

Class
4



A Comic Textbook

Mathematics



সমগ্র শিক্ষা মনিপুর

SAMAGRA SHIKSHA MANIPUR



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A Comic Textbook

Class 4
Mathematics

COMIC TEXTBOOKS DEVELOPMENT TEAM

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- Comic Illustration by NEST Advertising & Marketing Pvt. Ltd.

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PREFACE

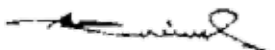
Students of Primary Class love stories, fun and always want to explore. Normal textbooks, many a times, are difficult to read and understand without the help of a teacher or parent. Cartoons and Comics always create the interest amongst students. The main objective for developing Comic Textbooks for Class III, IV and V is to entertain and educate young minds by creating unique illustrated books in comic strips so as to help to them learn easier with fun, retain the characters and stories, arouse curiosity, encourage peer learning, and induce reading habits.

Utmost care has been taken to relate the stories to the cultures and tradition of the State. Effort has also been made to cover the concepts and chapters of the entire textbook (Mathematics Class IV) and also the Learning Outcomes.

The objectives would not have been fulfilled without the support and help of a large number of dedicated teachers of the Department, Resource Persons from SCERT, Manipur and Samagra Shiksha, Writers and Cartoonist, NE Brothers Entertainments Pvt. Ltd and NEST Advertising and Marketing Pvt. Ltd. The project would not have been brought to this stage without the support and guidance of Dr. Amarendra Behera, Professor and Head of ICT, NCERT and other Team members of NCERT, New Delhi. The project has also the support of Shri Th. Radheshyam Singh, Hon'ble Minister (Education), Manipur for conceptualization of the concepts.

I would appreciate every member of the Comic Team and other Officials of the Department for their support in this yearlong journey that has led to the development of the 3 Comic Textbooks. As the initiative is done for the first time, shortcomings could have been there. Suggestions from the readers for further improvement are welcome.

Imphal
The 11th April, 2020


(Th. Kirankumar, IAS)
Director, Education (Schools) and
SPD (Samagra Shiksha)
Manipur

BRICKS AND TILES

THOIBA AND TOMBA WERE FRIENDS FROM DIFFERENT SCHOOLS AND THEY MET AT A PAINTING COMPETITION

YOUR PAINTING IS VERY NICE. HAVE YOU EVER SEEN A BRICK FARM?

THOIBA'S PAINTING WAS A BEAUTIFUL PUCCA HOUSE NEAR A BRICK FARM IN A VILLAGE.



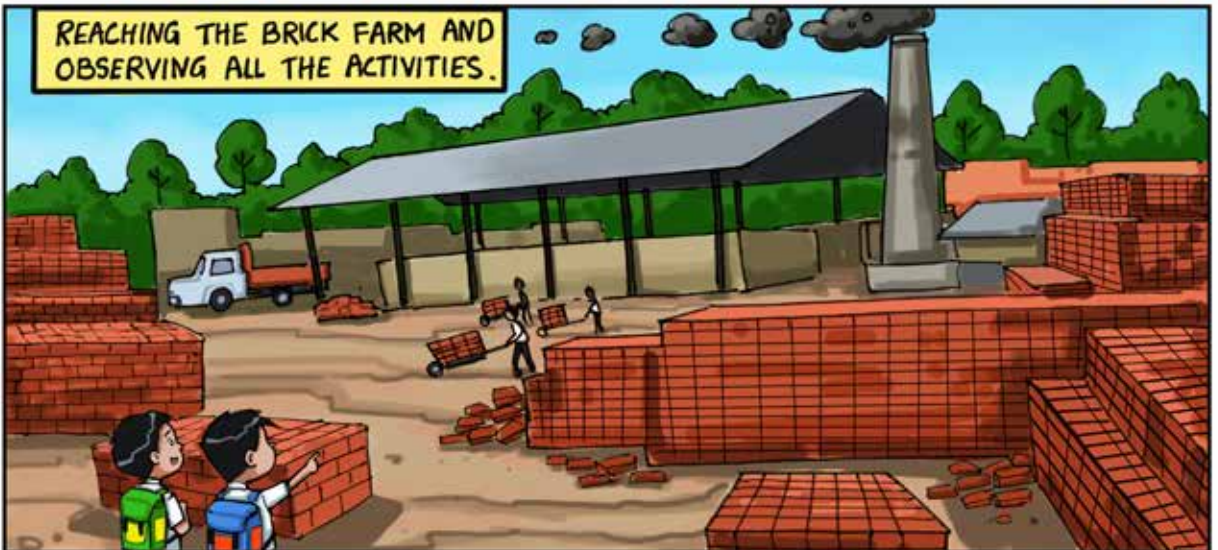
YES, THERE IS A BRICK FARM NEAR OUR HOUSE. WE FREQUENTLY GO THERE.

