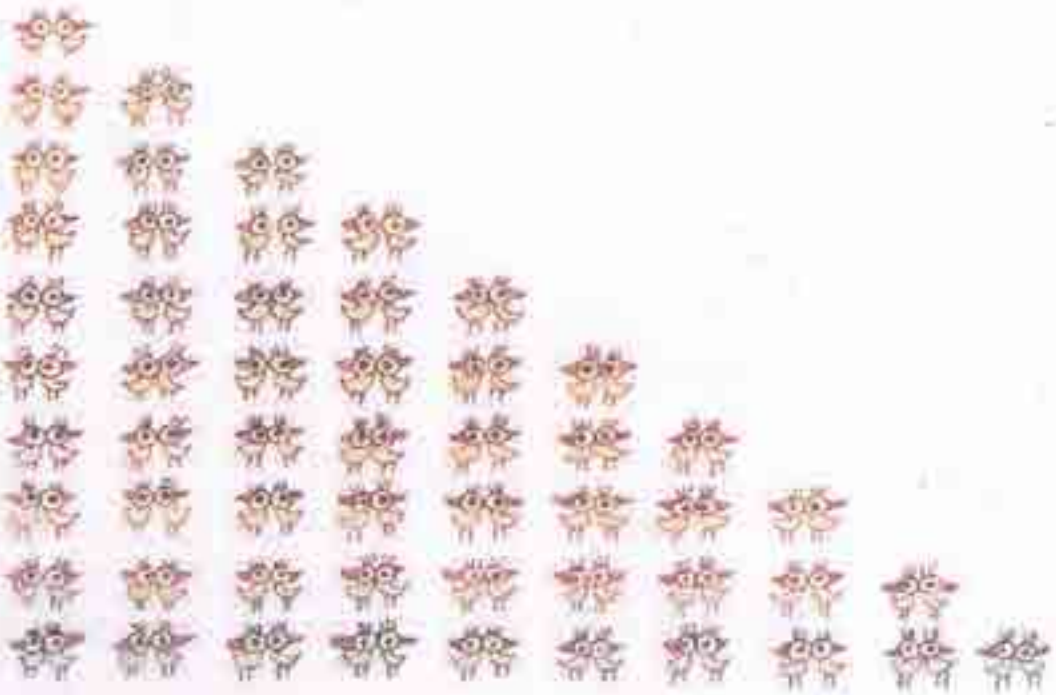
C. Ramu bought 4 packets of biscuits. Each packet has 4 biscuits. How many biscuits did Ramu buy?

D. There are 12 desks in a classroom. Each desk has 4 legs. What is the total number of legs of the desks?

E. Sabiha brought home 3 bunches of flowers. Each bunch has 4 flowers. How many flowers were there?

F. One rail coach has 8 heels. How many wheels in all in 6 coaches?

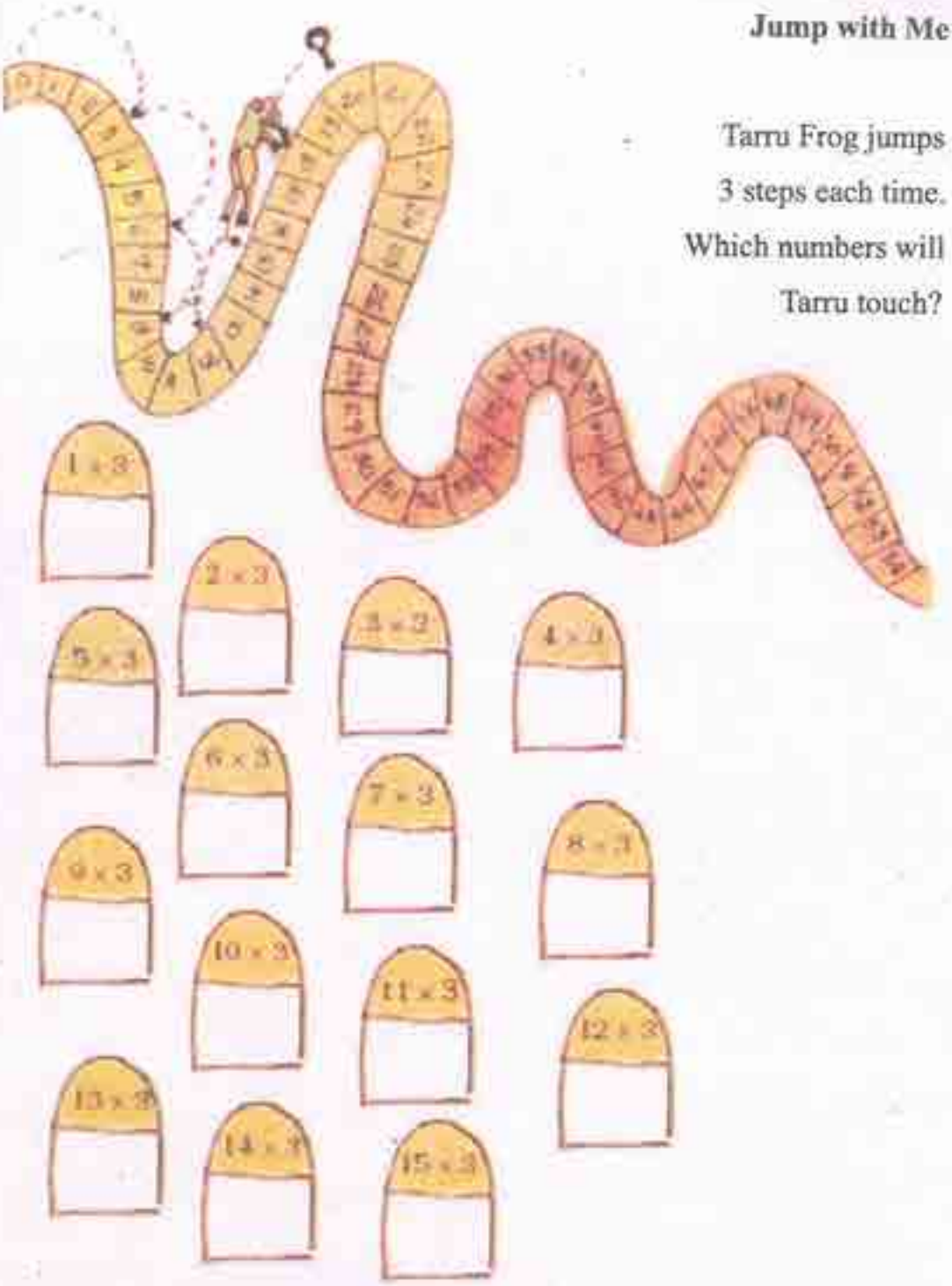
After children attempt word problems, there should be a discussion on how they arrived at their answers. This will help children develop a conceptual understanding of multiplication.



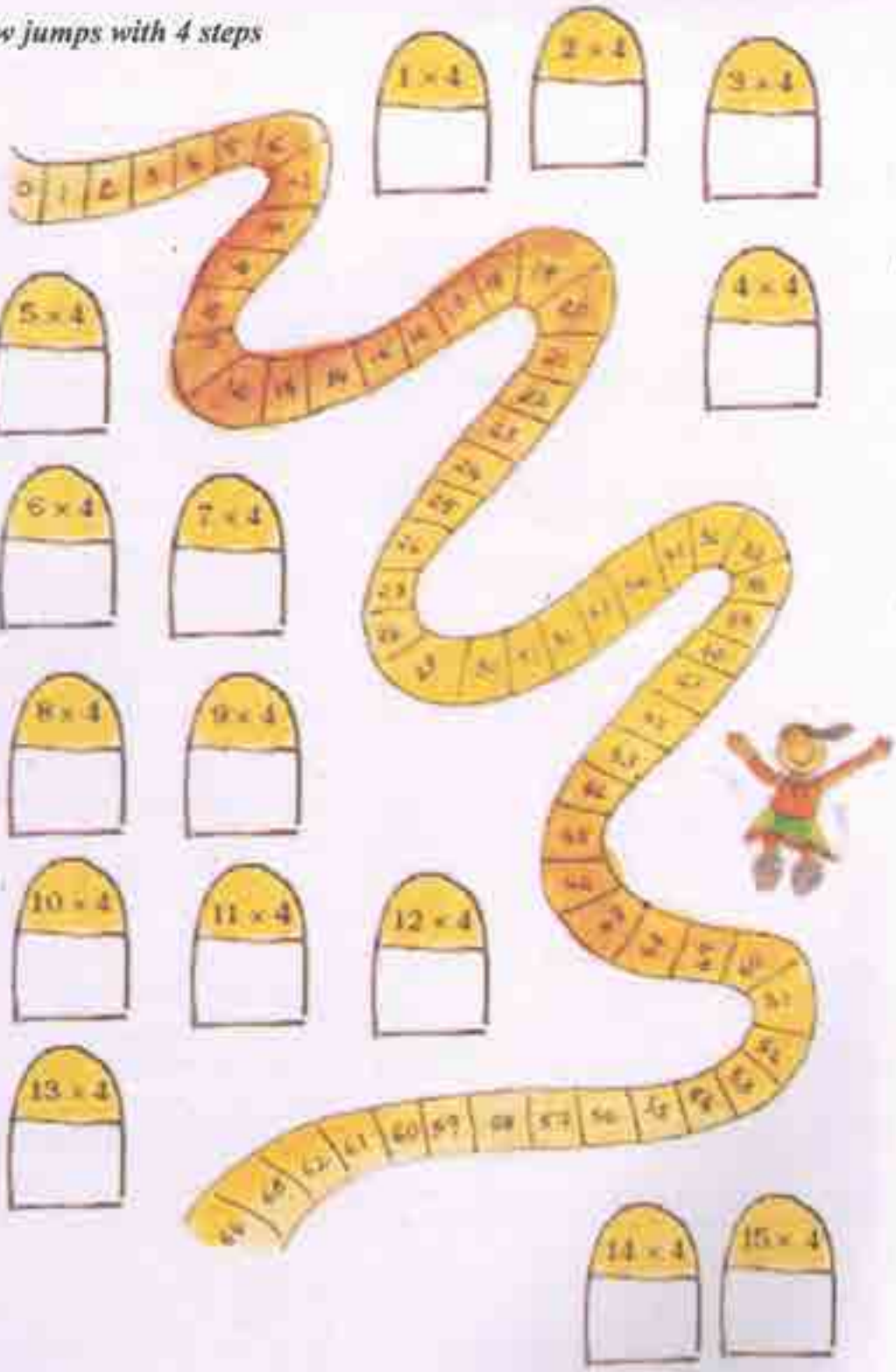
1 time 2	is 2	or 1 × 2	= 2
2 times 2	is 4	or 2 × 2	= 4
3 times 2	is 6	or 3 × 2	= 6
4 times 2	is _____	or 4 × 2	= _____
5 times 2	is _____	or 5 × 2	= _____
6 times 2	is _____	or 6 × 2	= _____
_____ times 2	is _____	or × _____ 2	= _____
_____ times _____	is _____	or 8 × 2	= _____
_____ times _____	is _____	or 9 × 2	= _____
_____ times _____	is _____	or 10 × 2	= _____

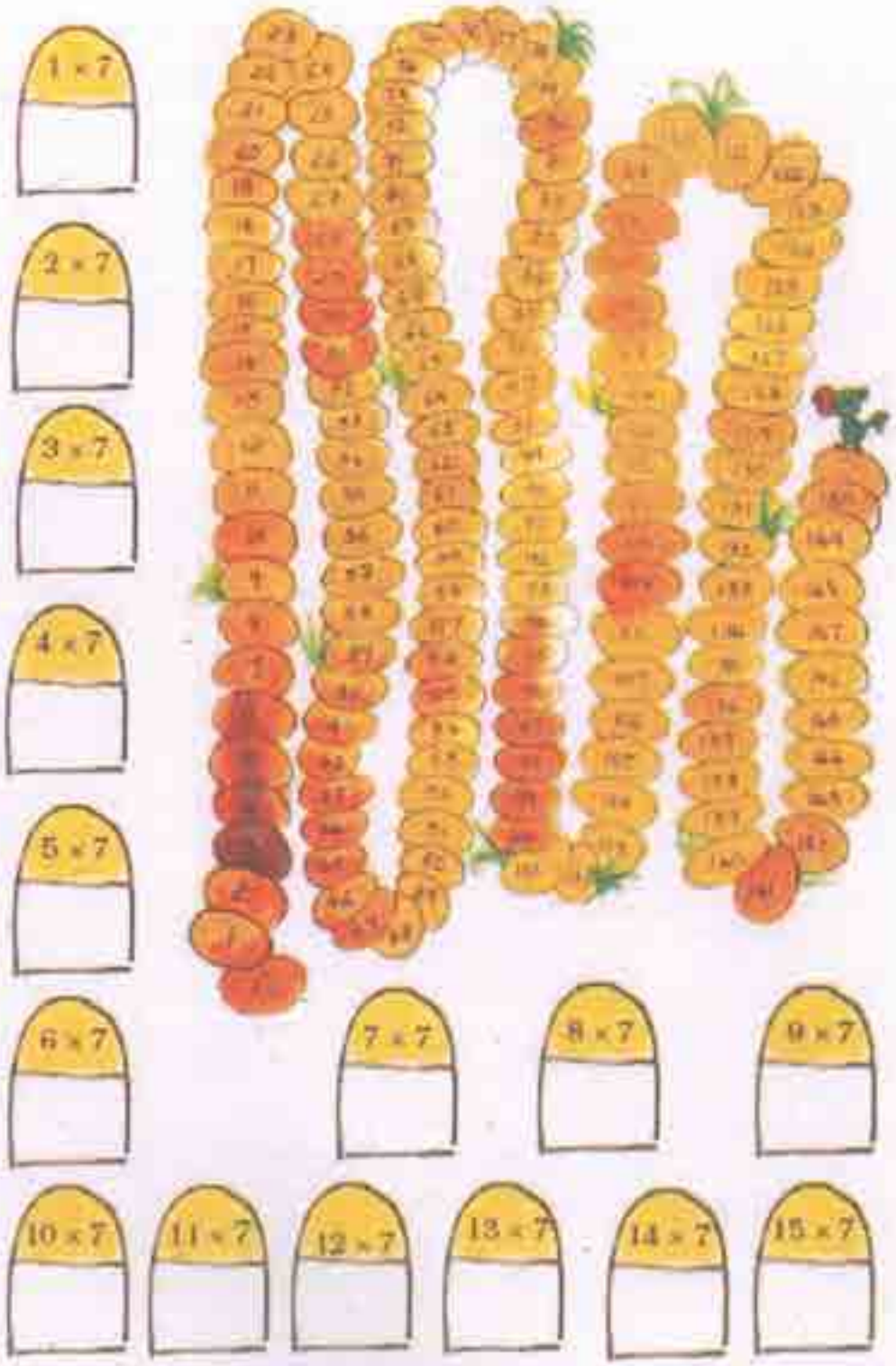
Jump with Me

Tarru Frog jumps
3 steps each time.
Which numbers will
Tarru touch?



Show jumps with 4 steps




1 × 7
2 × 7
3 × 7
4 × 7
5 × 7
6 × 7
7 × 7
8 × 7
9 × 7
10 × 7
11 × 7
12 × 7
13 × 7
14 × 7
15 × 7

Stick Play

Renu had some sticks. She arranged them like this:

1 time 5 = 5

2 times 5 = 10

3 times 5 = 15

4 times 5 = 20

Then she counted how many times the sticks were crossing each other. She found that 4 times 5 = 4 × 5 = 20

Let's try making a 2 times table with sticks:

$1 \times 2 = 2$

$2 \times 2 = 4$

$3 \times 2 = 6$

$4 \times 2 =$

$5 \times 2 =$

$6 \times 2 =$

$7 \times 2 =$

$8 \times 2 =$

$9 \times 2 =$

$10 \times 2 =$

Children can be given 16 and 24 sticks to arrange and encouraged to try different arrangements like 4 × 4, 2 × 8, 8 × 2 for 16 sticks and 12 × 2, 8 × 3, 4 × 6, 6 × 4, 3 × 8, 2 × 12 for 24 sticks.

Now draw sticks to make the multiplication table of 6:

Shopping with Tables

How much do these things cost?

4 toffees cost rupees.

[Hint: 4 × 2]

3 pencil boxes cost rupees.

10 pencil boxes cost rupees.

9 balloons cost rupees.

5 toys cost rupees.

7 face masks cost rupees.

Practice Time

A. Complete the following:

2×7 = _____

4×9 = _____

5×8 = _____

10×6 = _____

5×9 = _____

3×9 = _____

5×2 = _____

3×10 = _____

2×8 = _____

10×8 = _____

B. Look at the patterns and complete them.

3, 6, 9, _____, _____, _____.

2, 4, 6, _____, _____, _____.

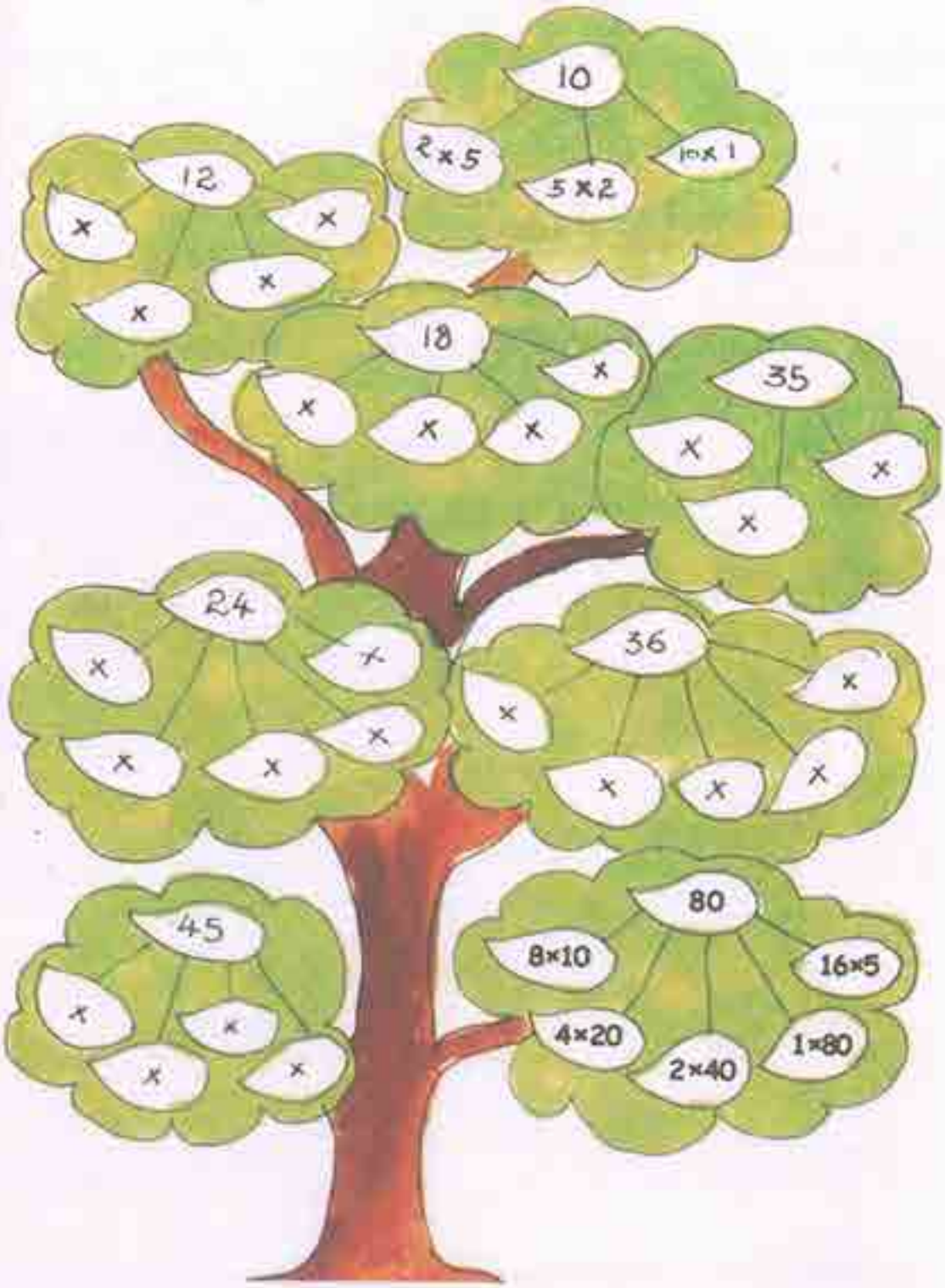
10, 20, 30, _____, _____, _____.

4, 8, 12, _____, _____, _____.

5, 10, 15, _____, _____, _____.

30, 60, 90, _____, _____, _____.

C. Complete the multiplication tree



D. How many in all?

❖ The almirah has 4 shelves. There are 5 books in each shelf. How many books are in the almirah?

$4 \times 5 = 20$ books

❖ A shirt has 5 buttons. How many buttons would 3 shirts have?

❖ There are four fans. Each fan has 3 blades. What is the total number of blades in all?

❖ A box contains 6 apples. How many apples in all will seven boxes have?

❖ How many corners would 4 triangles have?

E. Some multiplication facts:

- 8 × 3 = ____
- 3 × ____ = ____
- ____ × ____ = 42
- 5 × ____ = 40
- ____ × ____ = 54
- 5 × ____ = 35
- ____ × 6 = 36
- 10 × ____ = ____
- ____ × 9 = 36
- ____ × 7 = 28

Multiplication Table of 1

one time one is	$1 \times 1 = 1$
two times one is	$2 \times 1 = 2$
three times one is	$3 \times$ ____ = ____
four times one is	____ × = ____ = ____
____ times one is	____ × ____ = ____
____ times one is	____ × ____ = ____
____ times one is	____ × ____ = ____
____ times one is	____ × ____ = ____

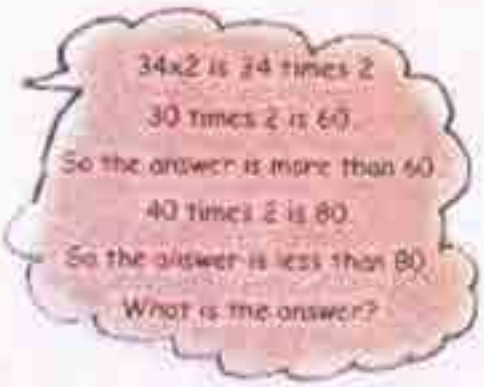
Multiplying Big Numbers

A. Two toffees were given to each student in the class. If there were 34 students, how many toffees were given in all?

Total students present = 34

Each student gets 2 toffees.

So total number of toffees given is 34×2.



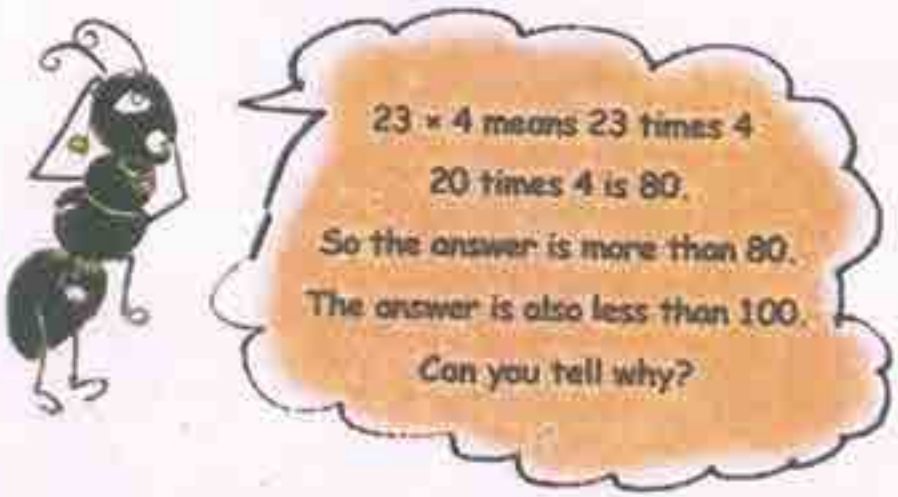

How can we find 34 times 2?
I know!
Vimla Wrote
What's this?
30
4
2
30
See, 34 is 30 and 4. Right?
Next Vimla Wrote
30
4
2
2 × 30
60
2 × 4
8
30 times 2 is 60 and 4 times 2 is 8.
But what's the answer?
Just add the numbers in the boxes, and you get the answer 60 + 8 = 68
68 toffees in all
Wow! That's smart.

B. In a picnic 4 fruits were give n to every student. The number of students was 23. Find out the total number of fruits given.

Number of students in the picnic = 23

Fruits given to each student = 4

Total number of fruits = 23 × 4



Let us try if we can do this by Vimla's method.

	20	3
4	20 × 4 = 80	3 × 4 = 12

Adding 80 and 12 give

$$\begin{array}{r} 80 \\ +\ 12 \\ \hline 92 \end{array}$$

So 23 time 4 is 92.

The activities given in this chapter are designed to develop children's conceptual understanding of multiplication. The standard method for multiplying larger numbers may be efficient, but teaching it too early may actually hinder learning. The method given here builds on children's growing sense of two -digit and three-digit numbers. Children should also be encouraged to the result of the operation.

Practice Time

A. Multiply:

- $2 \times 3 =$
- $21 \times 4 =$
- $11 \times 5 =$
- $20 \times 42 =$
- $26 \times 4 =$
- $25 \times 3 =$
- $35 \times 3 =$
- $32 \times 5 =$

- $43 \times 2 =$
- $24 \times 2 =$
- $30 \times 5 =$
- $23 \times 9 =$
- $38 \times 2 =$
- $24 \times 5 =$
- $48 \times 4 =$
- $58 \times 2 =$

B. First guess the answer and then calculate:

- A flower has five petals. A bunch of flowers has 13 flowers. How many petals are there in the bunch?

- A book has 64 pages. What will be the total number of pages in 8 such books?

- Students stand in rows in the assembly. There are six rows of students. Each row has 17 students. How many students are there?

❖ A design has 3 flowers in it. A piece of cloth has 17 such designs. How many flowers will be on the cloth?

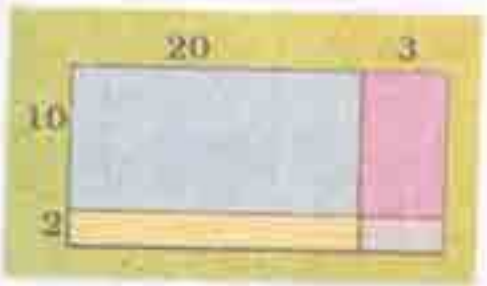
How many in 23 dozen?

Many things are sold by the dozen. For example, bangles and bananas are often sold by the dozen.

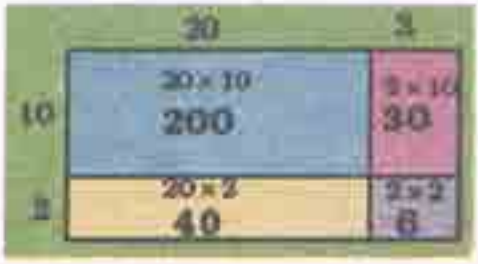
1 dozen bananas means 12 bananas.

So 23 dozen bananas is 23×12 bananas.

Vimla Wrote



Next Vimla wrote



And Vimla wrote 200

40

30

$\underline{+\ 6}$

$\underline{276}$

So 23 dozen bananas is 276 bananas.

Now try doing 43 × 13

43 is 40 and 3

13 is 10 and 3

Write the numbers
in the boxes as shown.

Add the numbers in the boxes:

400

120

30

+ 9

559

So $43 \times 13 = 559$

Practice Time

First guess the answer and then check it by calculating :

$42 \times 23 =$ _____ $73 \times 11 =$ _____

$51 \times 13 =$ _____ $54 \times 12 =$ _____

$25 \times 36 =$ _____ $12 \times 14 =$ _____

Multiplication Patterns

A. $9 \times 1 = 9$

$9 \times 2 = 18$	$1 + 8 = 9$
$9 \times 3 = 27$	$2 + 7 = 9$
$9 \times 4 = 36$	$3 + 6 = 9$
$9 \times 5 = 45$	$4 + 5 = 9$
$9 \times$ ___ = ___	___ + ___ = ___
$9 \times$ ___ = ___	___ + ___ = ___
$9 \times 8 =$ _____	___ + ___ = ___

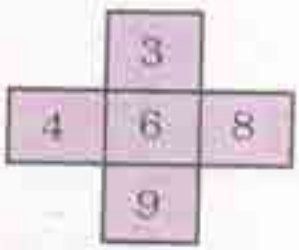
Did you see the pattern in the 9 times table? What numbers are adding up to 9?

Observing patterns in multiplication tables deepens the understanding of the number system

B. Complete the grid by multiplying the numbers

×	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4										
5										
6										
7										
8										
9										
10										

Look at the cross in your grid.



Add the numbers together from top to bottom.

$3 + 6 + 9 = 18$

Add the numbers together from left to right.

$4 + 6 + 8 = 18$

The total is the same.

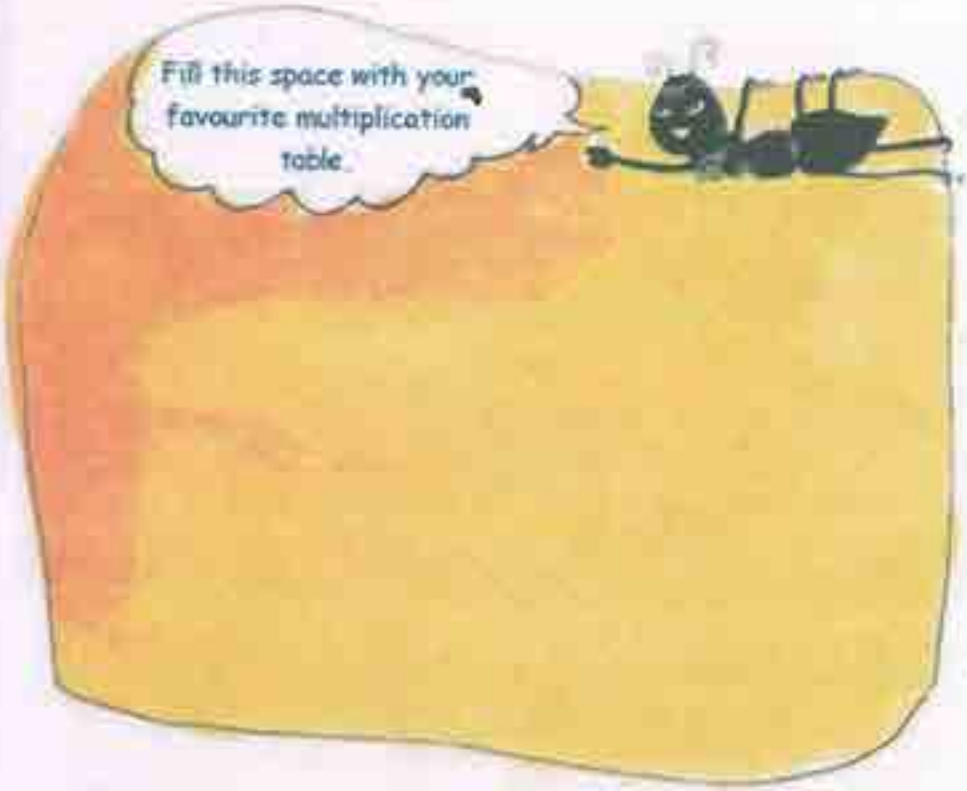
Look for other such crosses and copy them in your Notebook.

C. ■ Mark the numbers 1–10 in the same grid in one colour.

■ Mark the numbers 12–20 in another colour.

■ Similarly mark 21–30 in a third colour.

Do you see any colour pattern?

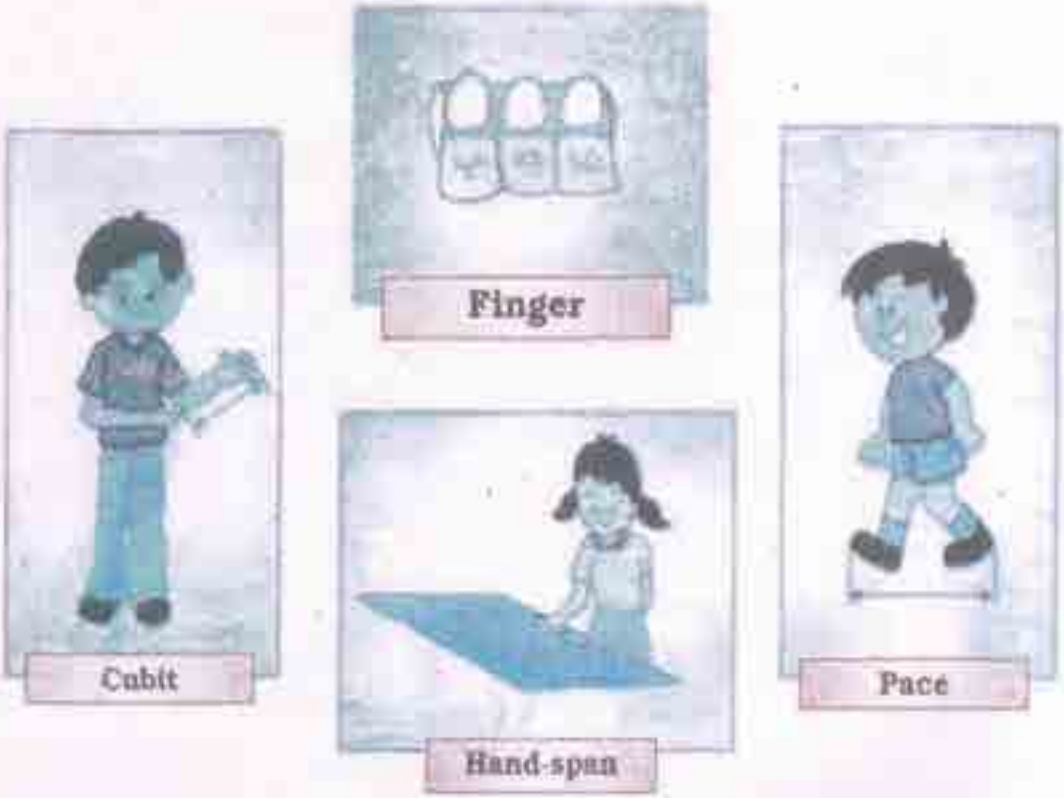


LENGTH, MASS (OR WEIGHT) AND CAPACITY

Length

(a) Non-standard units

In Class II, you have learnt about the use of body parts, namely a finger, hand-span, cubit and pace in measuring the length of various objects such as a duster, a desk, a table, a room and a playground.



These body parts are non-standard units of measuring lengths and distances as they differ from person to person.

Since the size of a body part varies from person to person, the measurement of length of an object given by two persons will be different. So, non-standard units are not considered appropriate units for measuring length.

(b) Arbitrary units

We can use objects like a rod, a pencil, a crayon etc. to measure the lengths of objects. Here, when two persons measure the length of a Playground by using a rod, they get the same result.

In the picture shown below, both the children find the same length i.e.; 3 rods.

However, if the rods used by the two persons differ in length, then their results would differ. Therefore, there is a need for some standard unit that gives the same result of measurement no matter who measures the length.

(c) Standard units of length

The standard unit of measuring length is a metre

What is a metre?

In the above pictures, everyone is measuring with a rod. This is called a metre-rod.

A metre–rod

Here is a metre-rod. It is divided into 100 equal parts. The length of each part is called a centimeter.

So, 1 metre =100 centimetres

Using this metre-rod, we can find the length of an object, the height of an object and distance between two objects.

The length of the blackboard is more than 1 metre.

The length of the plant is about 1 metre

The distance between two children is less than 1 metre.

Activity: Take a metre-rod. Cut a paper tape equal to the length of the metre-rod. This is now a paper tape which is 1 metre long. Use this tape and measure the following objects. Classify them in three Categories:

1. Those which measure more than 1 metre.
2. Those which measure 1 metre.
3. Those which measure less than 1 metre.

A table

A cupboard

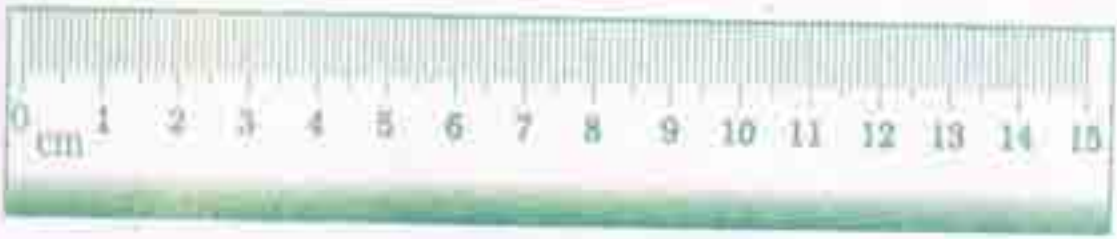
A door

A chair

Here is a metre-tape that you find at your home. It is one and a half metre long. It is divided into 150 equal parts. You can use this tape also in measuring the above objects.

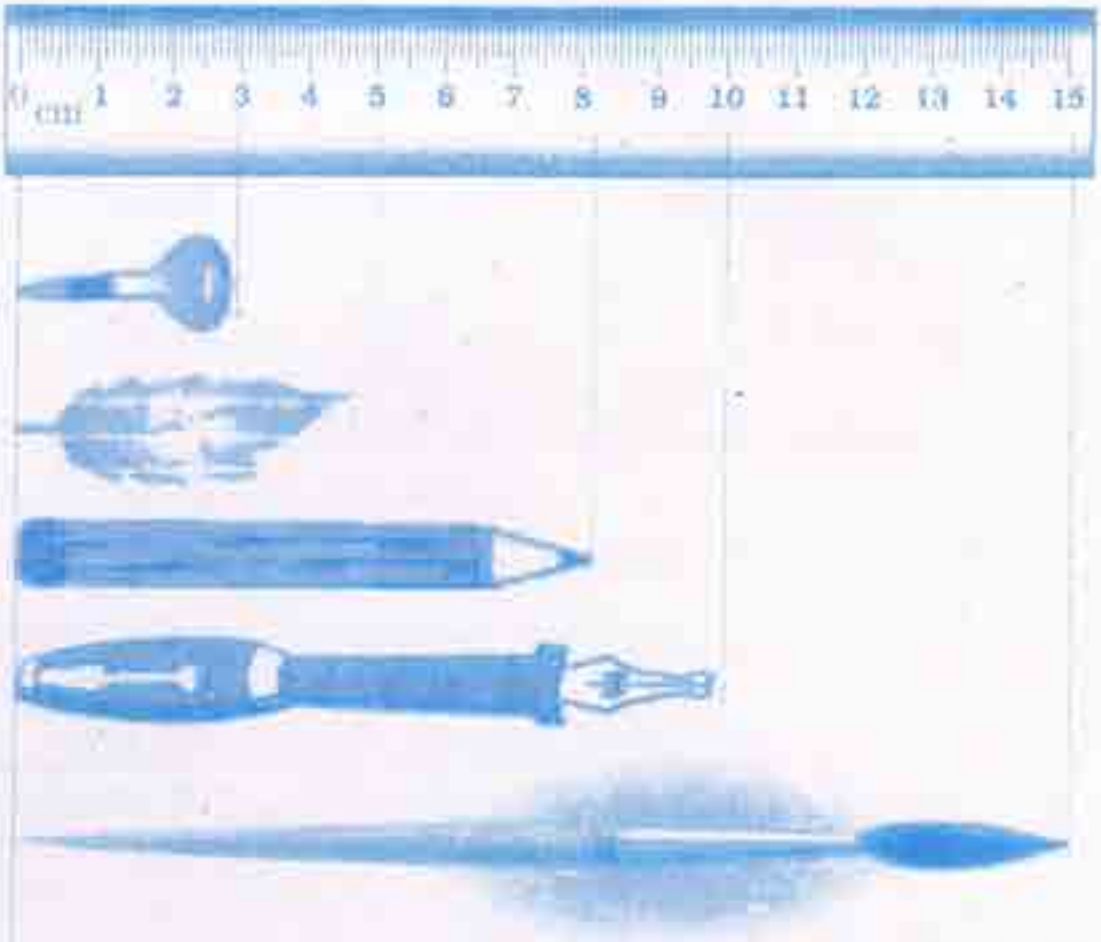
A metre-tape

Here is a scale that you find in geometry box.



15 – centimeter scale

This small scale is useful in measuring small distances and objects of smaller length and heights.



We also have 30-centimetre scale. This can also be used for measuring smaller lengths, heights and distances.

We write m for metre; cm for centimeter and dm for decimetre.

Thus,

10 cm = 1 dm
10 dm = 1 m
} → 100 cm = 1

Conversion of units of length

(a) From metres to decimeters

We know that 1m = 10 dm

So, 2 m = (10 × 2) dm = 20 dm 3 m = (10 × 3) dm = 30 dm

4 m = (10× 4) dm = 40 dm 7 m = (10 × 7) dm = 70 dm

From the above, we find that to convert metres into decimeters, we multiply 10 by number of metres.

(Shortcut: Place one zero to the right of the number of metres.)

Further, to convert metres and decimeters into decimeters, we first convert the metres to decimeters and then add to these the number.

4m 7dm = 4m + 7 dm
= (4× 10) dm + 7 dm
= 40 dm + 7 dm = 47 dm

9 m 5 dm = 9 m + 5 dm
= (9 × 10) dm + 5 dm
= 90 dm+ 5 dm = 95 dm

Activity 1

1. Convert into decimeters

3 metres
11 metres
21 metres
45 metres

7 metres
19 metres
30 metres
50 metres

2. Convert into decimeters

2 m 2 dm

3 m 4 dm

5 m 5 dm

6 m 7 dm

3 m 9 dm

9 m 3 dm

8 m 8 dm

4 m 4 dm

(b) From decimetres to centimetres

We know that 1 dm =10 cm.

So, 2 dm = (10 × 2) cm = 20 cm

3 dm = (10 × 3) cm = 30 dm

4 dm = (10× 4)cm = 40 dm

8 dm = (10 × 8) cm = 80 dm

From the above, we find that to convert decimetres into centimetres, we multiply 10 by the number of decimeters.

[Shortcut: Place one zero to the right of the number of decimetres.]

Further, to convert the decimetres and centimetres, we first convert the decimetres into centimetres and then add to these the number of given centimetres. Thus,

2 dm 3 cm = 2 dm + 3 cm

= (10× 2) cm + 3 dm

= 20 dm + 3 cm = 23 cm

9 dm 7 cm = 9 dm + 7 cm

= (10 × 9) cm + 7 dm

= 90 dm + 7 cm = 97 cm

Activity 2 :

1. Convert into centimetres :

3 dm
4 dm
21 dm
32 dm
43 dm

5 dm
10 dm
37 dm
45 dm
50 dm

2. Convert into centimeters:

1 dm 2 cm	41 dm 9 cm
9 dm 7 cm	10 dm 9 cm
12 dm 3 cm	21 dm 5 cm
29 dm 1 cm	30 dm 3 cm

(c) From metres to centimetres

We know that 1 m = 100 cm

So, 2m = (100 × 2) cm = 200 cm 3 m = (100 × 3) cm = 300 cm

4 m = (100× 4) cm = 400 cm 9 m = (100 × 9) cm = 900 cm

From the above, we find that to convert metres into centimetres, we multiply 100 by the number of metres .

[Shortcut: we place two zero to the right of the number of metres.]