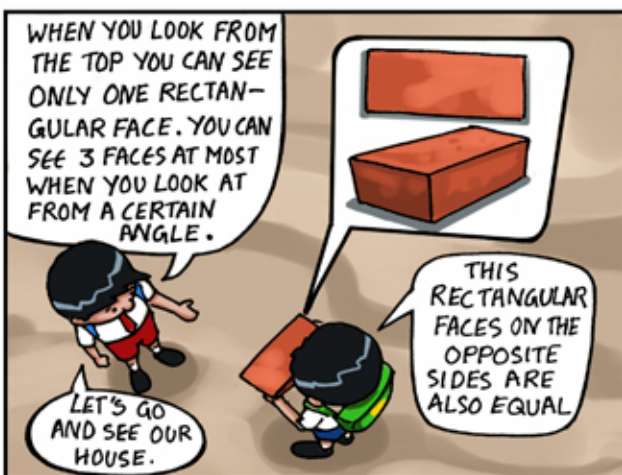
I HAVE NEVER BEEN TO A BRICK FARM, I WONDER HOW IT IS?

WHY DON'T WE GO TO THE FARM NEAR OUR HOUSE

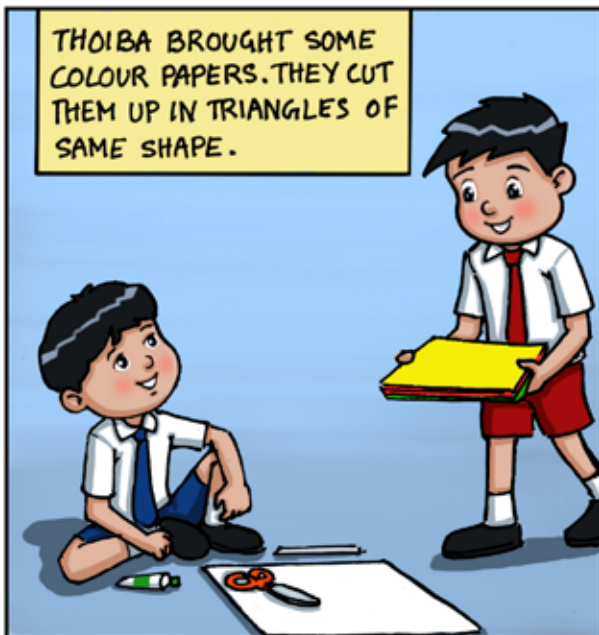
YES THAT WILL BE FUN.

REACHING THE BRICK FARM AND OBSERVING ALL THE ACTIVITIES.



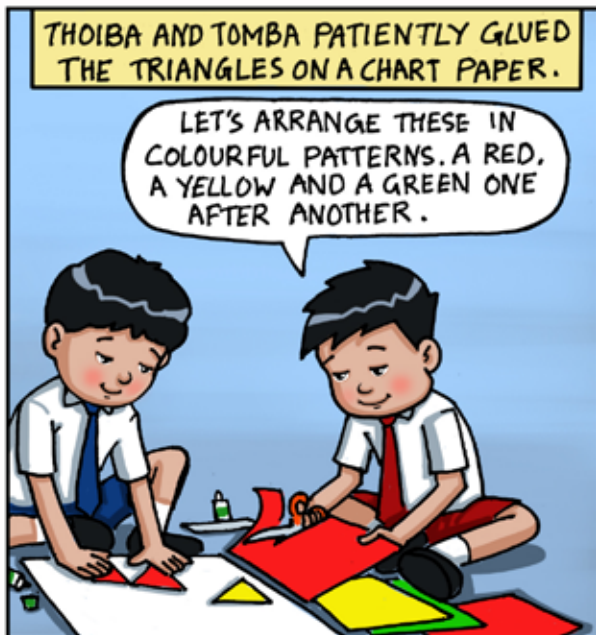


THOIBA BROUGHT SOME COLOUR PAPERS. THEY CUT THEM UP IN TRIANGLES OF SAME SHAPE.