Further, to convert metres and centimetres into centimetres, we first convert the metres into centimetres and then add to these the number of centimetres given. Thus,

2 m 17cm = 2 m + 17 cm
= (100× 2) cm + 17 cm
=200 cm + 17 cm = 217 cm

Similarly,

9 m 5 cm = 9 m + 5 cm
= (100 × 9) cm + 5 cm
=900 cm + 5 cm = 905 cm

Activity III

1. Convert into centimetres:

3 m
5 m
8 m
15 m
21 m

4 m
6 m
13 m
18 m
30 m

2. Convert into centimetres:

1 m 90 cm

9 m 10 cm

18 m 18 cm	8 m 8 cm
20 m 2 cm	37 m 7 cm
8 m 3 dm	7 m 6 dm
15 m 5 dm	10 m 1 m
12 m 2 dm	25 m 5 dm

1. Fill in the blanks:

5 m = ____ dm 6 m = ____ dm 7m = ____ dm

8m = ____ dm 40 m = ____ dm 12 m = ____ dm

5m = ☐ cm	6 m = ☐ cm	27 m = ☐ cm
9 m = ☐ cm	11 m = ☐ dm	14 m = ☐ dm
5 m = ☐ cm	16 m = ☐ cm	7 m = ☐ cm
8 m = ☐ cm	9 m = ☐ dm	11 m = ☐ cm

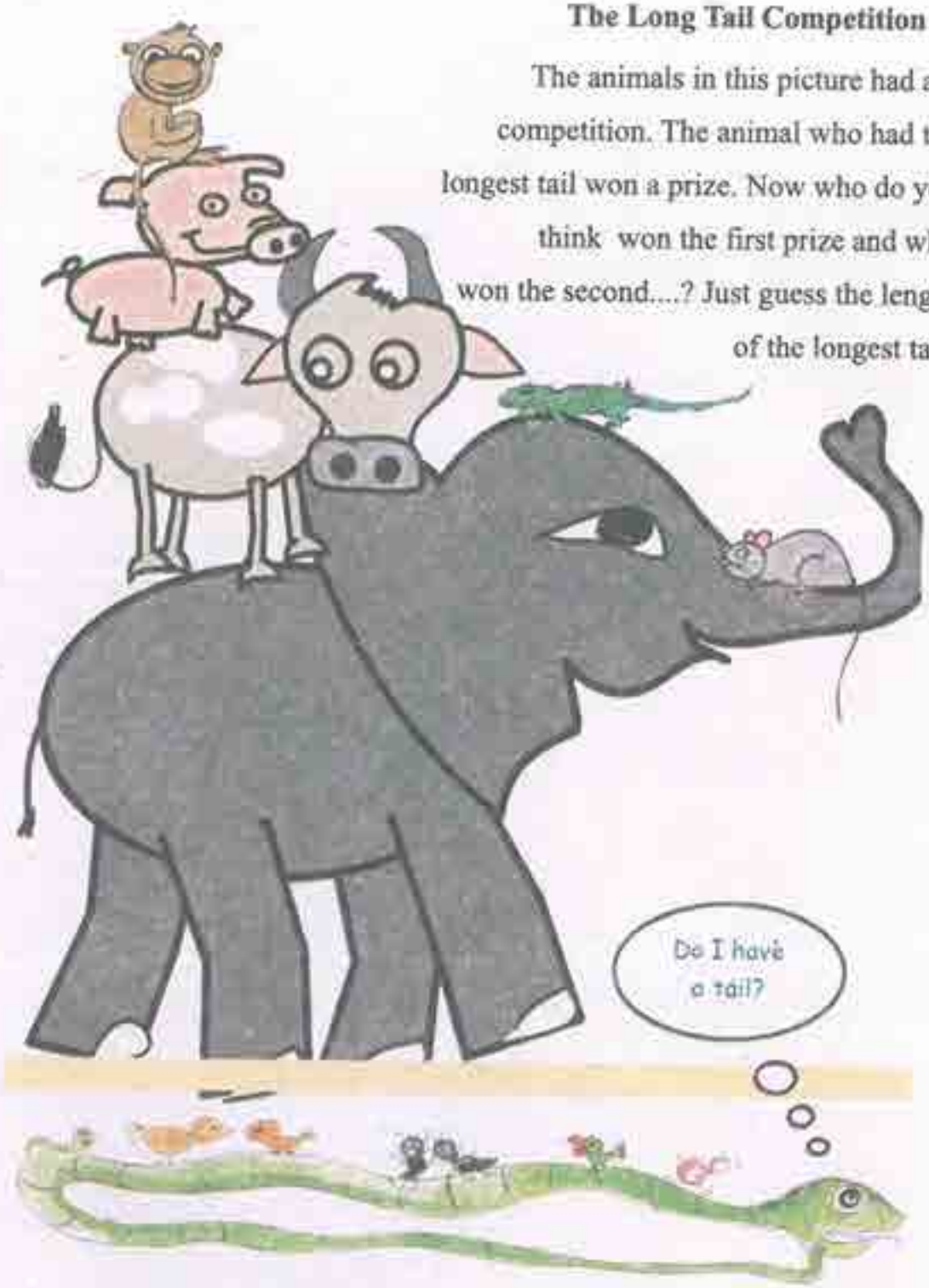
1 m 5dm = ☐ dm	1 m 7 dm = ☐ dm
1 m 9 dm = ☐ dm	1 m 10 cm = ☐ dm
1 m 15 cm = ☐ cm	5 m 19 cm = ☐ cm
2 m 3 dm = ☐ dm	4 m 6 dm = ☐ dm
7 m 7 dm = ☐ dm	3 m 40 cm = ☐ cm
5 m 15 cm = ☐ cm	1 m 70 cm = ☐ cm

2. Put a tick (✓)on the correct relationships:

1 m = 100 dm	1 m = 100 cm
1 dm = 100 m	1 dm = 10 cm
1 dm = 100 cm	1 cm = 100 dm
1 cm = 10 dm	1 cm = 100 m

The Long Tail Competition

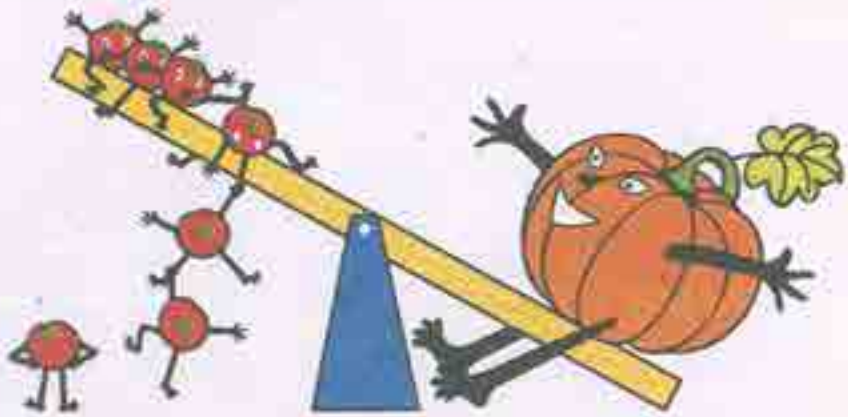
The animals in this picture had a competition. The animal who had the longest tail won a prize. Now who do you think won the first prize and who won the second....? Just guess the length of the longest tail.



Pumpkin Tomato '*Panga*'

This is the playground where tomatoes come to play every day. They love playing on the see-saw. One day a big pumpkin comes and sits on one side of the see-saw. When he does not get up for a long time, the tomatoes decide to sit on the other side and lift the pumpkin up so that he falls off.

The little tomatoes start climbing on to the other side...1, 2, 3, 4, 5 ..... 25. Huh! The pumpkin is still sitting and laughing. So, the big tomatoes decide



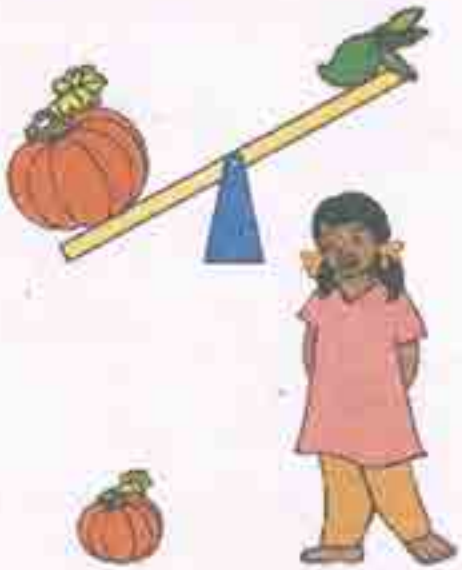
to help. The little ones get down and make way for the fat ones. 1, 2, 3, 4.... 20. Yeah! The pumpkin is up in the air. It shouts — Bring me down, bring me down please!

'Panga' is a colloquial word which gives the sense of a problem or a quarrel. It has been used deliberately because children can find it amusing.

How many small tomatoes do you think could lift the pumpkin up?

- Ten
- Twenty
- Forty

❖ How many big mangoes can balance the pumpkin?



❖ How many pumpkins can balance you on the see-saw?

❖ Name some of your classmates who you think weigh

(a) Almost the same as you

_____

(b) More than you

_____

(c) Less than you

_____

❖ How many books can you lift on one hand keeping your arm straight?

Double her Weight

Kunjamma's parents have a different way of celebrating Independence Day because Kunjamma was born that day. They buy sweets double of Kunjamma's weight and distribute them among poor people.

When Kunjamma was born, she was 3 kg. Today is Independence Day and Kunjamma is 5 years old. She is 28 kg now.

❖ Now guess her weight and the amount of sweets her parents distribute every Independence Day.

Kunjamma's age	*Kunjamma's weight*	*Amount of sweets*
At birth	3 kg	3 + 3 = 6 kg
1 year old	9 kg	_____
2 years old	_____	13 +13 = 26 kg
3 years old	17kg	_____
4 years old	_____	_____
5 years old	28kg	_____

You can ask your parents how much a 2-year old or 4-year old child could weigh.

Yum-yum Rice

Shugoto heard about a new dish on the radio. He wants to try making it. When he notes down how to make it, he gets confused.

This is what he notes down —

(1) Pour 2 spoons of water in the pot

(2) Boil the water and add

- 1 pinch of *daal*
- half kg red chilli powder
- 1 bowl salt

(3) Now put a spoon of rice

(4) Add 2 peas and 8 glasses of mustard seeds

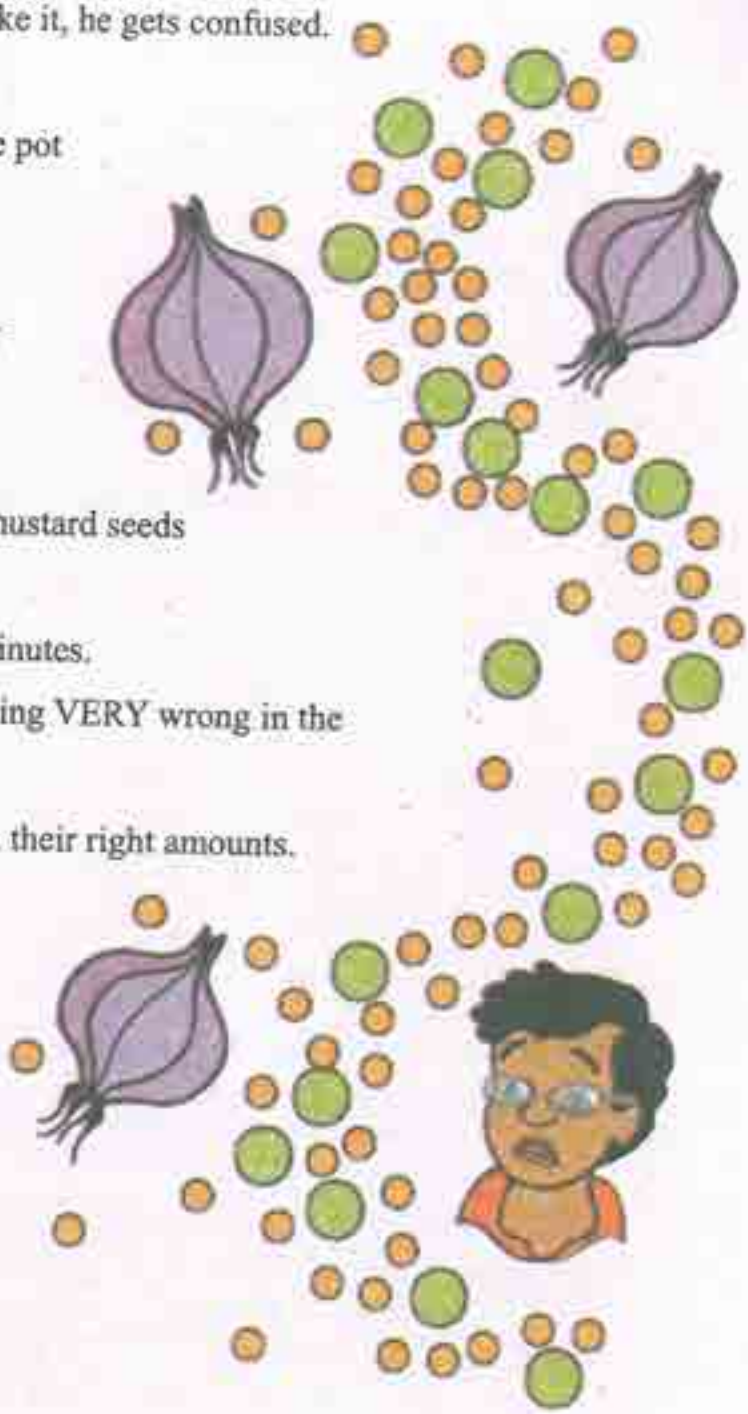
(5) Finally add 1 kg of onions

Mix everything and boil for 15 minutes.

But Shugoto feels there is something VERY wrong in the amounts of everything!!!

❖ Help him match the things with their right amounts.

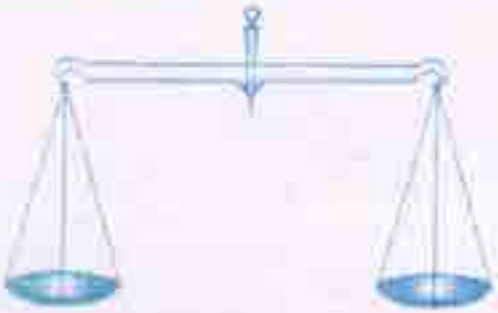
1 kg	rice
half kg	*daal*
_____	peas
_____	water
_____	onions
_____	salt
_____	mustard seeds
_____	red chilli powder



Mass (or weight)

(a) Standard units of mass

We buy several things such as wheat, rice, sugar etc. from shops. We also buy vegetables from a vegetable-shop. In every, case, the shopkeeper measures (or weighs) the things with the help of balance and blocks (also called weights).



A balance

Weight

As we measures lengths in metres (m), decimetres (dm) and centimetres (cm), we measures mass (or weight) in kilograms (kg) and grams (g).

1 kilogram (kg) = 1000 grams (g).

Note: Kilogram is the bigger unit of mass and gram is the smaller unit of mass.

Things like a bag of cement, rice, wheat, sugar are weighed in kilograms whereas smaller quantities of items like toffees, popcorn, grapes are weighed in grams.

Activities

1. (a) Identify five objects that weigh more than 1 kilogram (kg).
   (b) Identify three objects that weigh about 1 kilogram (kg).
   (c) Identity four objects that weigh less than 1 kilogram (Kg).

2. By putting 1 kg weight in the left pan of the balance and two 500g weights in the right pan of the balance, make sure that

1 kg = two 500 g

Similarly, by putting 1 kg weight in the left pan of the balance, and five 200 g weights in the right pan of the balance, make sure that

Similarly,

200 g = 100 g + 100 g
= two 100 g
500 g = 100 g + 100 g + 100 g
= 100 g + 100 g
= five 100 g

3. Let us answer the following questions:

   a) How many 100 g blocks together weigh equal to one 200 g block?

   b) How many 100 g blocks together weigh equal to one 500 g block?

4. Collect any four objects, each of which may weigh

   (a) more than 1 kg.

   (b) about 500 g.

   (c) less than 200 g.

5. How much more is to be added to the following, to make it equal to 1 kg (1000g)?

   (a) 500 g

   (b) 800 g

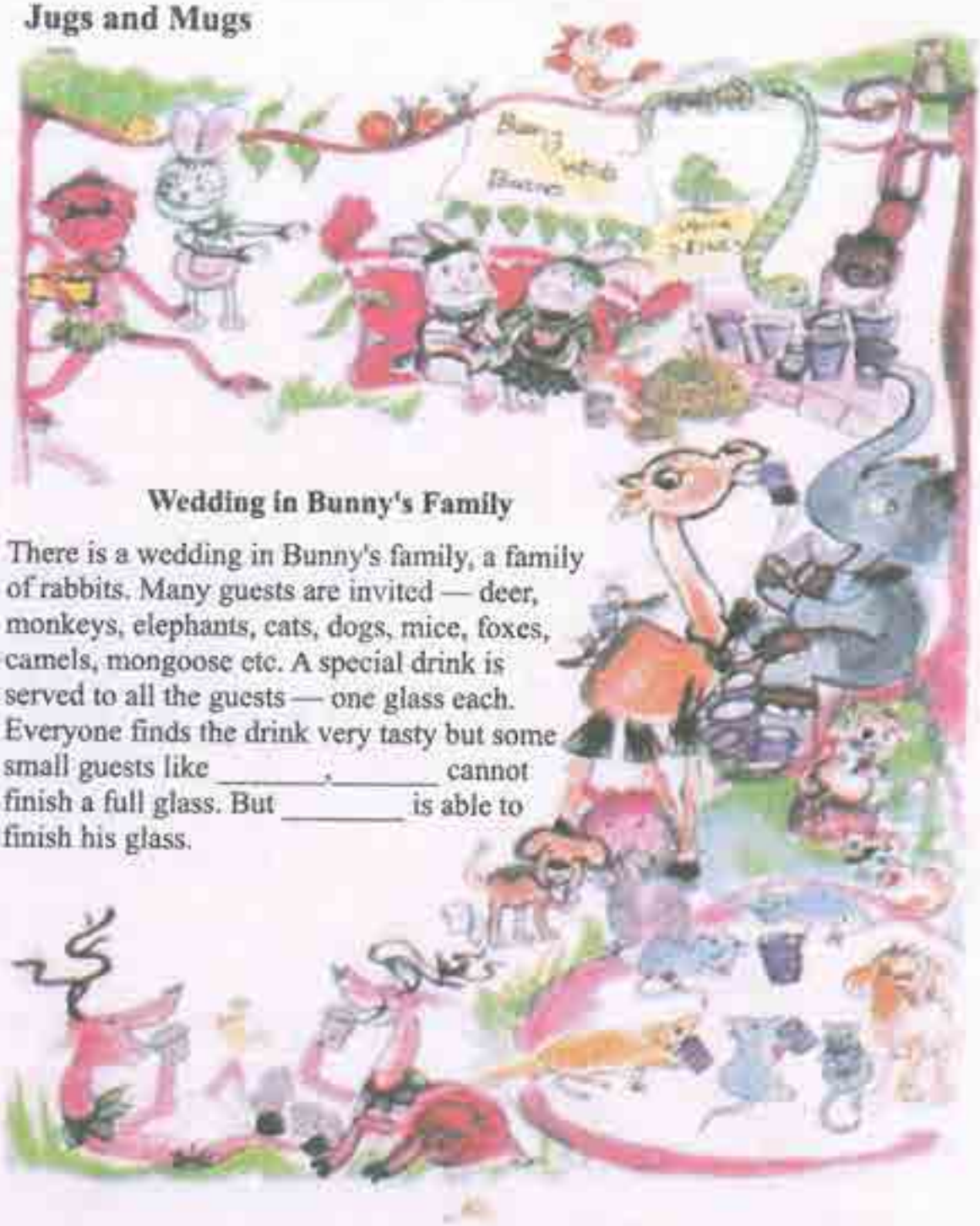
   (c) 700 g

   (d) 300 g

   (e) 400 g

   (f) 200 g

Jugs and Mugs



Wedding in Bunny's Family

There is a wedding in Bunny's family, a family of rabbits. Many guests are invited — deer, monkeys, elephants, cats, dogs, mice, foxes, camels, mongoose etc. A special drink is served to all the guests — one glass each. Everyone finds the drink very tasty but some small guests like _____, _____ cannot finish a full glass. But _____ is able to finish his glass.

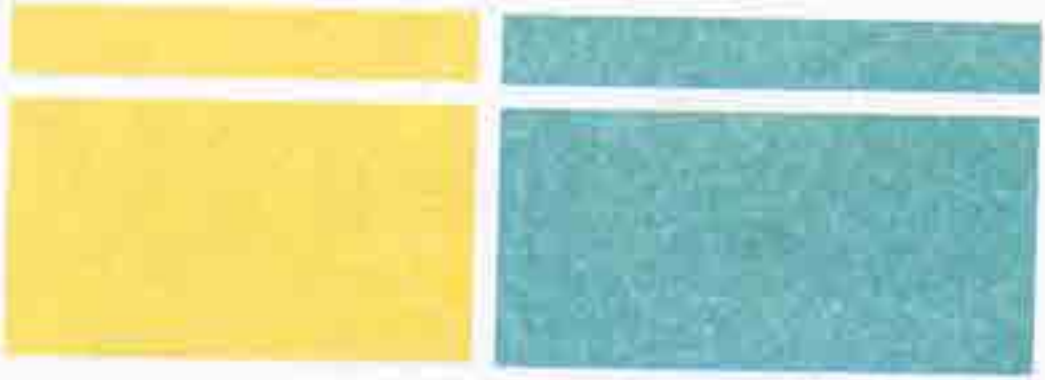
Some others like _____, _____, ask for more than one glass.

Now the trouble begins !!!

There are some big guests who go on gulping down glass after glass...!

Bunny wants to guess who drank how much.

Help him fill the table. Have fun!