THOIBA AND TOMBA PATIENTLY GLUED THE TRIANGLES ON A CHART PAPER.

LET'S ARRANGE THESE IN COLOURFUL PATTERNS. A RED, A YELLOW AND A GREEN ONE AFTER ANOTHER.



THIS IS SO BEAUTIFUL.

LET'S TRY MAKING MORE PATTERN WITH DIFFERENT SHAPES.

YES WE CAN MAKE MANY PATTERNS USING DIFFERENT SHAPES TOO.



ACTIVITY: MAKE A PATTERN USING STRIPS OF COLOURFUL PAPERS.

MY BEAUTIFUL SILK SKIRT

THOIBA AND HIS FAMILY WERE VISITING A LOCAL SUPER MARKET TO DO SOME SHOPPING.

CAN I SEE SOME CLOTHES FABRIC FOR MY CHILDREN?

YES MADAM, WE HAVE VARIETY OF CLOTH FABRICS IN DIFFERENT COLOURS.

SALESMAN SHOW CLOTHES OF VARIOUS COLOURS AND TYPES.

I LIKE THIS BLUE COLOURED SILK FOR MAKING A BEAUTIFUL SKIRT.

I LIKE THIS WHITE COTTON CLOTH. I LIKE TO MAKE A SHIRT LIKE MY PAPA WHEN HE GOES TO WORK.

HOW MUCH FOR THESE TWO?

MADAM, THE RATE CHART IS HERE PLEASE CHECK IT.

SHOWS A RATE CHART..

GIVE ME 2M OF WHITE COTTON, 3M OF YELLOW WOOLLEN AND 2M BLUE SILK CLOTHES.

CLOTHES TYPE	RATE
COTTON	₹ 100 per metre
WOOLLEN	₹ 150 per metre
SILK	₹ 250 per metre

MAMA WHY ARE YOU BUYING 3M FOR WOOLLEN BUT 2M ONLY FOR EACH OF US.

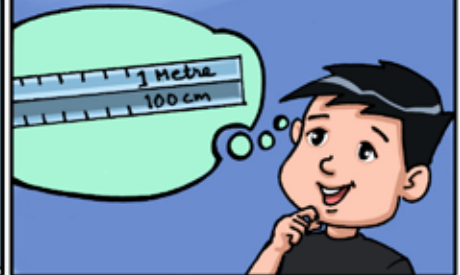
YES MAMA WHY DID YOU BUY WOOLLEN CLOTHES MORE THAN OURS?

BECAUSE WE NEED LONGER CLOTH AS WE WILL BE MAKING TWO WOOLLEN SHIRTS FOR BOTH OF YOU.

SALESMAN TAKE OUT A MEASURING SCALE OF LENGTH 1m AND MEASURE THE COTTON CLOTH TWO TIMES WITH IT AND THEN HE CUT IT. SIMILARLY HE MEASURED THE WOOLLEN CLOTHES 3 TIMES AND THE SILK CLOTHES 2 TIMES AND THEN CUT THEM.

OKAY MADAM, LET ME MEASURE EACH OF THEM AND CUT IT.

THOIBA SAW THAT THE SCALE WAS MARKED 1METRE ON ONE EDGE AND ON THE OPPOSITE EDGE IT WAS MARKED 100cm.



AH... SO 1METRE IS SAME AS 100 CM.

YES AND SINCE MAMA IS BUYING 2 METRE OF COTTON CLOTHES UNCLE SALESMAN IS MEASURING IT TWO TIMES.

TO THE SALESMAN

SO HOW MUCH FOR THESE CLOTHES?

SALESMAN CALCULATES ON A PIECE OF PAPER WHICH LOOKS LIKE.