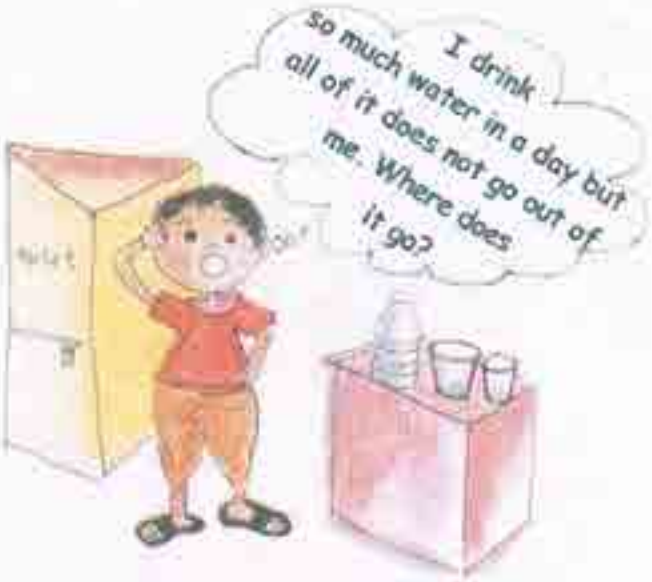


Water In, Water Out?

Have you ever thought
like Laddu?
About how many glasses of
water do you drink in a day?

Summer day : glasses

Winter day : glasses



Can you guess how much
water goes out of you?

Capacity

(a) Standard units of capacity

We all know that liquids are kept in vessels. Big vessels hold more liquid than the small vessels. Litre is the standard unit of measurement of liquids, Milk is sold in litres. Kerosene oil, petrol, diesel and many other kinds of liquid are sold in litres. Litre-measures are of different shapes. Some such shapes are shown below.

1 Litre 1 Litre 1 Litre 1 Litre 1 Litre

Each of these measures holds 1 litre of liquid. Note that we also have much bigger measures which can hold 2litres, 5litres and 10 litres of liquid.

Smaller quantities of liquid are measured in Millilitres. To measure smaller quantities of liquid, we also have smaller measures such as shown below:

100 ml 200 ml 500 ml 100 ml 200 ml 500 ml

We write l for litres; and ml for millilitres.

We have 1 litre (l) = 1000 millilitres (ml).

Bottles and Buckets

Get a 1 litre bottle (can be an empty bottle of water, oil etc.). Now collect some bottles and a mug, jug, glass, bowl, etc. at your house. Use the 1 litre bottle to check which of these holds more than 1 litre and which one holds less than 1 litre. Make a small drawing if you like.

Less than 1 litre	*More than 1 litre*
bowl	big cooking pot

- Now look at the buckets in your house.
- Guess how many litres of water they can hold.
- Use a 1 litre bottle and check if your guess is right for all the buckets.

Bucket	My guess	My measure
Bucket 1		
Bucket 2		
Bucket 3		

Match the Right Pairs

About 12 litres

(to measure milk)

Less than ½ litre

(water tank)

About 5 litres

(bucket)

1000 litres

(eye drops bottle)

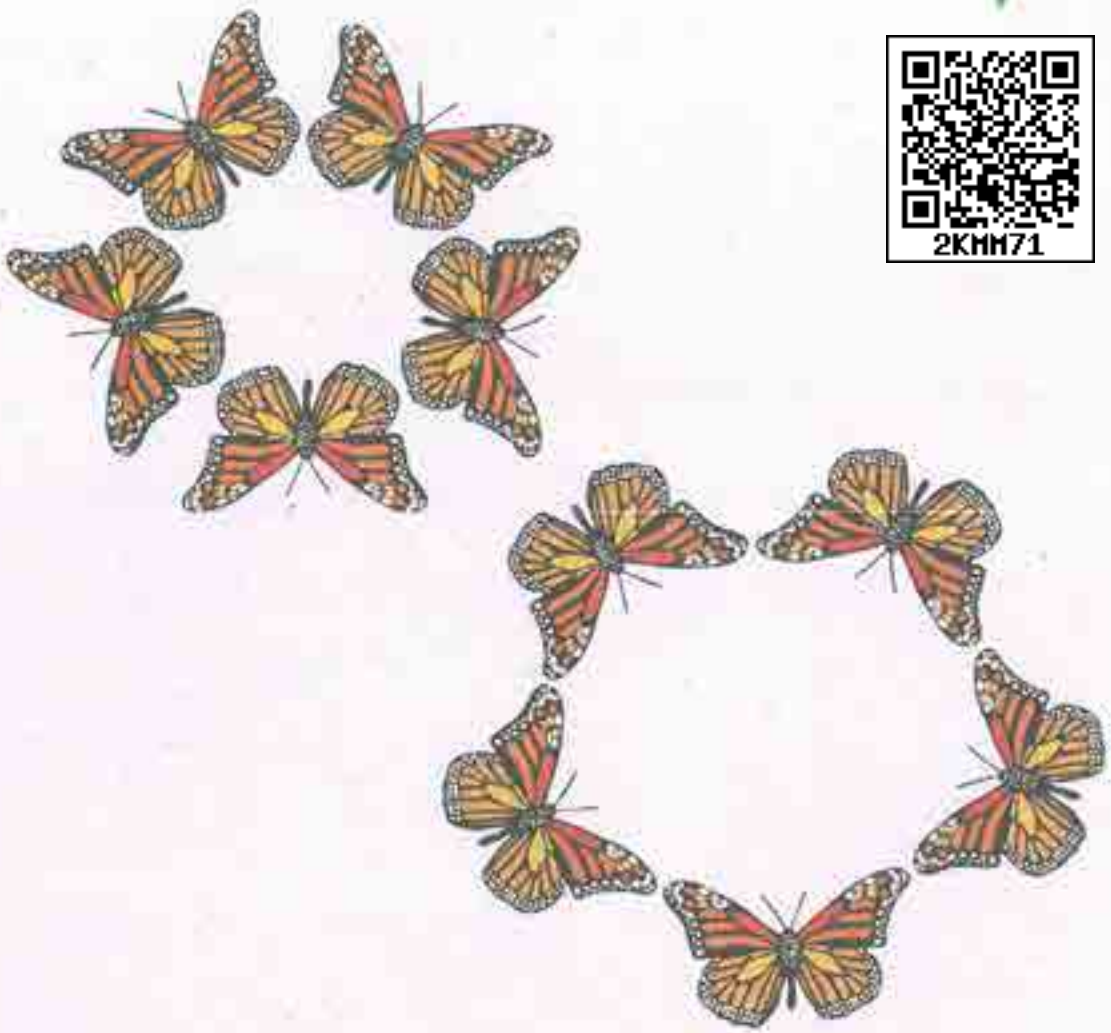
½ litre

(water *suraahi*)

Can We Share?

8

2KMM71

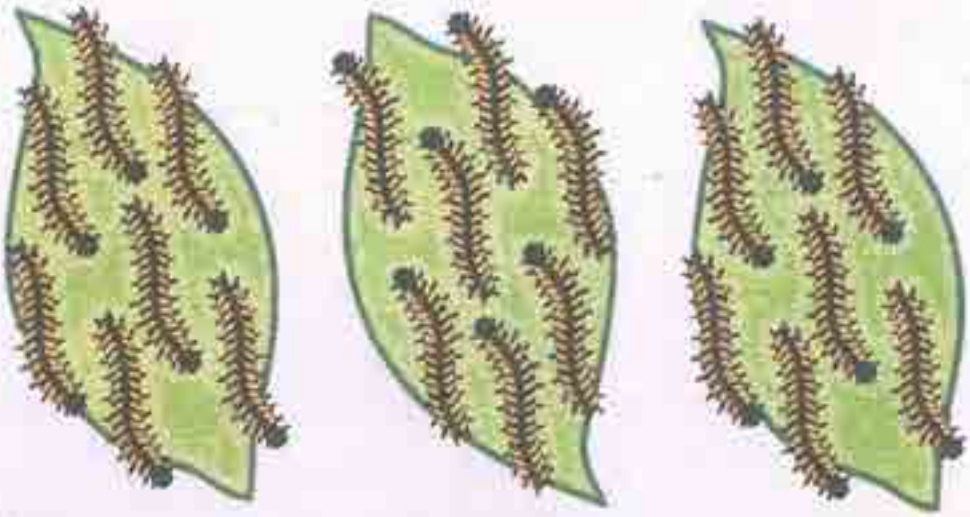


How Many in Each Group?

There are 10 butterflies.

They are in 2 groups.

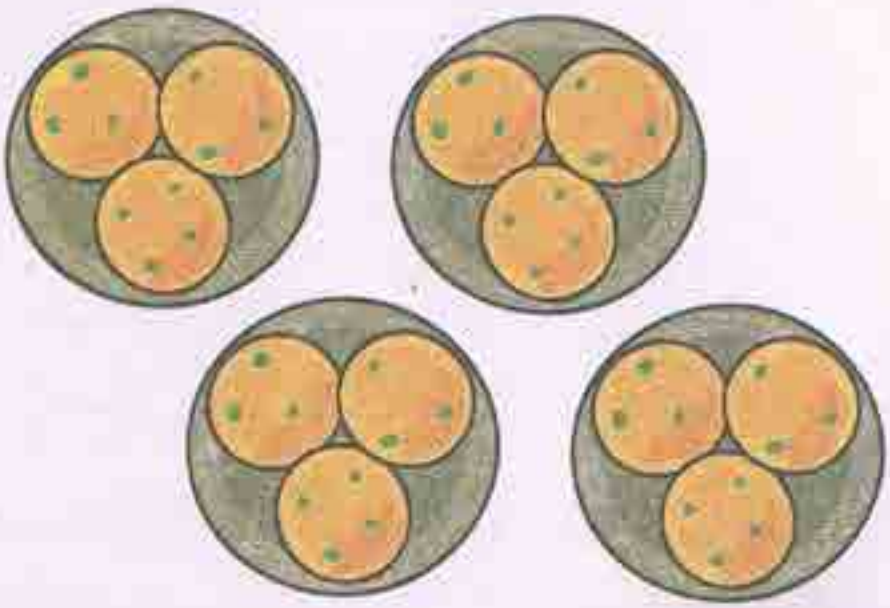
There are 5 butterflies in each group.



There are _____ catterpillars

They are _____ in groups.

There are _____ catterpillars in each group.



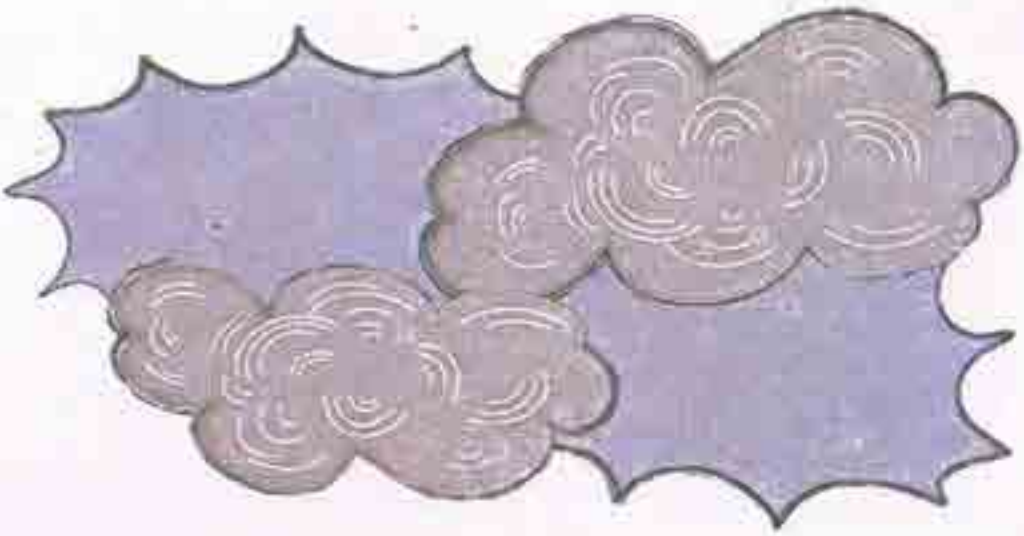
There are _____ laddoos

They are in _____ groups.

There are _____ laddoos in each group

Draw 18 stars.

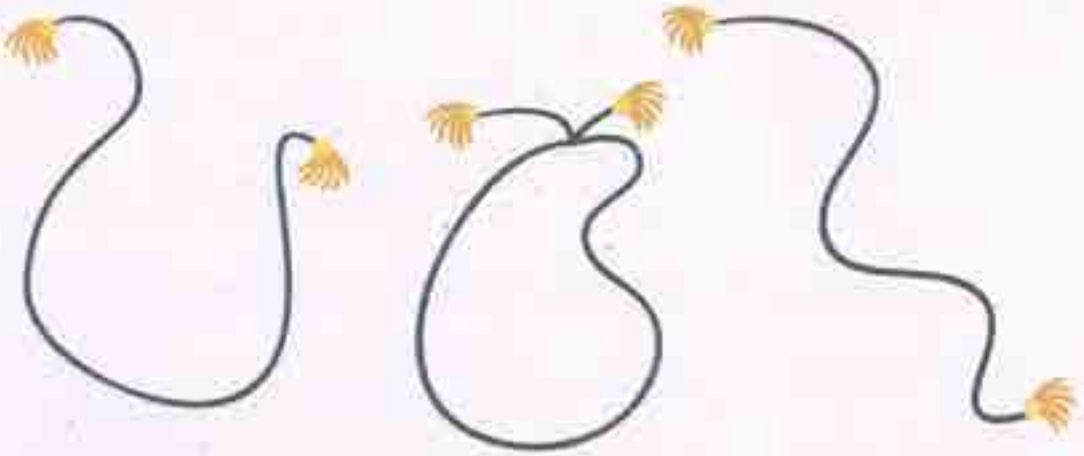
Put them into 2 equal groups.



There are _____ stars in each group.

Draw 18 beads.

Put them into 3 equal groups.



There are _____ beads in each group.

Share the Grains

Mummy bird brings 12 grains.

How to distribute equally?

Mummy bird starts by giving 1 grain to each baby.

Then Mummy bird gives one more grain to each baby.

Each baby has got 2 grains now. How many grains are left? _____

She puts one more grain in each baby's mouth.

All the grains are finished.

12 grains have been **divided** among 4 baby birds.

Each baby has got 3 grains.

$12 \div 4 = 3$

Try These Now.....

Gopu has 3 plates of *jalebis*.

Each plate has a different number of *jalebis*.

Plate A Plate B Plate C

Now draw the *jalebis* on the plates below, so that each plate has the same number of *jalebis*.

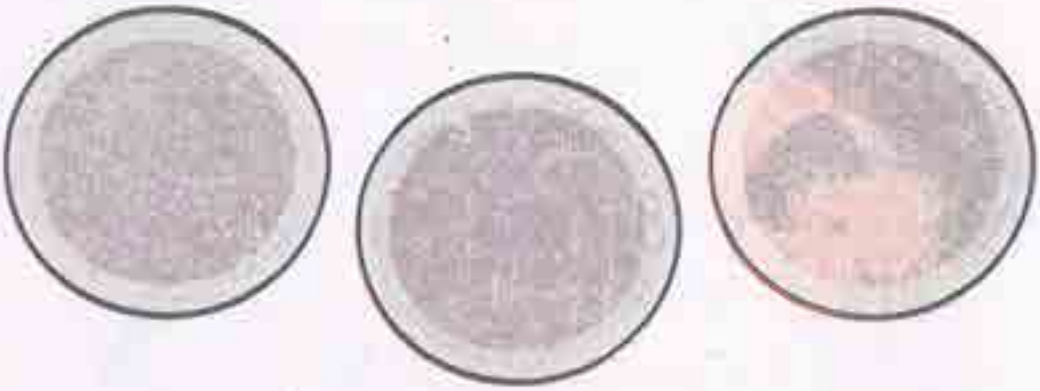


Plate A Plate B Plate C

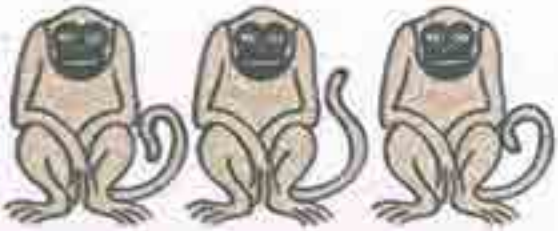
How many *jalebis* are there altogether? _____

How many *jalebis* are there in each plate? _____

Discuss in the class how you found the answer.

Sharing them Equally

Here are six bananas.



Here are three monkeys.

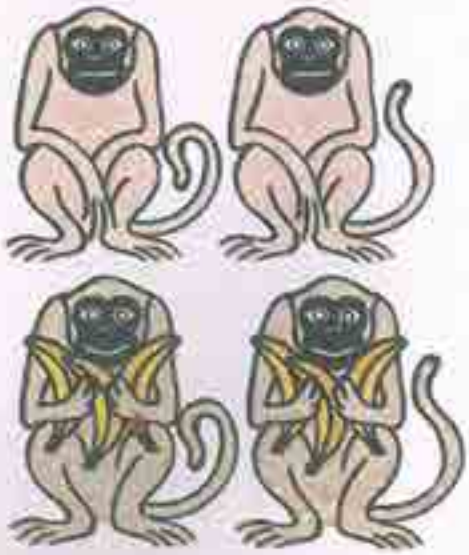
If they share the bananas equally, each monkey will get two bananas.

6 bananas divided into 3 equal parts = 2 bananas each

$6 \div 3 = 2$

$6 \div 2 = 3$

If there are six bananas



and two monkeys,

each monkey will get three bananas.

Six bananas $\div 2 = 3$ bananas each

$6 \div 2 = 3$

Give children the experience of sharing things equally and writing corresponding division statements.

If there are 60 bananas and two monkeys, how many will each monkey get?

_____ bananas.

Five friends found 10 five-rupee coins on the ground.

They shared them equally. Each friend got ten rupees.

$50 \div 5 = 10$

If there are 16 ten-rupee notes and four friends to share, then

$16 \div 4 =$ _____ and $4 \times 10 = 4$

So each friend get_____ rupees

Five friend found Rs 100. If they share it equally, how much will each get?_____

Hari Parshad has 30 metres of rope.

He distributes it equally among his three children.

Each child get_____metres rope.

If there is 36 metres of rope, how much of rope will each child get?_____

And if there os 60 metres of rope, how much will each child get?

How Many Shelves?

I have 20 books. I can keep 5 books in one shelf, so how many shelves do I need in my almirah?

Five books in the first shelf.

15 books are left

5 more books in the second shelf.

10 books are left.

5 more books in the hird shelf.

5 books are left.

5 more books in the fourth shelf.

20 books have filled up 4 shelves of the almirah.

20 books put into equal groups of 5 each take 4 shelves.

On this and the following page, division is done by making equal groups. For instance, here equal groups of 5 books each have been made. This process is different from sharing them equally (by distributing them into 4 shelves).

Now let us try this.

Here are 28 buttons.

A tailor puts 4 buttons on one shirt.

So now there are 7 shirts with buttons.

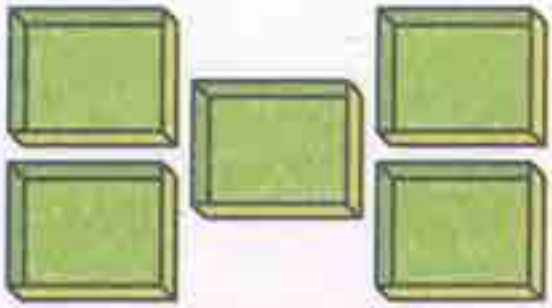
$28 \div 4 = 7$

If there are 28 buttons, and the tailor puts 7 buttons on each shirt, there will be _____ shirts with buttons.

$28 \div 7 =$ _____

Practice Time

1. Minku puts her 15 laddoos equally into 5 boxes.



(i) How many laddoos will there be in each box?

There will be _____ laddoos in each box.

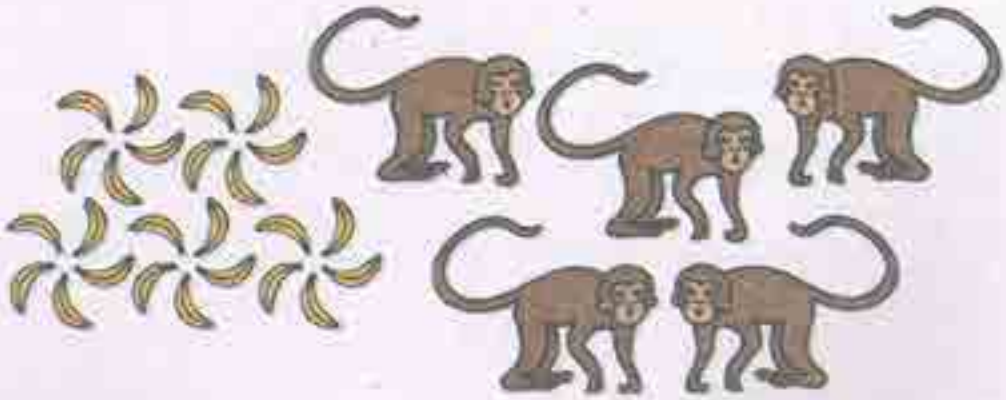
15 ÷ 5 = _____

(ii) If she uses only 3 boxes, how many laddoos will there be in each box?

There will be _____ laddoos in each box.

_____ ÷ 3 = _____

2. Share 25 bananas among 5 monkeys. How many bananas for each monkey?



_____ ÷ 5 = _____

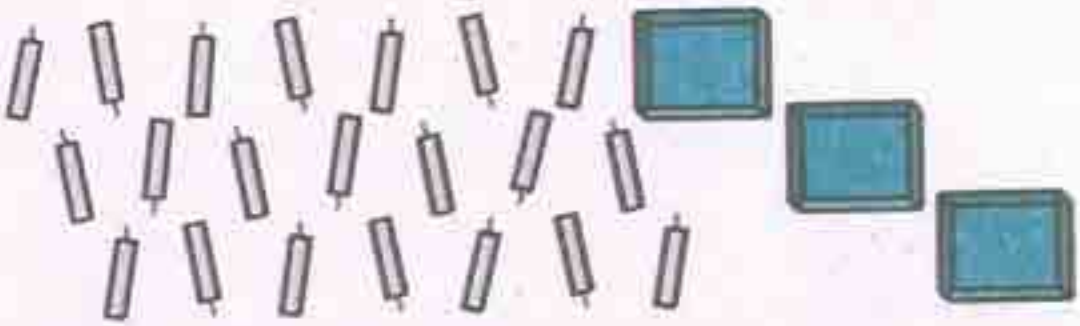
Each monkey has _____ bananas.

3. Share 12 balloons among 3 boys. How many balloons for each boy?

_____ ÷ _____ = _____

Each boy has balloons.

4. There are 21 candles. Put them equally in 3 boxes. How many candles are there in each box?



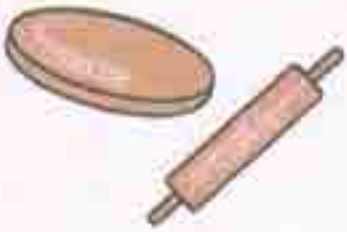
_____ ÷ _____ = _____

5. There are 18 socks.

How many girls can wear these socks?

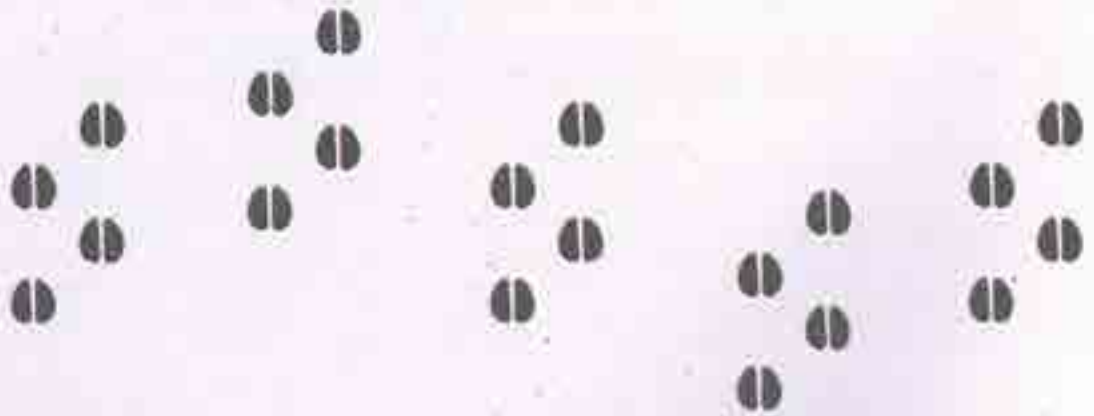
6. Raj has 36 minutes to make rotis. One roti takes 3 minutes. How many rotis can he make in this time?

He can make _____ rotis.



7. These are 24 footmarks of goats.

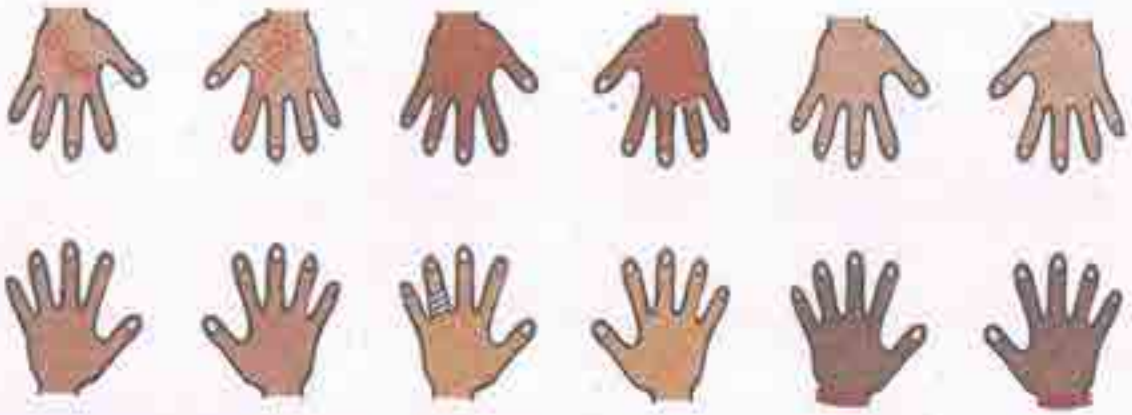
So how many goats were there?



8. Some girls are playing a game with both their hands.

The girls who are playing have 60 fingers altogether.

How many girls are playing this game?



9. Lakshmi has 27 kg potatoes to sell.

Three men came and bought equal amounts of potatoes.

Each man bought_____ kg of potatoes.

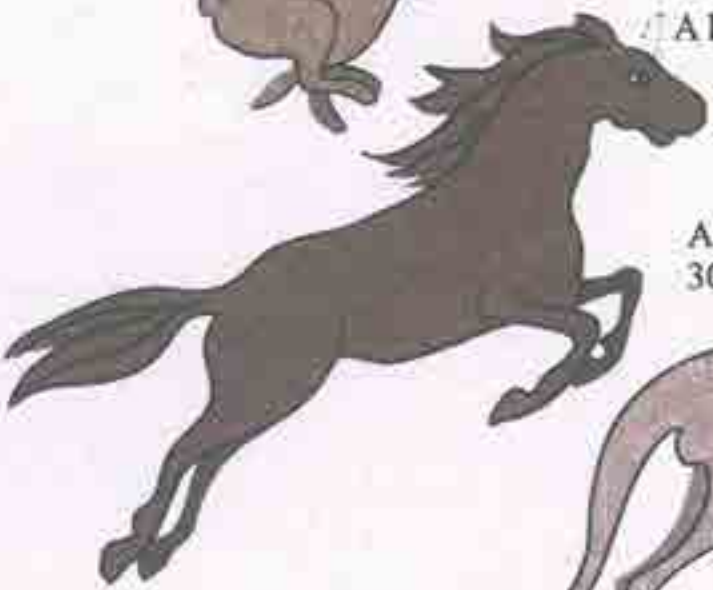
Jumpy Animals

A frog jumps 2 steps at a time.

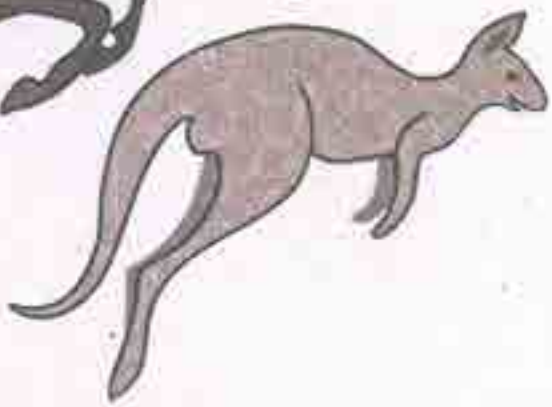
A squirrel jumps 3 steps.

A rabbit jumps 5 steps.

A horse jumps 15 steps.



A kangaroo jumps 30 steps.



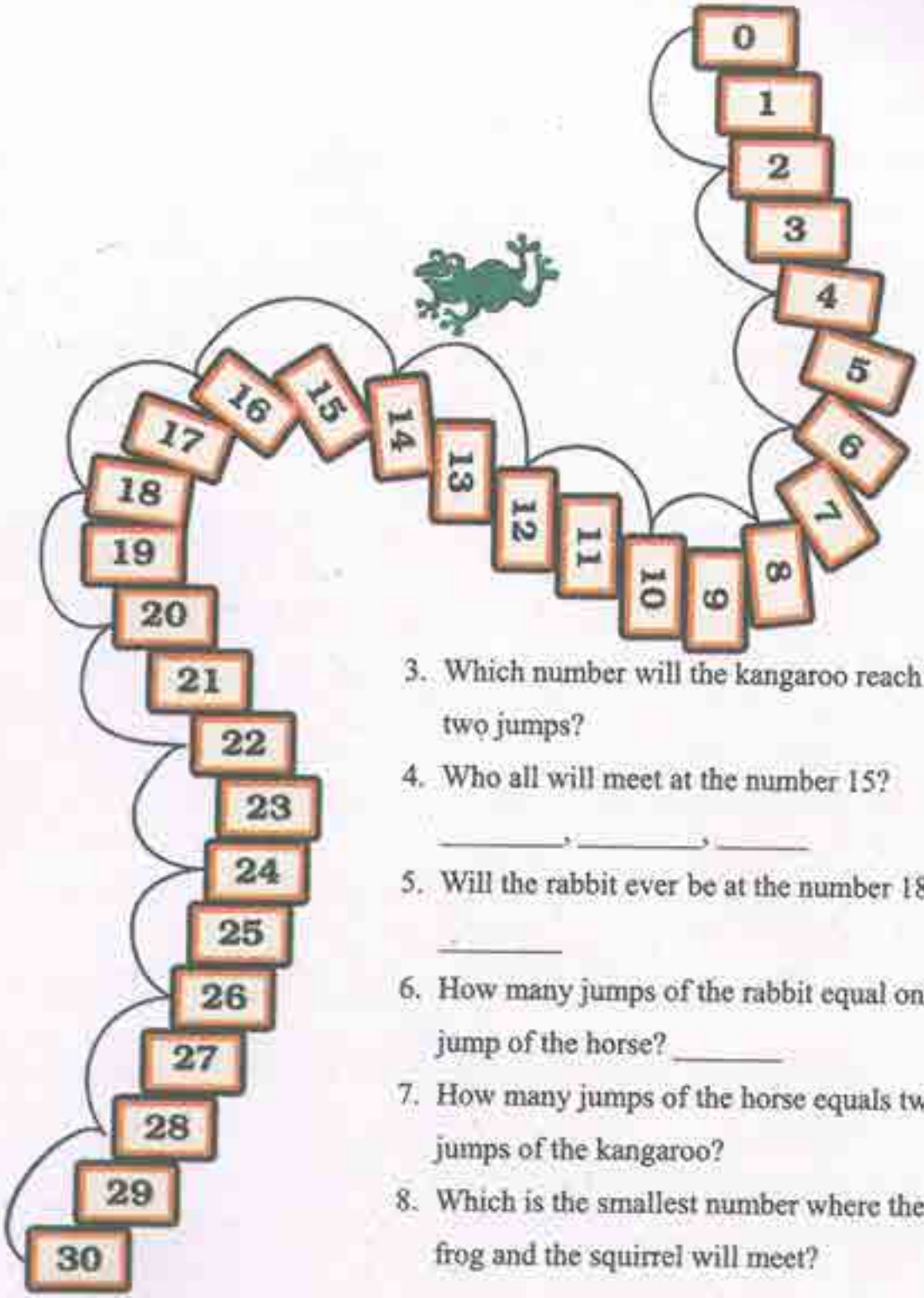
Use the path on the next page to find out:

1. In how many jumps will the frog reach 30?

   $30 \div 2 =$ _____

2. In how many jumps will the squirrel reach 27?

   $27 \div 3 =$ _____



3. Which number will the kangaroo reach in two jumps?
4. Who all will meet at the number 15?

   _____, _____, _____
5. Will the rabbit ever be at the number 18?

   _____
6. How many jumps of the rabbit equal one jump of the horse? _____
7. How many jumps of the horse equals two jumps of the kangaroo?
8. Which is the smallest number where the frog and the squirrel will meet?

How Quick Are You?

Divide into groups of 10 using 10 times table.

18 ÷ 2 =	9	Hint: 2 × 9 = 18
18 ÷ 9 =	2	
16 ÷ 2 =		
20 ÷ 2 =		
÷ 2 =	7	
÷ 2 =	10	
8 ÷ =	4	
÷ 2 =	5	

Divide into groups of 5 using 5 times table.

10 ÷ 5 =		Hint: 5 × 2 = ?
20 ÷ =	4	
15 ÷ 5 =		
40 ÷ =	8	
20 ÷ 5 =		
÷ 5 =	6	
25 ÷ 5 =		
÷ 5 =	3	
35 ÷ 5 =		
÷ 5 =	2	

Divide into groups of 10 using 10 times table.

20 ÷ 10 =	
30 ÷ 10 =	
40 ÷ 10 =	
50 ÷ 10 =	
40 ÷ =	4
÷ 10 =	8
÷ 10 =	5
÷ 10 =	3
÷ 10 =	2
60 ÷ =	4

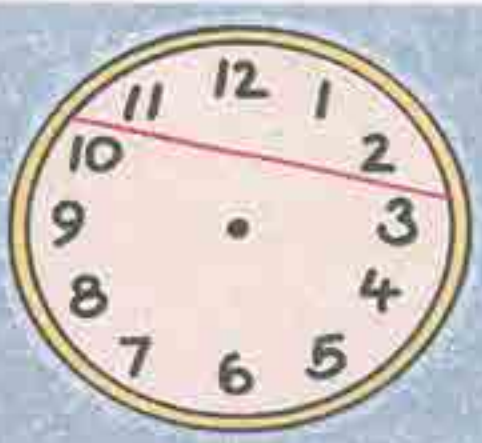
Extension activities to explore the use of multiplication facts for division through mental computation

Try these.

4 + ☐ = 2	9 + 3 = ☐
14 + 7 = ☐	18 + 9 = ☐
6 + 3 = ☐	☐ + 2 = 5
☐ + 2 = 7	20 + 5 = ☐
☐ + 2 = 3	12 + 4 = ☐
15 + 3 = ☐	20 + 4 = ☐
8 + 4 = ☐	12 + ☐ = 2
15 + 5 = ☐	☐
8 + ☐ = 4	☐
☐ + 2 = 8	☐

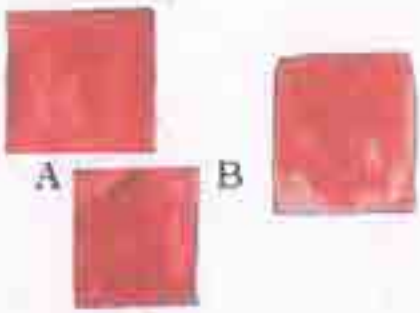
Puzzle

Divide the clock face into three parts so that the sum of the numbers in each part is the same.



Rupees and Paise

- Take a sheet of paper and make a fold at the centre.
- Fold the two corners 'A' and 'B' to meet at the dotted line.
- Now the sheet will look like this



- Fold the top part of the sheet backwards so that the back of the sheet looks like this and the front looks like this

- Place the front side of the sheet up and fold the edges CD and EF to meet at the dotted line.

- Now it will look like this:
- Fold down the top along the dotted line so that the figure now looks like this:

- Fold the back flap down and the money purse is ready!

Money for Our Purse

- Collect different coins.

- Keep a coin on a flat table. Place a thin paper on it.

- With one hand hold the paper tight. Rub the tip of the pencil over the paper softly to trace the coin.
- Slowly the face of the coin will appear.
- Cut out the traced coins and keep them in your purse.

Now make notes by cutting paper and writing the value of the note on each.

Money Game

* Use notes and coins to show the following amounts of money (you can also keep some money in the purse you had made).

– Twenty-six rupees

– 4 rupees 75 paise

– 78 rupees

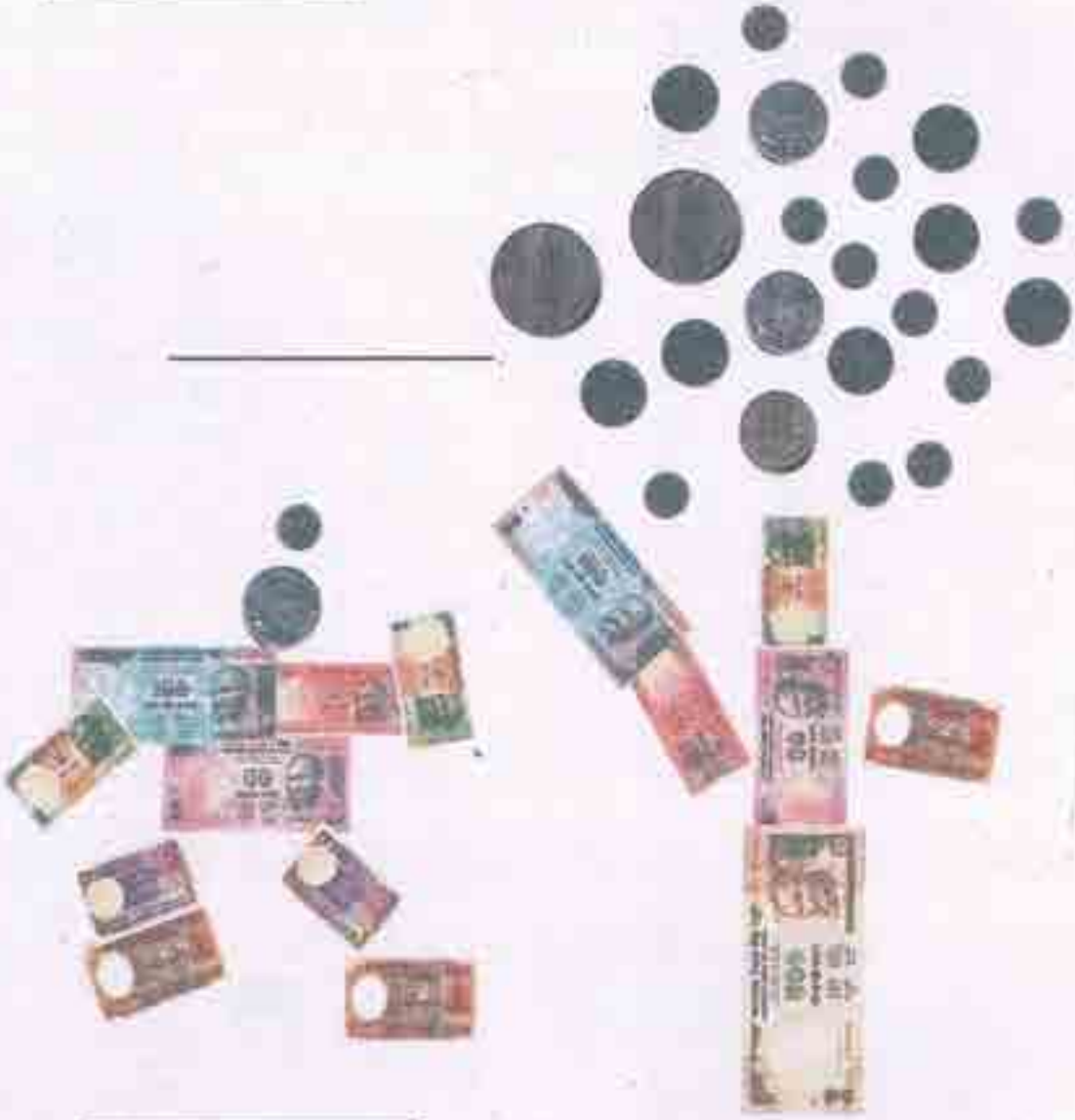
– 130 rupees

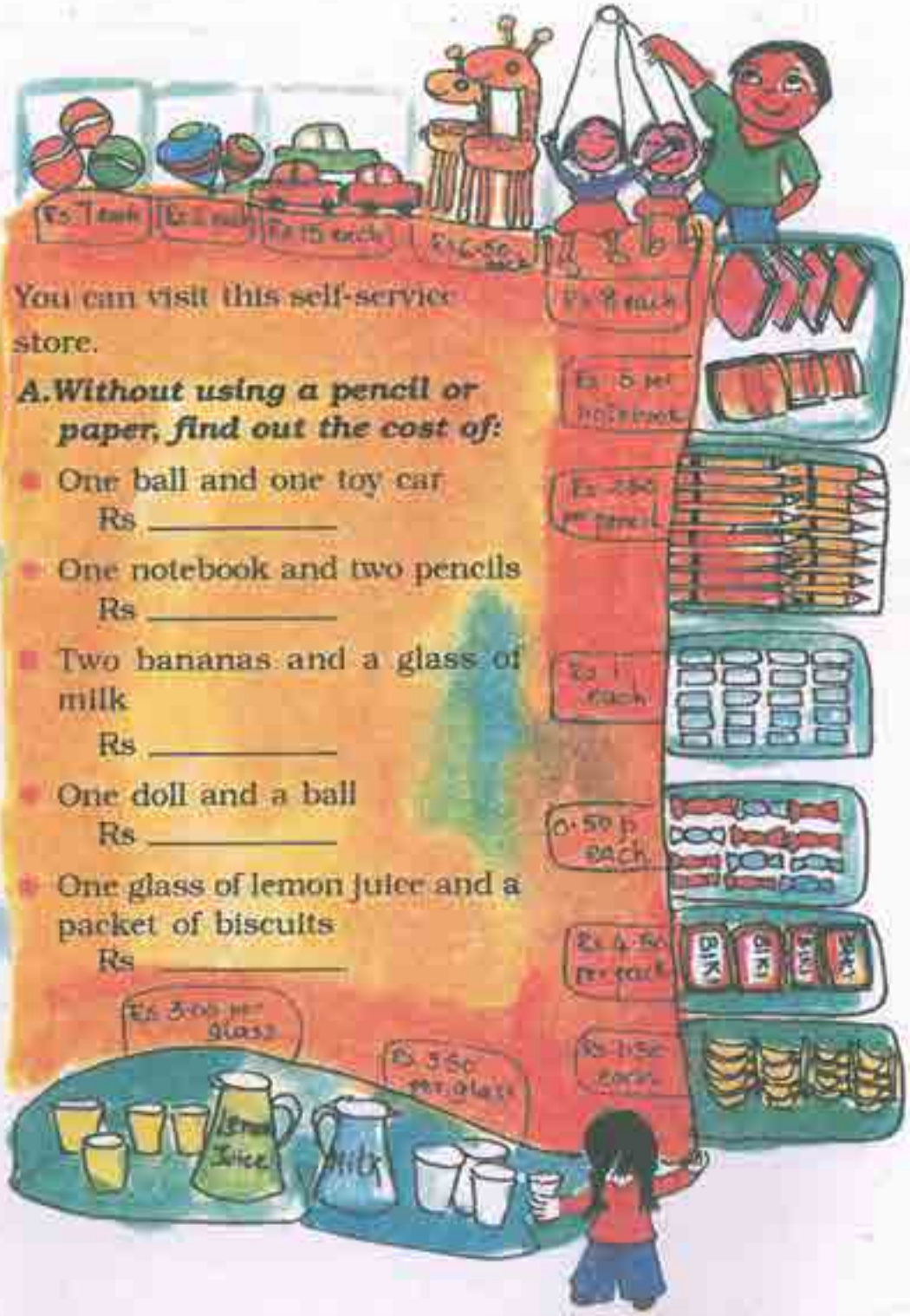
– 8 rupees 75 paise

– 53 rupees

Write the amounts of money shown by the notes and coins

One hundred one rupees





You can visit this self-service store.