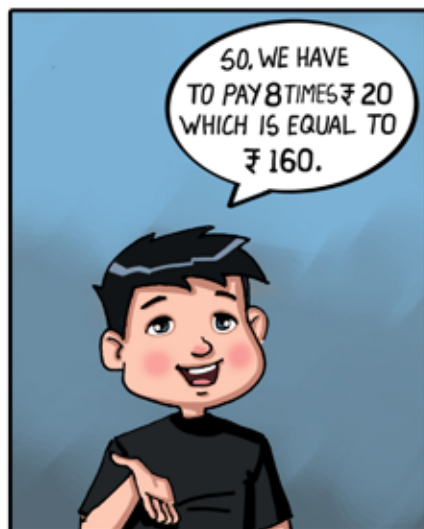
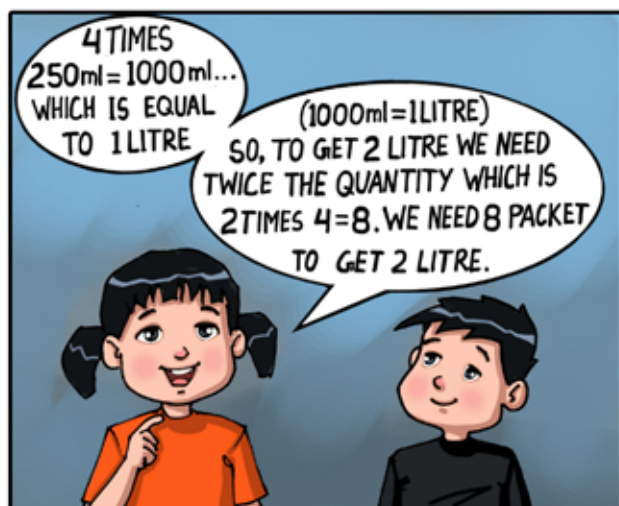
TYPE OF CLOTHES	QUANTITY	RATE	AMOUNT
COTTON	2 M	₹ 100/M	₹ 200
WOOLLEN	3 M	₹ 150/M	₹ 450
SILK	2 M	₹ 250/M	₹ 500
			TOTAL = ₹1150

MADAM IT WILL BE ₹.200 FOR THE COTTON, ₹.450 FOR THE WOOLLEN AND ₹.500 FOR THE SILK.

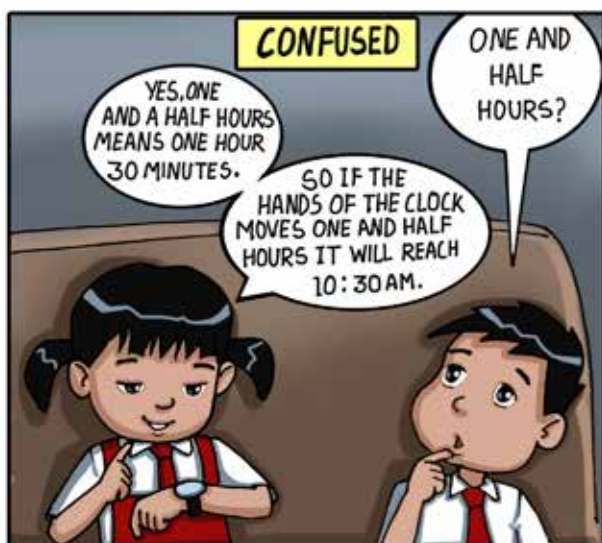
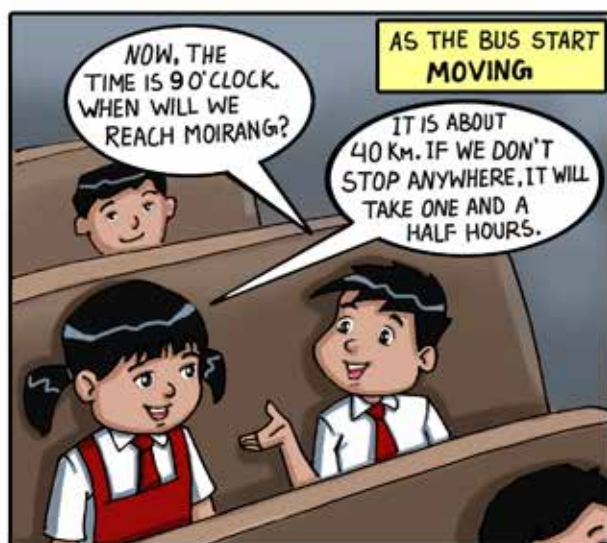
SO WE HAVE TO PAY ₹ 1150 TO UNCLE

TAKES A PIECE OF PAPER LYING NEARBY AND CALCULATES $200+450+500=1150$





PICNIC AT MOIRANG



AS BUS BEING REFILLED SOME CHILDREN GO TO THE TOILET NEAR THE PETROL PUMP.

IT TAKES 5 MINUTES

WHAT TIME CAN WE EXPECT TO REACH MOIRANG?

WE ARE ALREADY LATE BY 5 MINUTES. SO, WE EXPECT TO REACH AT 10:35AM.

LOOK, THE METER READING BOX.

₹ 1400 FOR 20 LITRES.

WHAT COULD BE THE PRICE PER LITRE?

UMM....MM
₹ 70 PER LITRE.

HOW DID YOU KNOW?

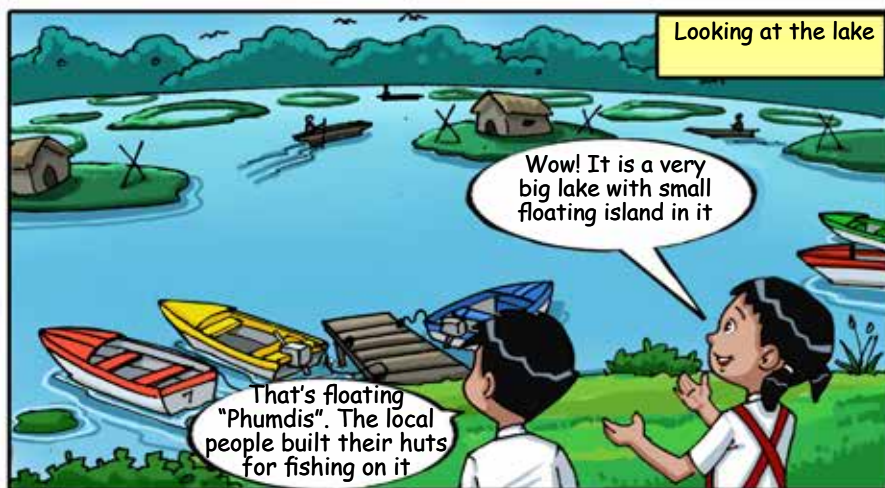
IF THE VALUE OF MULTIPLE TIMES IS GIVEN, THEN SIMPLY

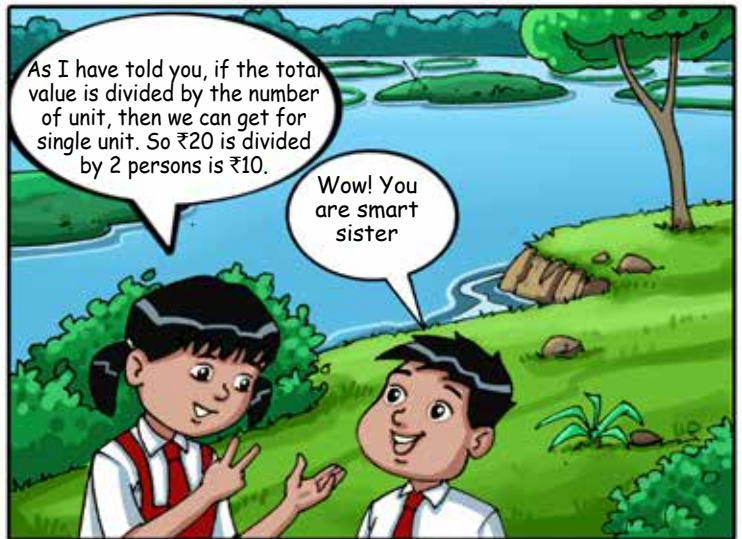
DIVIDE THE TOTAL VALUE BY THE NUMBER OF UNITS TO OBTAIN THE VALUE OF ONE UNIT. SO, ₹1400 DIVIDED BY 20, WE GET ₹ 70.

WOW! YOU ARE VERY SMART.