A. Without using a pencil or paper, find out the cost of:

- One ball and one toy car
  Rs _____
- One notebook and two pencils
  Rs _____
- Two bananas and a glass of milk
  Rs _____
- One doll and a ball
  Rs _____
- One glass of lemon juice and a packet of biscuits
  Rs _____

B. Find out the total cost of:

- One toy giraffe, one copy and a glass of lemon juice Rs._____
- One glass of milk, one packet of biscuits and a banana Rs._____
- One notebook, two pencils and two erasers
- Two tops, three toffees and two bananas

C. What can you buy if you have a twenty-rupee note?

1 toy car, 1 lemon juice, 1 banana

- _____, _____, _____
- _____, _____, _____
- _____, _____, _____
- _____, _____, _____

Cash Memo

Self Service Store

Item	Rate per Item	Rs	Paise
	Total		

D. You need to make a cash memo for the things you bought.

Before adding, first guess how much money will be needed.

Then find the total and check your guess.

Monu prepared the following cash memos:

Check the cash memos and correct them if you find a mistake.

Cash Memo

Self Service Store

Item	Rate per Item	Rs	Paise
1 Ball	7	7	00
3 Pencils	2.50	7	50
5 Toffees		2	50
	Total	17	00

Cash Memo

Self Service Store

Item	Rate per Item	Rs	Paise
1 Toy car		15	00
3 Glass milk	3.50	10	00
4 Notebooks	5	20	50
	Total	45	00

Cash Memo

Self Service Store

Item	Rate per Item	Rs	Paise
1 Toy car	8.50	8	50
3 Pencils	2.50	7	50
7 Toffees	50	3	50
1 Biscuit	4.50	4	50
	Total	23	50

- Add the following:

a) Rs 12.50 + Rs 13.00 = _____

b) Rs 55.50 + Rs 14.00 = _____

c) Rs 30.00 + Rs 31.50 = _____

- Subtract the following:

a) Rs 25.50 − Rs 11.50 = _____

b) Rs 103.50 − Rs 62.00 = _____

c) Rs 19.50 − Rs 7.00 = _____

E. You have 30 rupees with you. Find out how much money will be left after buying the following items:

- One ball, one doll and one toy giraffe
- Total cost _____. Money left _____
- Two bananas, one pack of biscuits and two glasses of lemon juice.
  Total cost _____. Money left _____.

- Three notebooks, two pencils and two erasers.
  Total cost _____ . Money left _____ .

Practice Time

A. Three friends wanted to buy a cricket bat and ball.
Bina had Rs 48.50, Raman had Rs 55.50 and Venu had Rs 38.00. How much money did they have in all?

B. Hari booked a railway ticket for Rs 62.50. He gave a 100-rupee note. How much money will he get back with the ticket?

C. Gita and her friends went shopping. She bought things for Rs 58, Rs 37 and Rs 22. Gita had a hundred-rupee note. How much money should she borrow from her friends to pay the bill?

Mumbai News
Children Freed from Factory

10 young children working in a bangle factory were set free today. A news reporter and the police found them in a sad condition. The factory made the children work very hard. It paid them only Rs 20 a day.

The children are happy to go back to their homes in their village. They will go to a special school so that they can learn to study like other children their age. By making children work, the factory tries to save money. The police will now take action.

Let us see how much money the factory tries to save.

Money 1 older worker should get = Rs 85 a day

Money 1 child is paid = Rs 20 a day

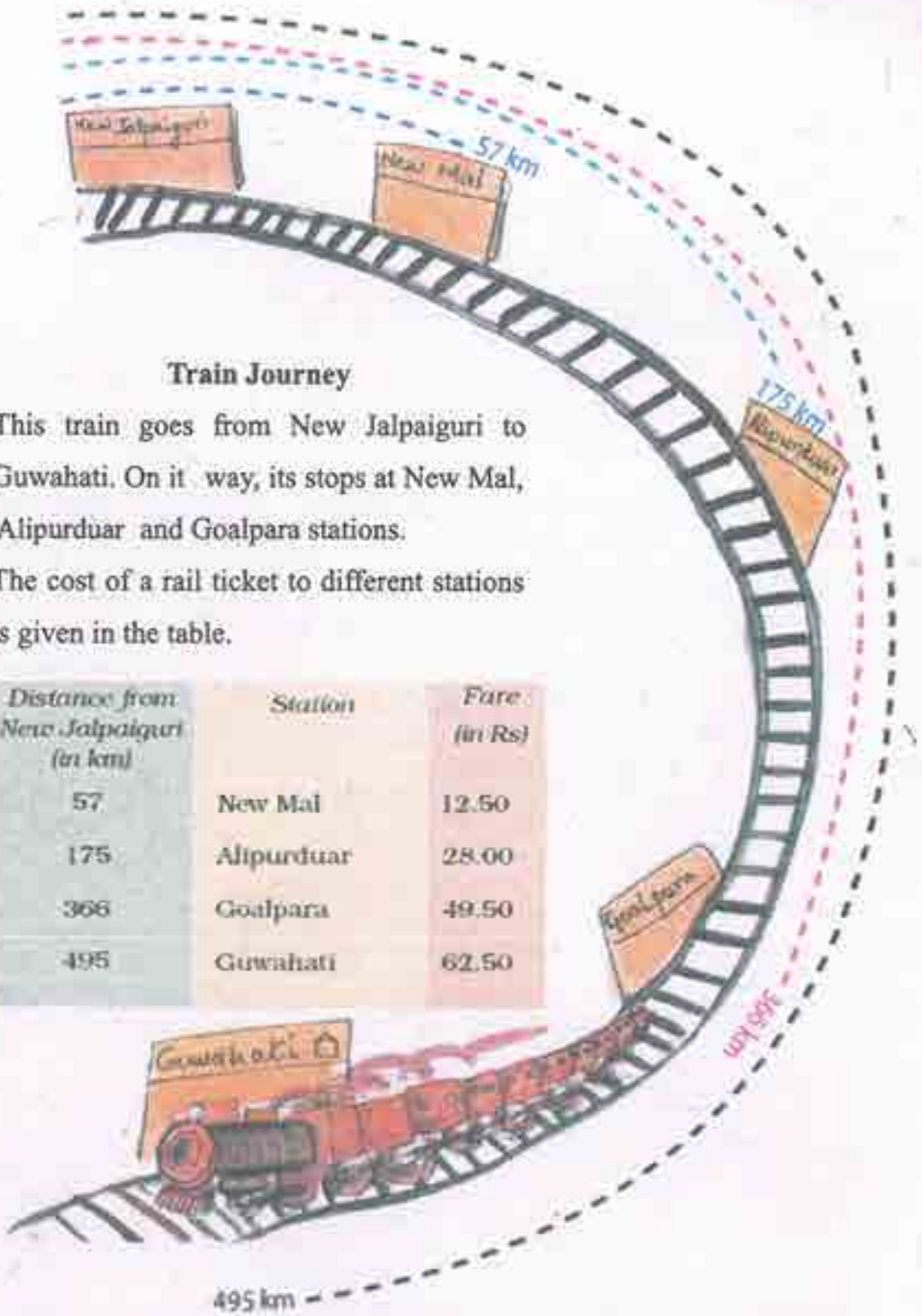
On 1 person the factory saves Rs 85 – _____ = Rs 65 a day

On 10 persons the factory saves

Rs 65 × 10 = Rs _____ a day

Find Out

In your area are there shops or factories where young children are made to work?



Train Journey

This train goes from New Jalpaiguri to Guwahati. On it way, its stops at New Mal, Alipurduar and Goalpara stations.

The cost of a rail ticket to different stations is given in the table.

Distance from New Jalpaiguri (in km)	*Station*	*Fare (in Rs)*
57	New Mal	12.50
175	Alipurduar	28.00
366	Goalpara	49.50
495	Guwahati	62.50

Find the distance:

a) From New Mal to Guwahati _____

b) Between New Mal and Goalpara _____

c) From Alipurduar to Guwahati _____

d) Between New Mal and Alipurduar _____

e) From Goalpara to Guwahati _____

Find the cost of tickets:

a) Bhupen is going from New Jalpaiguri to Alipurduar.

What is the cost of his ticket?

b) Indira has to go from New Jalpaiguri to Goalpara.

How much does she pay for the ticket?

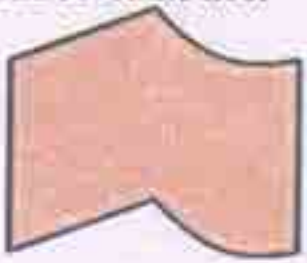
c) Debu, Shoma and Gobind are going from New Jalpaiguri to New Mal.

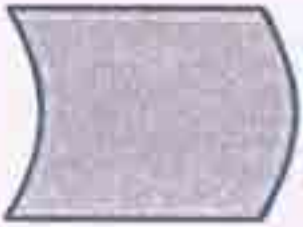
What amount will they pay for three tickets?

They give a Rs 50 note for the tickets. How much money will they get back?

A Page to Cut Out

Cut these tiles and paste on a card. Make as many copies as you want and cover the floor



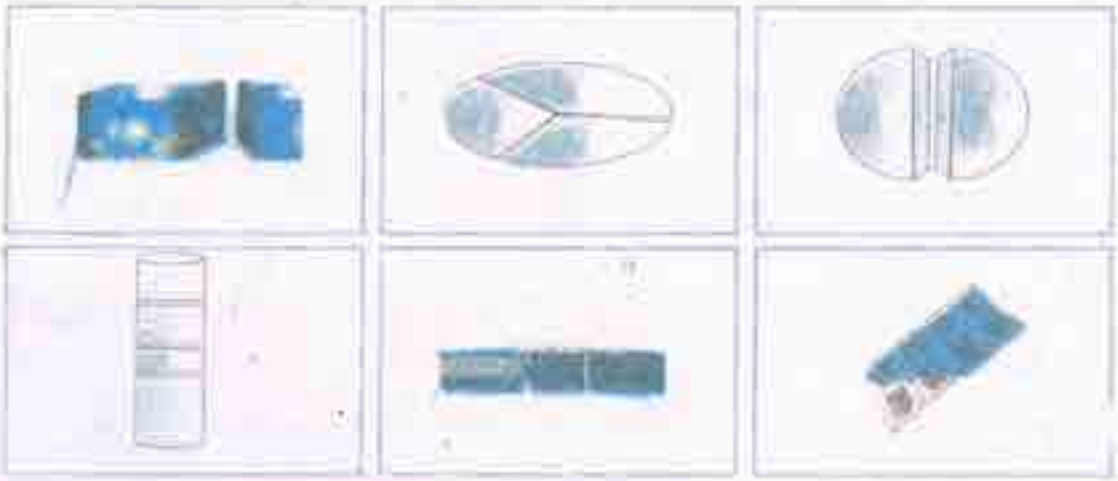


You can cut these out and use as play money

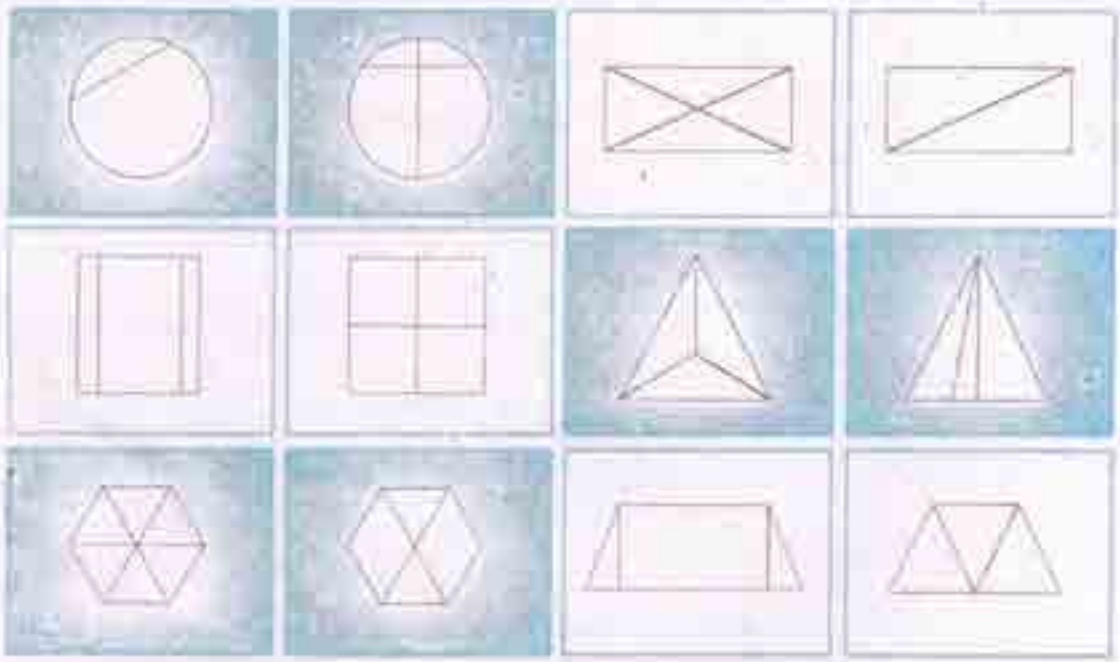
Fractional Numbers

Parts of a Whole

Here, each object is cut into a number of parts. Some in equal parts and some in unequal parts.

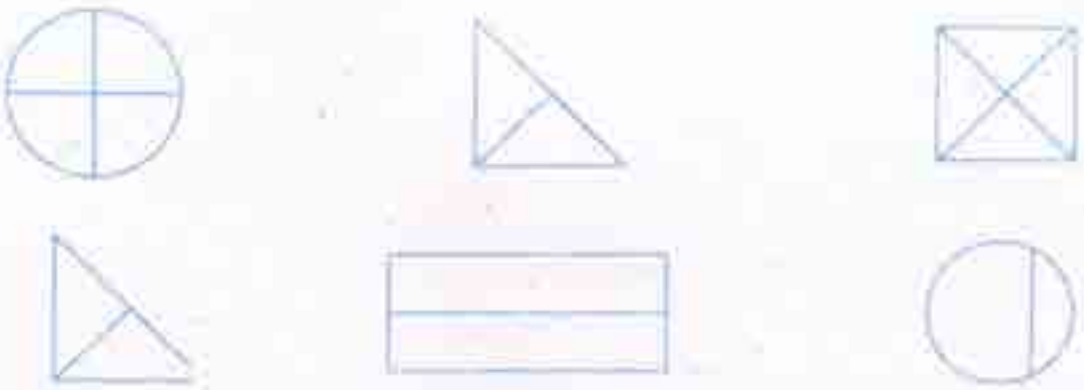


Here, each shape or figure is cut into a number of parts. Some in equal parts and some in unequal parts.

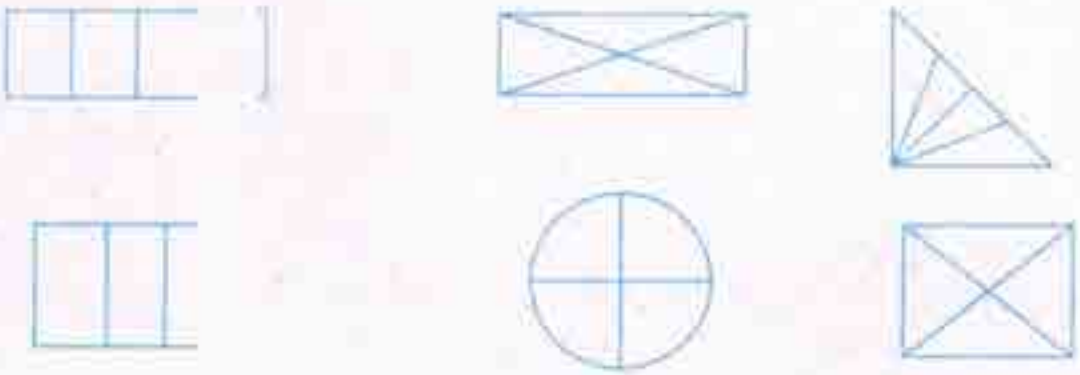


Activity I

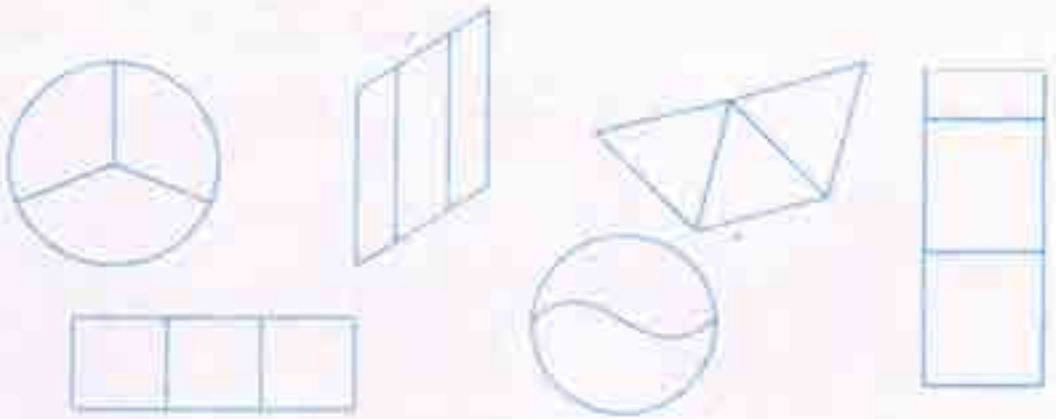
1. Mark a tick (✓) on the figures are divided into two equal parts.



2. Mark a tick (✓)on the figures which are divided into equal parts.



3. Mark a tick (✓) on the figures which are divided into three equal Parts.



One half, one third and one fourth of a whole

When whole is cut or divided into two equal parts, each part is called one half of the whole.

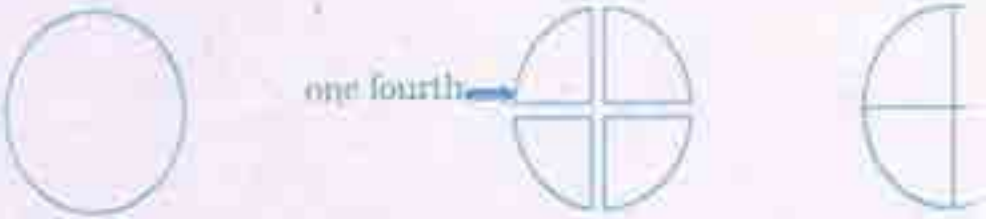
A whole

whole

One half is written as ½

Two halves make

When a whole is cut or divided into four equal parts, each part is called one fourth of the whole.



A whole

whole

Four fourths make

One fourth is Written as $\frac{1}{4}$. One Fourth is called a quarter

When a whole is cut or divided into three equal parts, each part is called one third of the whole.

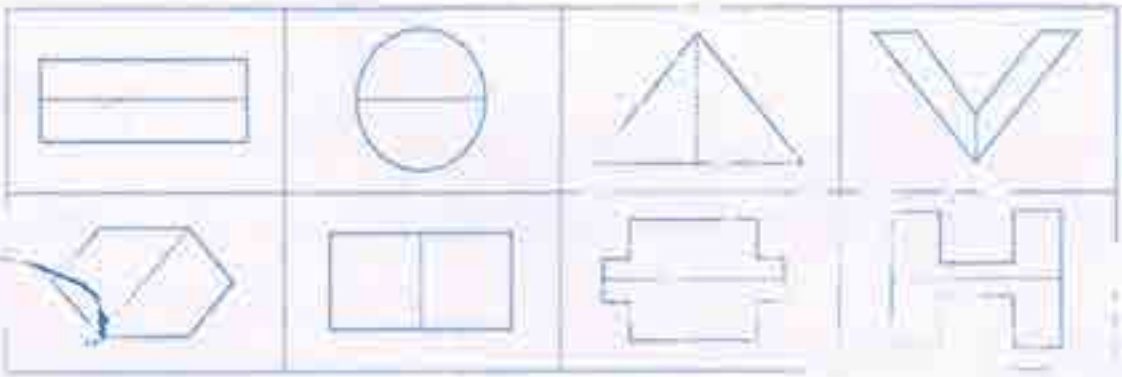
A whole

One third is written as $\frac{1}{3}$

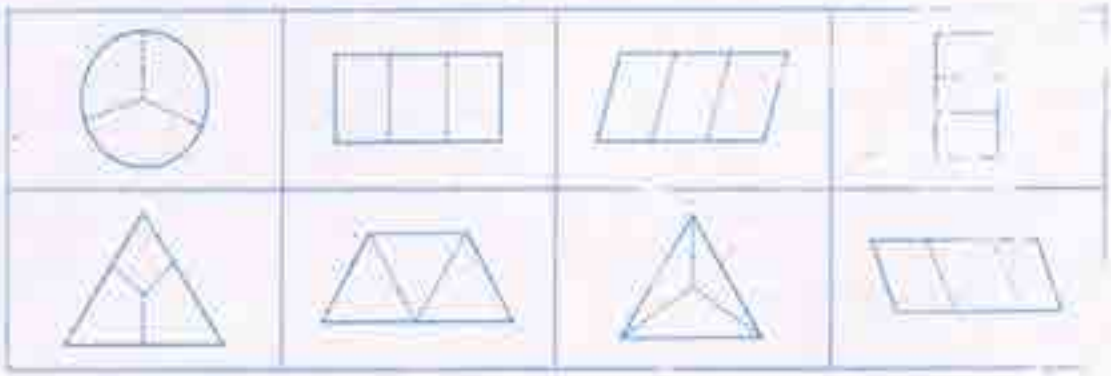
Three thirds make a whole

Activity II

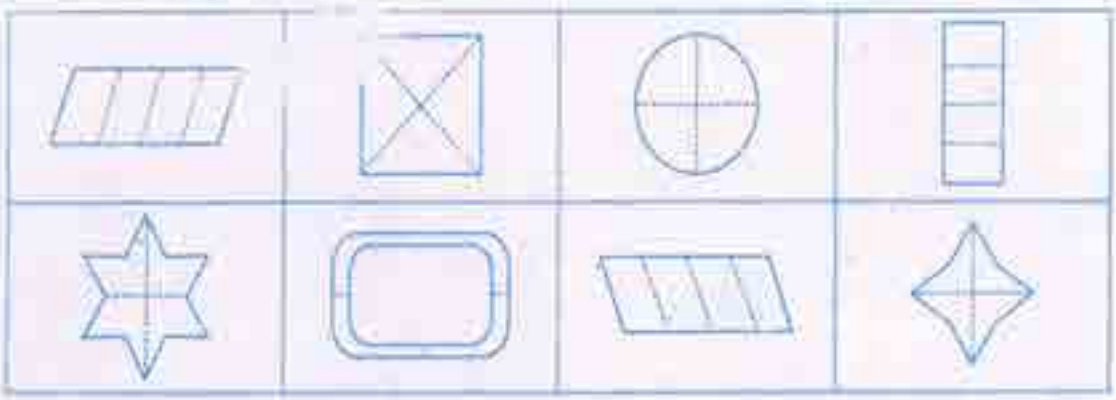
1. Each shape below is a whole cut into two equal parts by a dotted line. Shade half of the shapes.