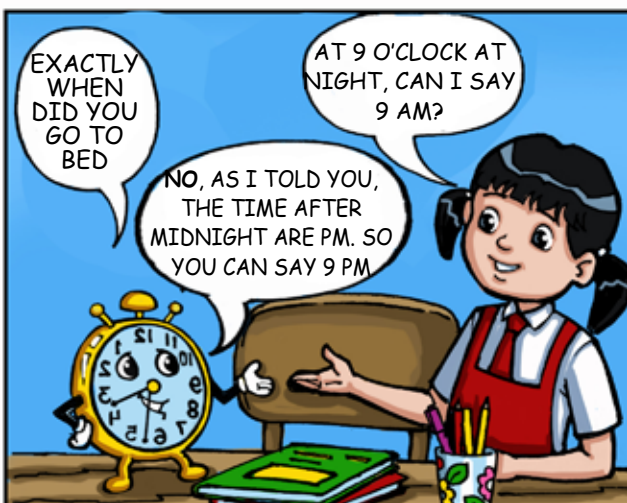
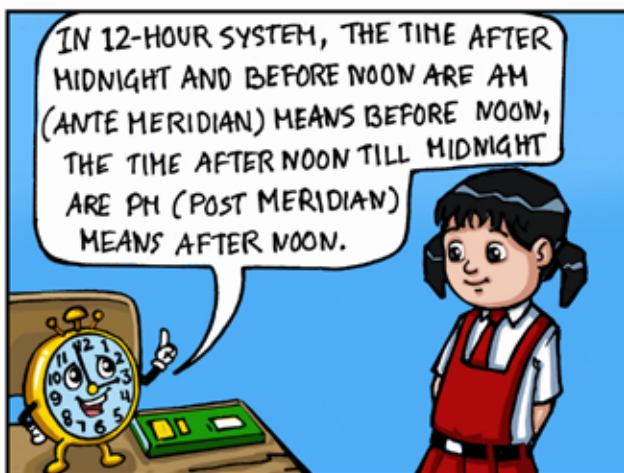
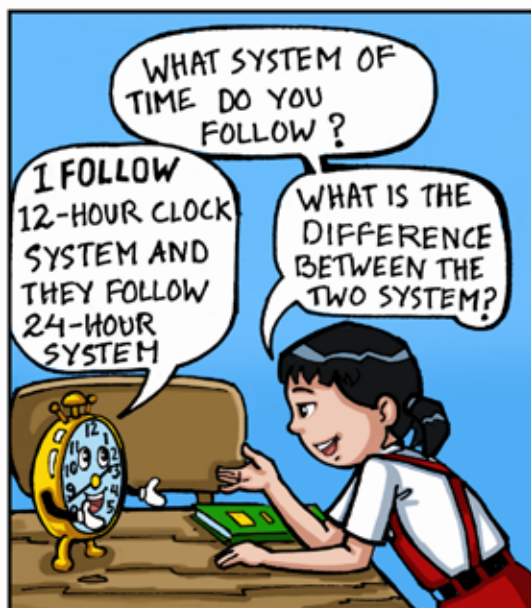
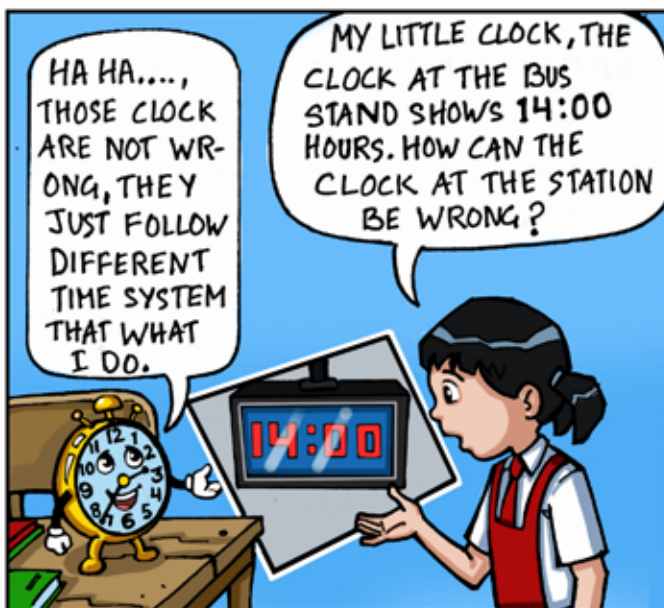
SEE, RAJU HAS TAKEN AS MUCH TIME TO EMPTY HIMSELF AS OUR BUS IS TAKING TO REFILL.