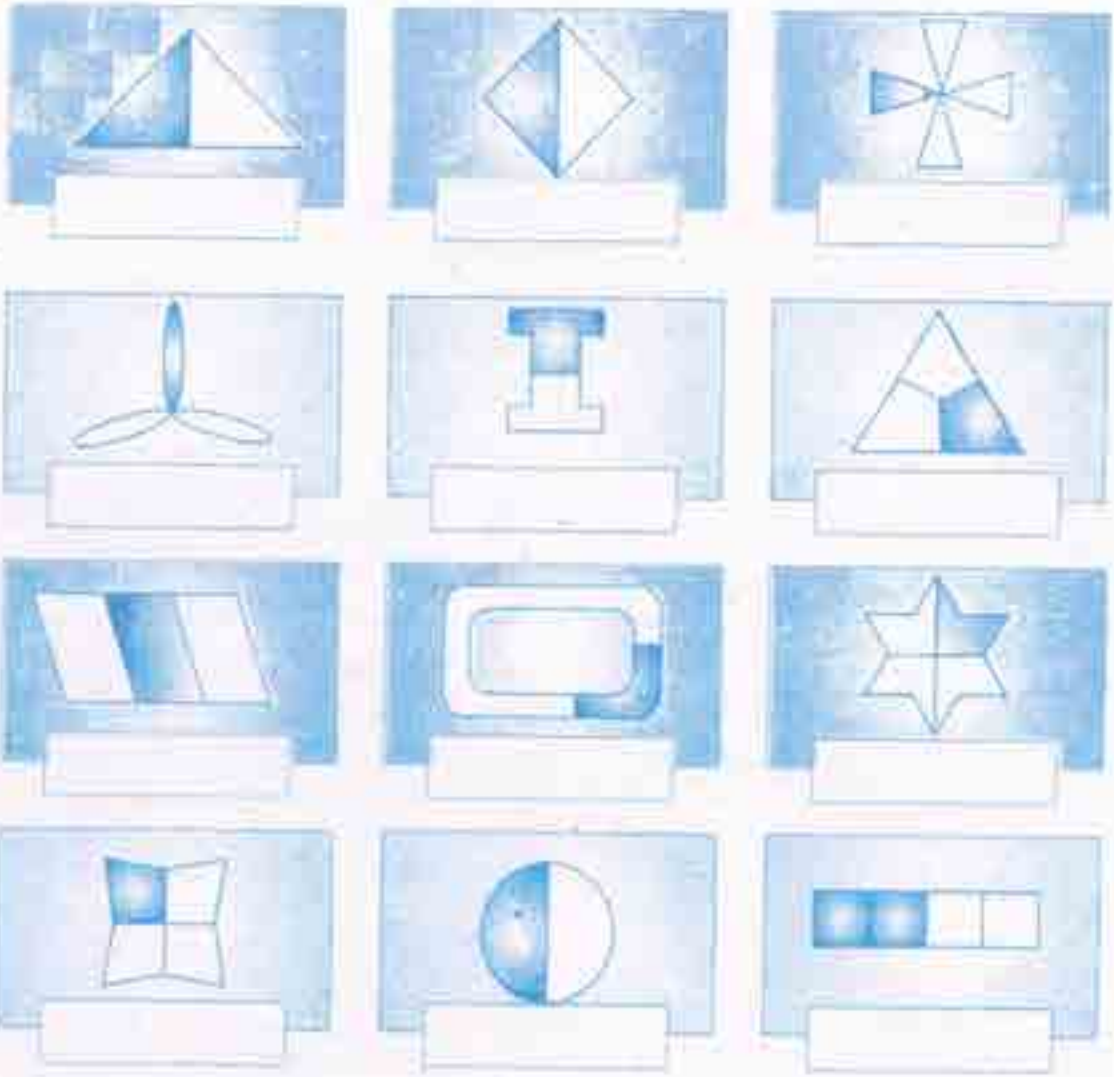
2. Each Shape shown below is a whole cut into three equal parts by dotted lines. Shade one third of the shapes.



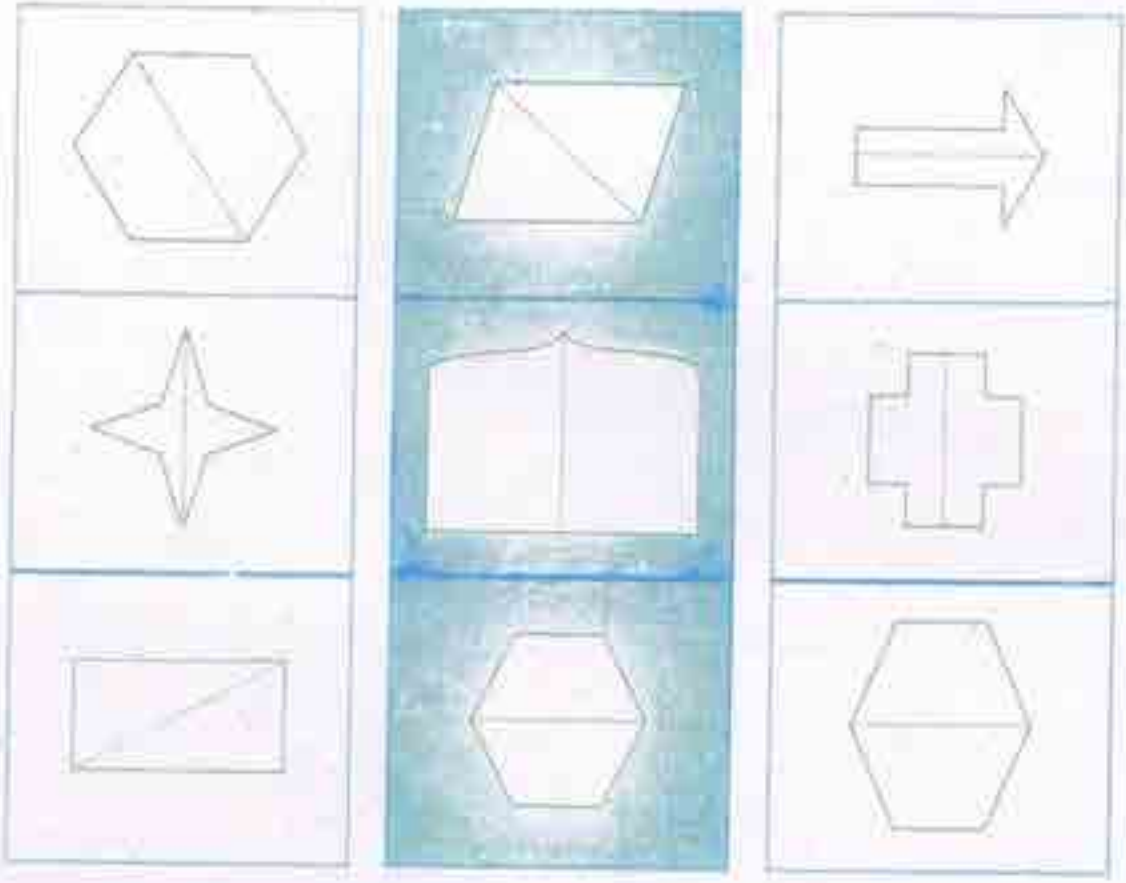
3. Each shape shown below is a whole cut into four equal parts by dotted lines. Shade one fourth of the shapes.



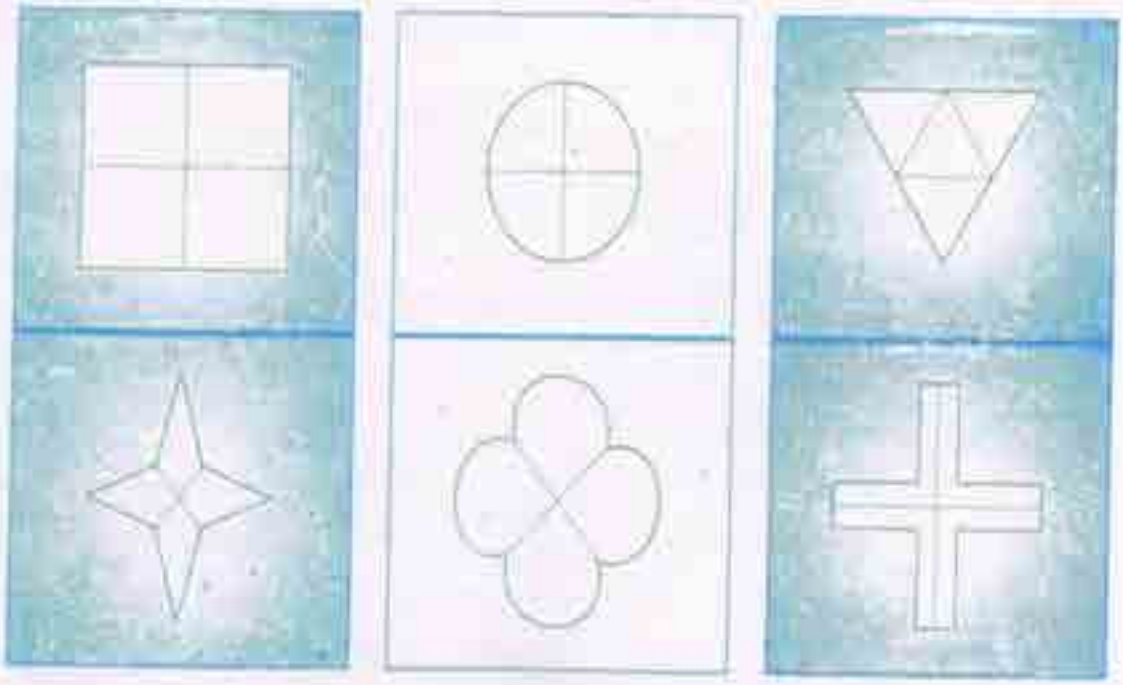
4. Write below each figure, one half, one third or one fourth for the shaded part of the figure :



5. Colour one half of each shape:

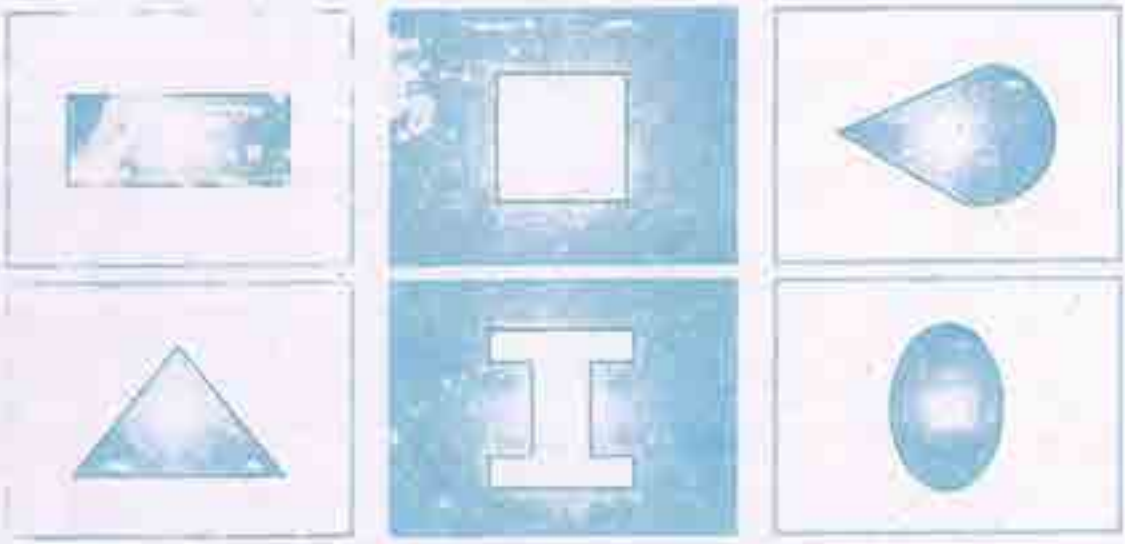


6. Colour one fourth of each shape:

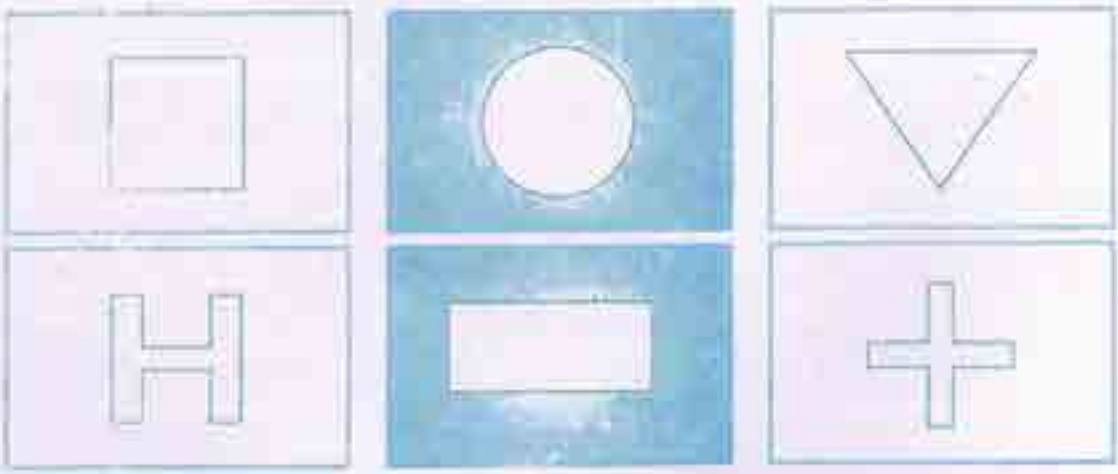


7. Colour one third of each shape:

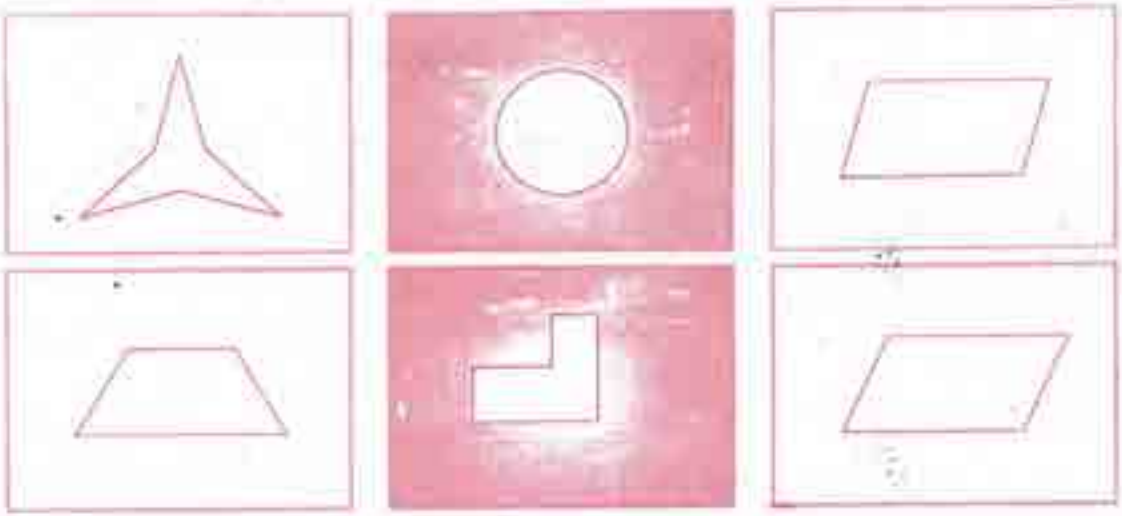
8. Draw a dotted line to cut each shape given below into two equal parts. Colour the two parts, using different colours.



9. Draw lines to cut each shapes given below into four equal parts. Colour the four parts, using different colours.



10. Draw lines to cut each shape given below into three equal parts. Colour the three parts, using different colours.



Parts of Collection

Here is a collection of 12 stars

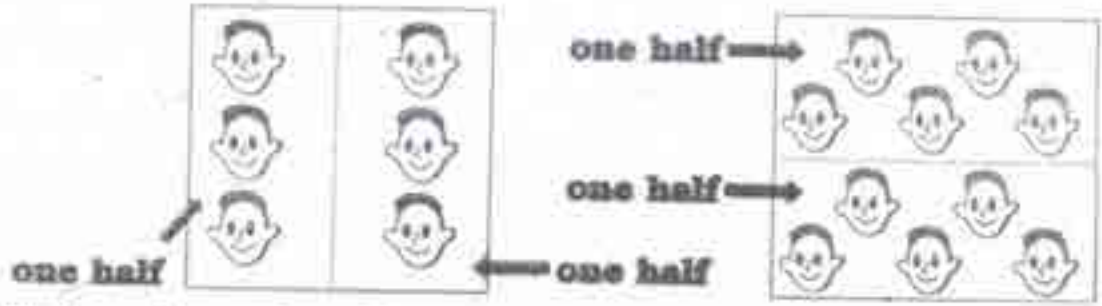
It can be divided in 3 equal parts

It can be divided into 2 equal parts

It can be divided into 4 equal parts

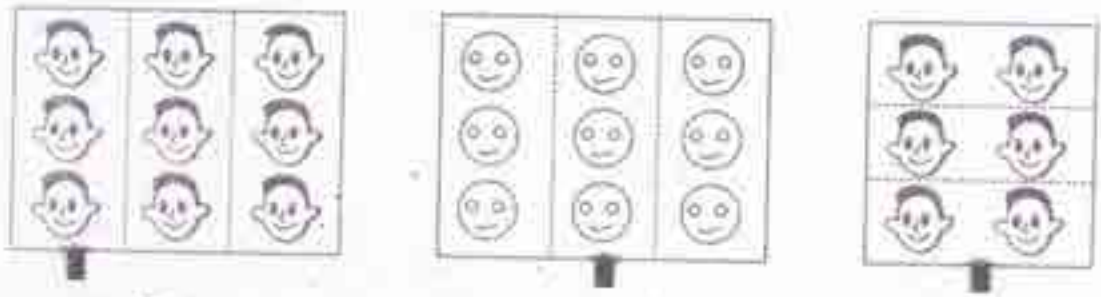
10. One half, one third, and one fourth of a collection

When a collection is divided into 2 equal parts, each part is one half $\left(\frac{1}{2}\right)$ of the collection



To know the number of objects (or shapes) in one half of a collection, we divide the number of objects (or shapes) in the collection by 2.

When a collection is divided into 3equal parts, each part is one third $\left(\frac{1}{3}\right)$of the collection.



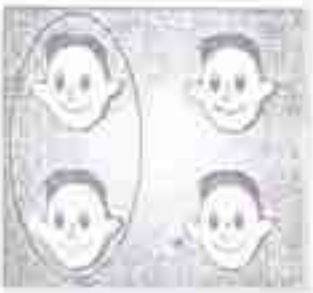
To know the number of objects (or shapes) in one third of a collection, we divide the numbers of objects (or shapes) in the collection by 3.

When a collection is divided into 4 equal parts, each part is one fourth or a quarter $\left(\frac{1}{4}\right)$of the collection.

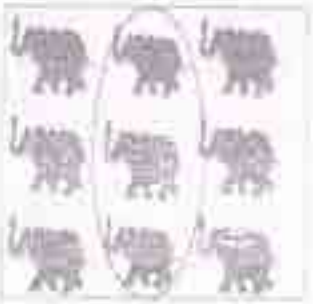
To know the number of objects (or shapes) in one fourth (or quarter) of a collection, we divide the number of objects (or shapes) in the collection by 4.