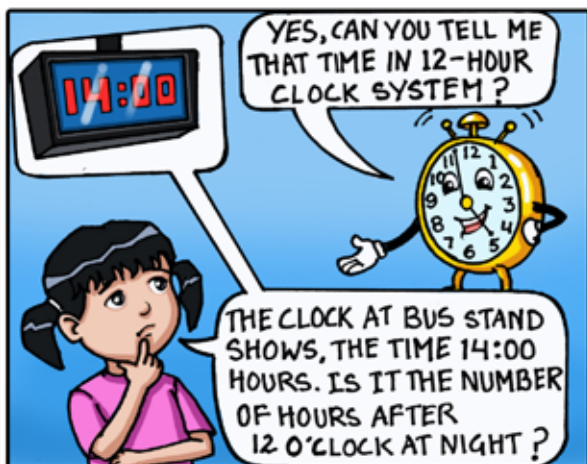
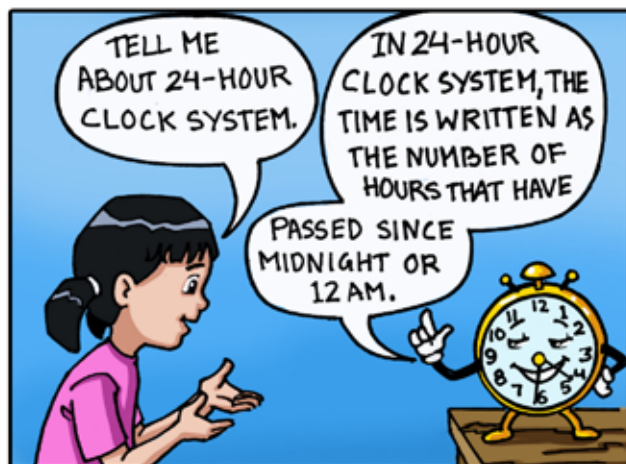
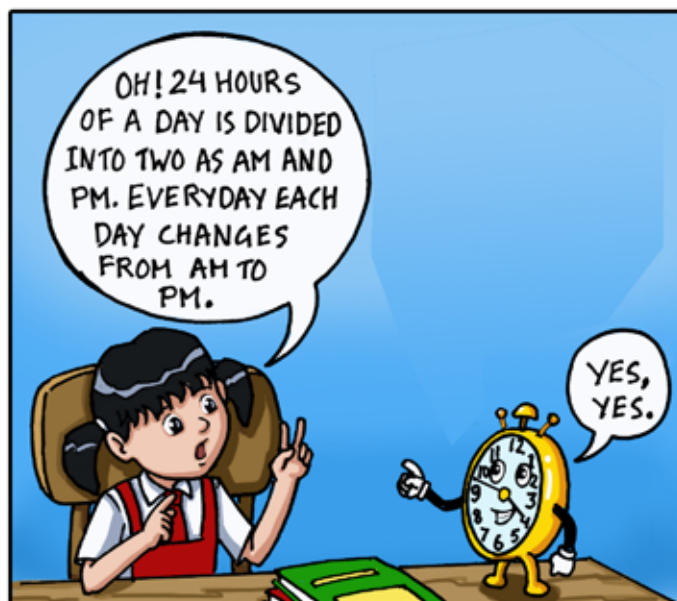
HA!
HA!