Activity III

1. Encircle one half of each collection. The first one is done for you.



2. Encircle one third of each collection. The first one is done for you.



3. Encircle one fourth (or a quarter of each collection. The first one is done for you.

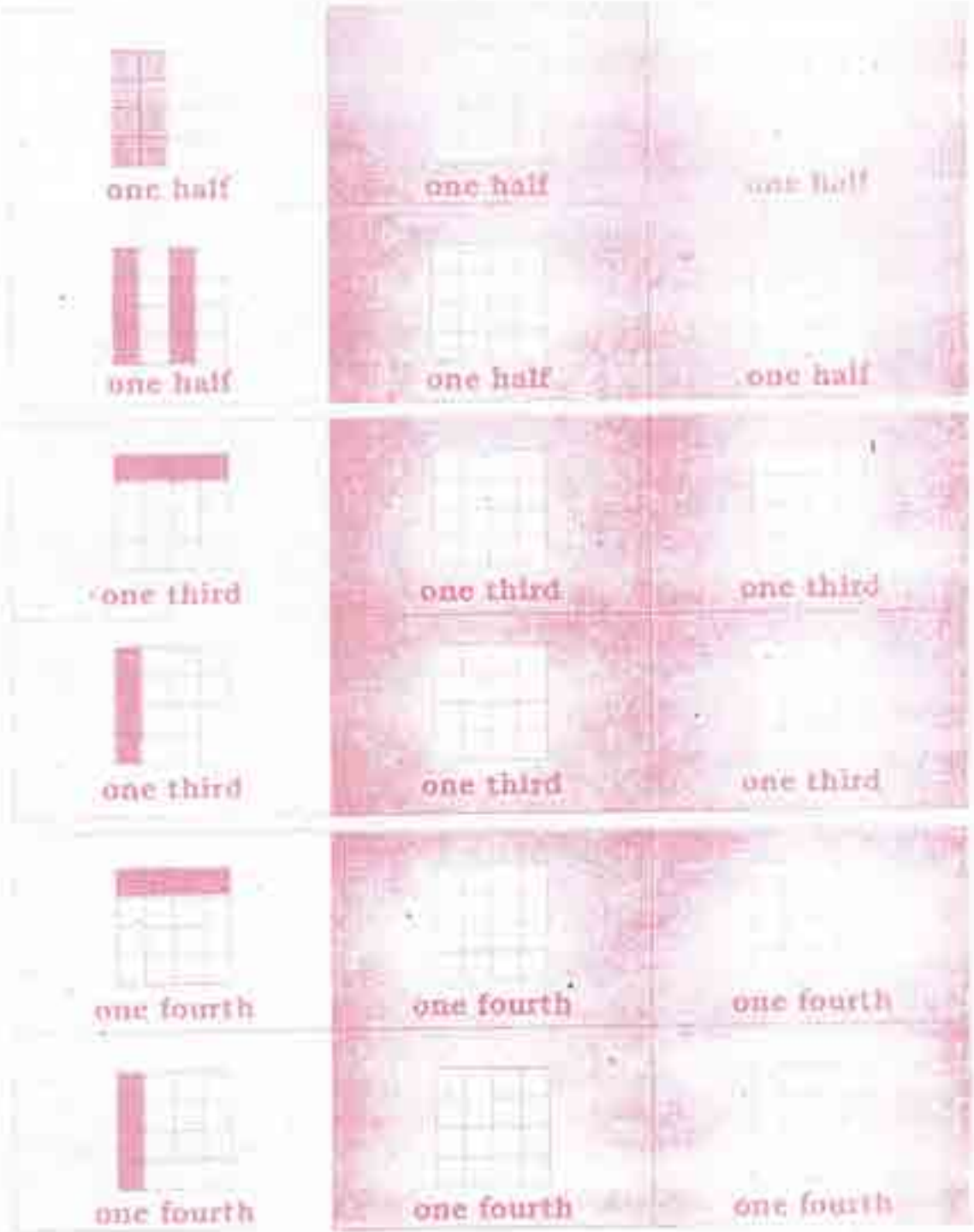


4. Shape or colour one half of each collection. The first is done for you.

5. Shade or colour one third of each collection. The first one is done for you.

6. Shade or colour one fourth for the collection. The first one is done for you.

7. Look at the shading pattern of the figures given in the first column. Shade the figures in the second and third columns in a similar way.



8. Answer the following questions:

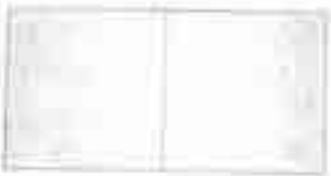
1. If a collection has 10 objects, how many objects are there in one half of the collection?
2. If a collection has 8 objects, how many objects are there in one fourth of the collection?
3. If a collection has 15 objects, how many objects are there in one third of the collection?
4. If a collection has 24 objects, how many objects are there in one third of the collection?
5. If a collection has 16 objects, how many objects are there in one fourth of the collection?
6. If a collection has 20 objects, how many objects are there in one fourth of the collection?
7. If a collection has 12 objects, how many objects are there in one half of the collection?

5. Folding and cutting of a whole

(a) One half

Take a sheet of paper of paper

Fold it by bringing two opposite edges together



Unfold the sheet. There is a line in the middle which divides the sheet

lves.two in

Take a sheet of Paper

Fold it as shown above

Unfold the sheet. There is a line in the Middle which divides the sheet in two halves.

Take a sheet of paper

Fold it as shown above

Unfold the sheet. There is a line in the middle which divides the sheet in two halves.

(b) One fourth

Take a sheet of paper

Fold it by bringing the opposite edges together

Fold it again

Unfold the sheet. There are three lines which divide the sheet in four quarters.

Take a sheet of paper

Fold it.

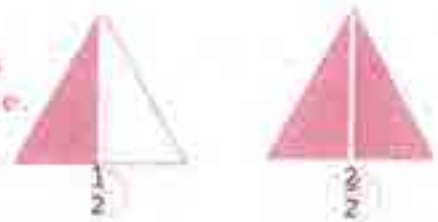
Again fold the folded sheet

unfold the sheet. The sheet is divided into four equal parts.

6. One half and two halves of a whole

$\frac{1}{2}$ $\frac{2}{2}$

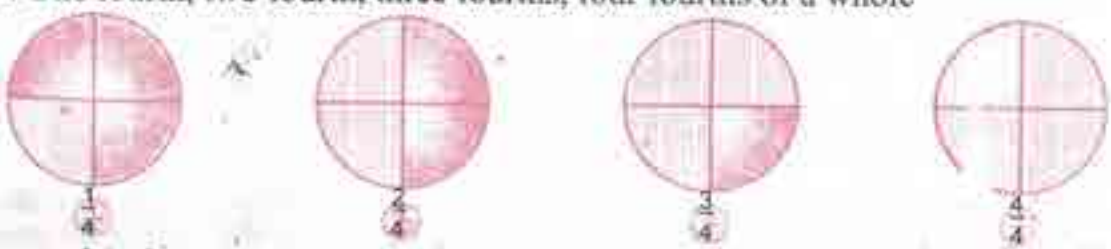
One half = two halves or a whole (1)



$\frac{1}{2}$ $\frac{2}{2}$

One half two halves or a whole (1)

7. One fourth, two fourth, three fourths, four fourths of a whole



$\frac{1}{4}$ $\frac{2}{4}$ $\frac{3}{4}$ $\frac{4}{4}$

one fourth two fourths three fourths four fourths

Four fourths make a whole

8. One third, two thirds, three thirds of a whole

$\frac{1}{3}$ $\frac{2}{3}$ $\frac{3}{3}$

one third two thirds three thirds or a whole (1)

Three thirds make a whole

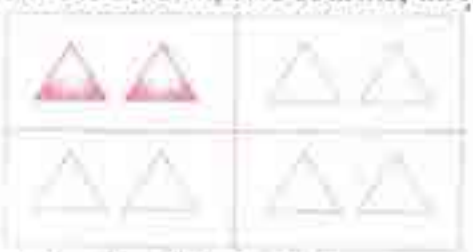
9. One half and two halves of a Collection

One half is shaded

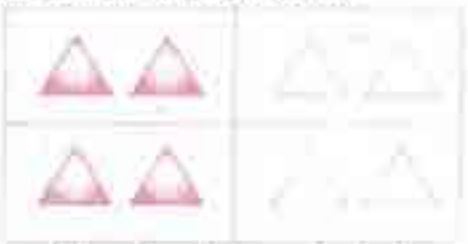
Two halves are shaded or all are shaded

Two halves make a whole

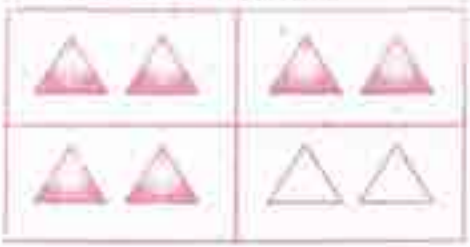
10. One fourth, two fourths, three fourths, four fourths of a collection



One fourth is shaded



Two fourths are shaded

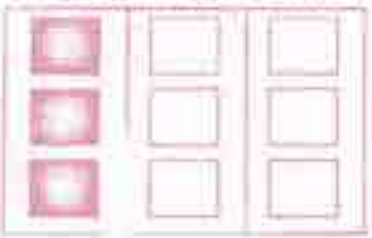


Three fourths are shaded.

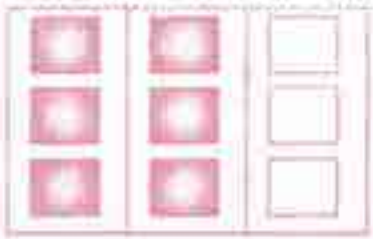
Four fourths are shaded or all are shaded.

Four fourths make a whole.

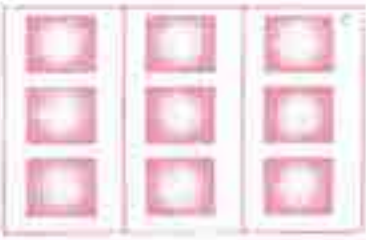
11. One third, two thirds, three thirds of a collection



One third is shaded.



Two thirds are shaded.

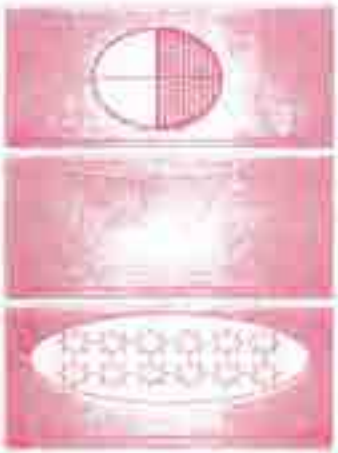


Three thirds are shaded or all are shaded.

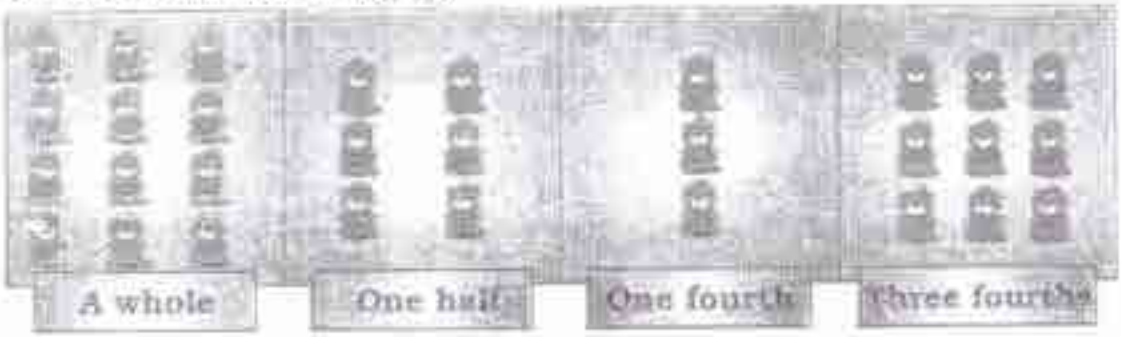
Three thirds make a whole.

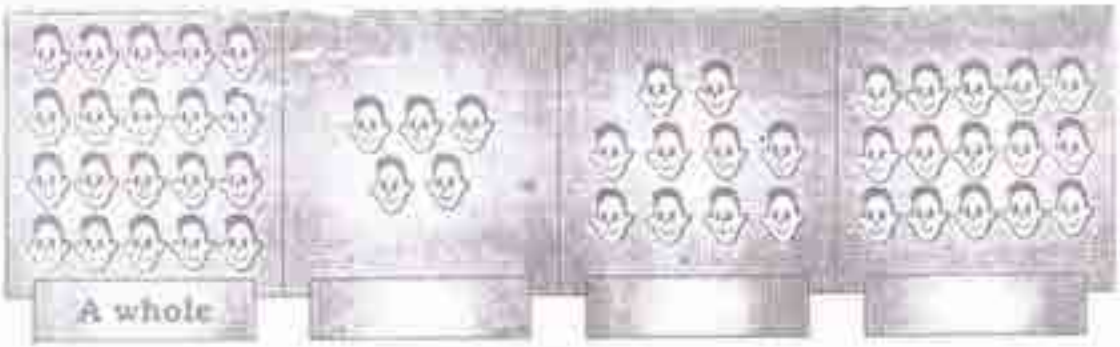
Activity IV :

1. What fraction does the coloured portion show?

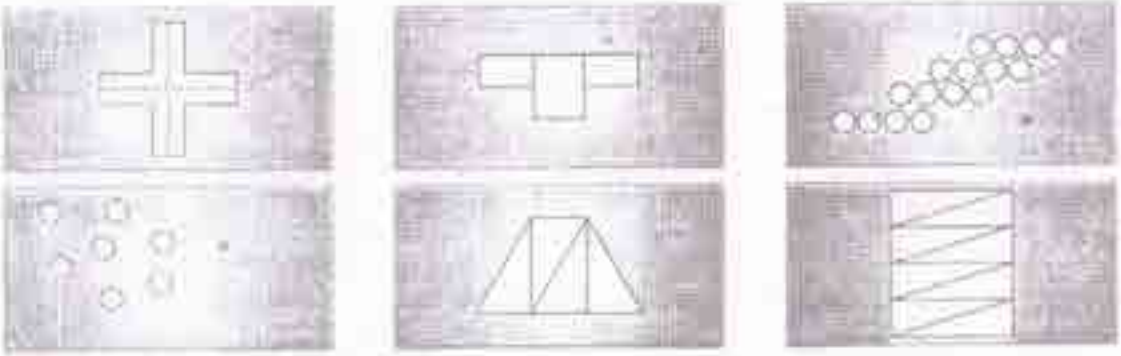


2. Write the fraction in the box



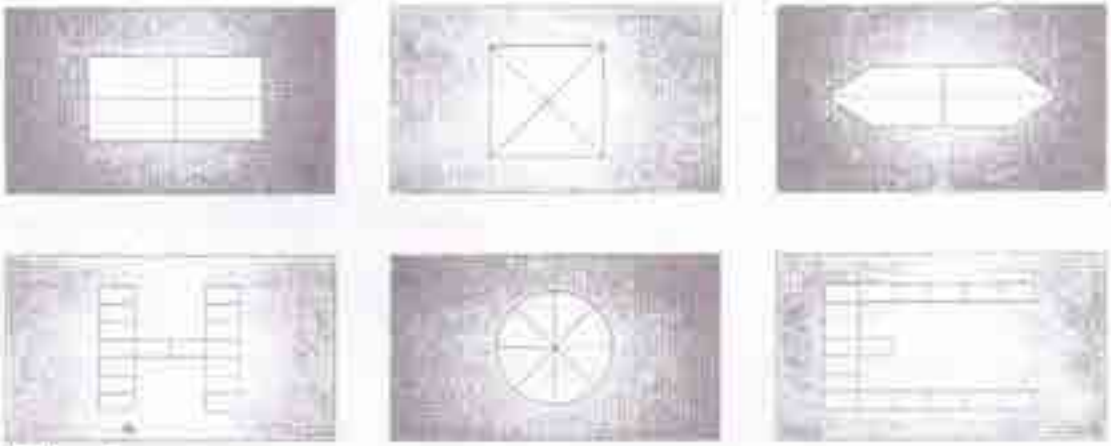


3. Colour one fourth of the whole or the collection :



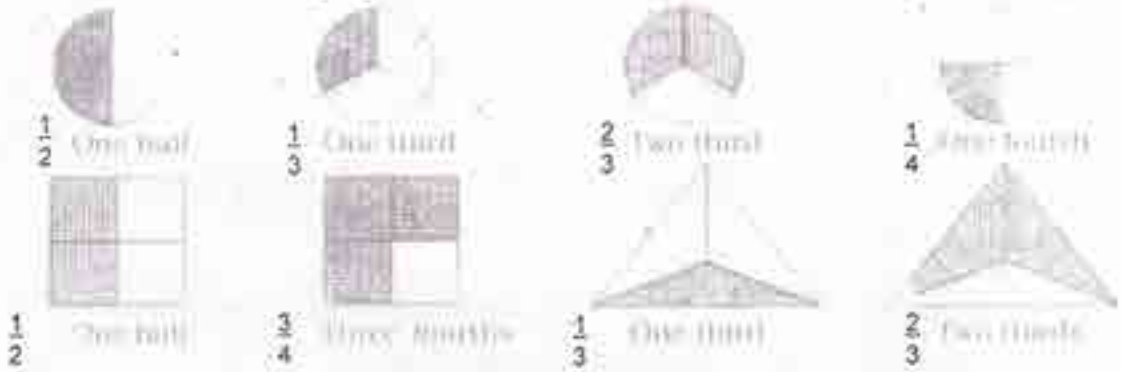
4. Colour two thirds of the whole or the collection :

5. Colour three fourths of the whole or the collection :



A Fraction

Look at the following figures :



We write the above fractional numbers, in symbols, as :

one half — $\frac{1}{2}$ two thirds — $\frac{2}{3}$

one third — $\frac{1}{3}$ three fourths — $\frac{3}{4}$

one fourth — $\frac{1}{4}$

The Symbols $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{2}{3}, \frac{3}{4}$ etc. are called fractions.

In $\frac{1}{2}$, the bottom number 2 indicates that the whole is divided into 2 equal parts. The top number 1 indicates that only 1 part is considered.

Similarly,

In $\frac{1}{3}$, the bottom number 3 indicates that the whole is divided into 3 equal parts. The top number 1 indicates that only 1 part is considered.

In $\frac{3}{4}$, the bottom number 4 indicates that the whole is divided into 4 equal parts. The top number 3 indicates that only 3 parts are considered.

Numerator and denominator of a fraction

Look at the following figures and read the fraction written below it :

$\frac{1}{2}$

$\frac{1}{4}$

A fraction is made up of two numbers written one over the other, namely a top number and a bottom number.

The bottom number tells us into how many equal parts a whole (or a collection) has been divided. We call it the denominator.

The top number tells us how many of those equal parts have been taken for consideration. We call it the numerator.

Look carefully at shapes, shown below and their corresponding shaded portions

$\frac{1}{2}$

$\frac{1}{3}$

$\frac{2}{3}$

$\frac{3}{5}$

Here

In $\frac{2}{3}$, the numerator is 2 and the denominator is 3.

In $\frac{3}{4}$, the numerator is 3 and the denominator is 4.

In $\frac{1}{3}$, the numerator is 1 and the denominator is 3.

Reading a fraction:

$\frac{1}{2}$ is read as half or 1 over 2 (one by two)

$\frac{1}{3}$ is read as one third or 1 over 3 (one by three)

$\frac{2}{3}$ is read as two thirds or 2 over 3 (two by three).

$\frac{3}{4}$ is read as three fourths or 3 over 4 (three by four).

Note: The fraction of the type $\frac{3}{4}$, $\frac{5}{6}$, $\frac{7}{6}$, $\frac{7}{6}$, $\frac{3}{7}$, $\frac{2}{9}$, etc. wherein the numerator is smaller than the denominator are called proper fractions.

Activity V :

1. Write the numerator and denominator of each of the following Fraction :

Fraction	Numerator	Denominator	Fraction	Numerator	Denominator
$\frac{1}{3}$			$\frac{1}{2}$		
$\frac{1}{4}$			$\frac{3}{4}$		
$\frac{2}{3}$			$\frac{4}{5}$		

2. Write fraction for the numerator and denominator given below:

numerator =2 ☐ denominator = 8 ☐

denominator = 3 ☐ merator = 5 ☐

numerator = 3 ☐ denominator = 3 ☐

denominator = 4 ☐ numerator = 2 ☐

3. In the fraction $\frac{3}{4}$,

(a) what is 4 called ? _____

(b) what is 3 called ? _____

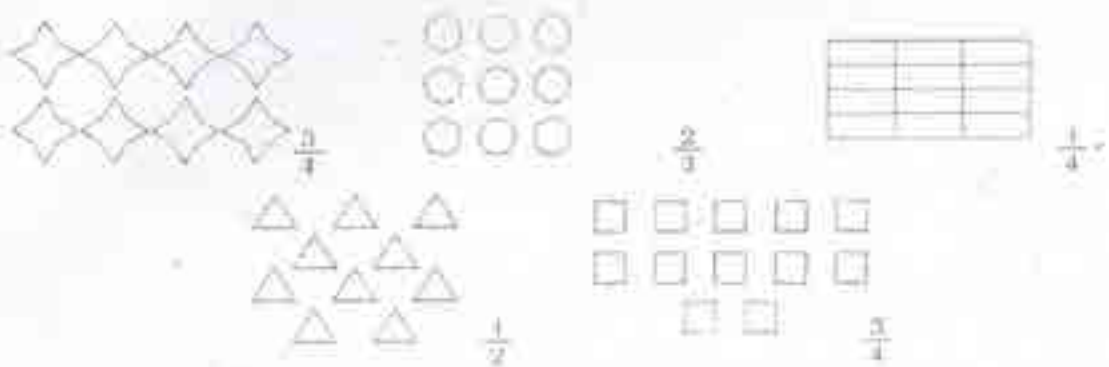
(c) how do we read the fraction ? _____

(d) what does 4 tell us ? _____

4. Write fraction for each shaded part :

5. Write in words :

6. Shade the portion corresponding to the given fraction :



7. Write any five fractions in the space given below :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