MY LITTLE CLOCK





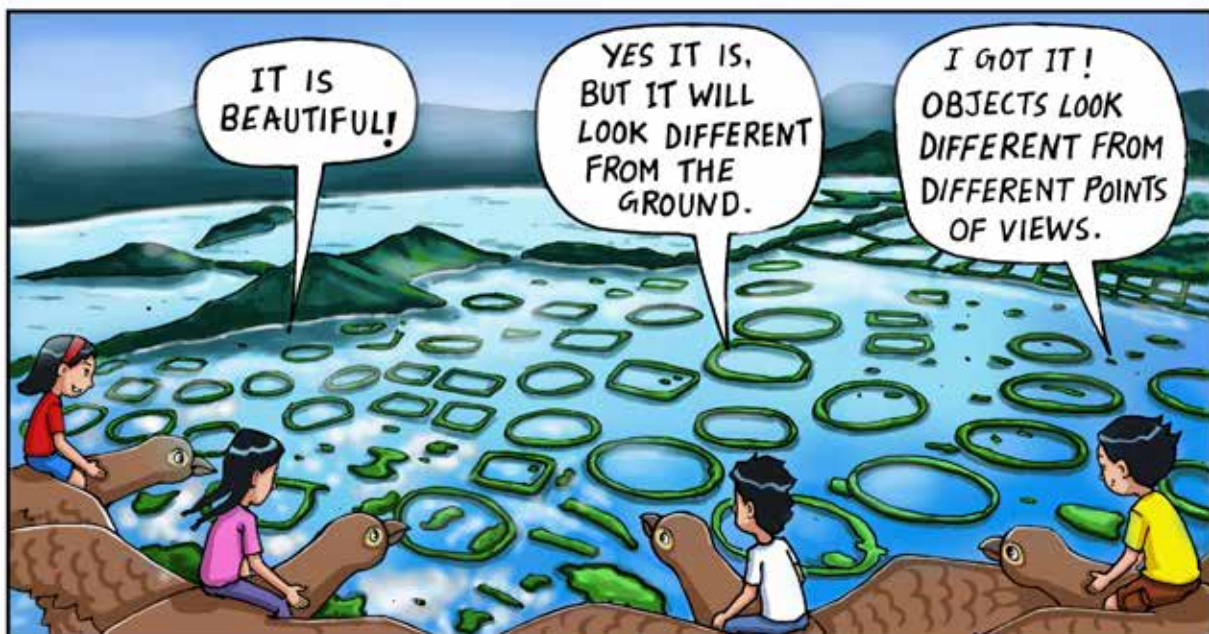


FUN FROM THE SKY









HI! MY NAME IS CIRCLE AND DON'T I LOOK ROUND IN SHAPE?



I LOOK JUST LIKE THE SAUCER IN YOUR KITCHEN.



OR LIKE THE WHEELS ON YOUR DADDY'S CAR.



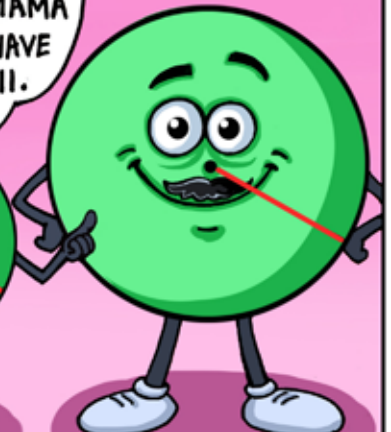
LOOK AT THE DOT AT MY BODY, IT IS CALLED THE CENTRE OF ME.



THE BORDER ALONG MY BODY IS EQUIDISTANT EVERYWHERE FROM THE CENTER. AND THE DISTANCE IS CALLED RADIUS.



PAPA CIRCLE HAS A LARGER BODY AND SO A LARGER RADIUS. MAMA AND SISTER ALL HAVE DIFFERENT RADII.



CONFUSED??

YES, RADII
IS THE PLURAL
OF RADIUS.
MANY RADIUS
MAKES A
RADII.



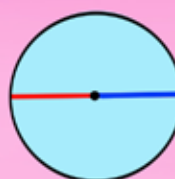
WHEN ANY TWO POINT ON
MY BOUNDARIES JOIN TOGETHER
BY A STRAIGHT LINE IT IS
CALLED A CHORD.



AND WHEN ONE OF THESE
CHORDS PASSES THROUGH MY
CENTRE, IT IS CALLED THE
DIAMETER AND IT IS THE
LONGEST CHORD ON MY BODY.

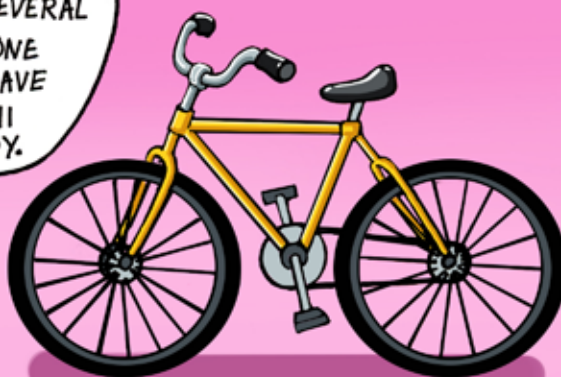


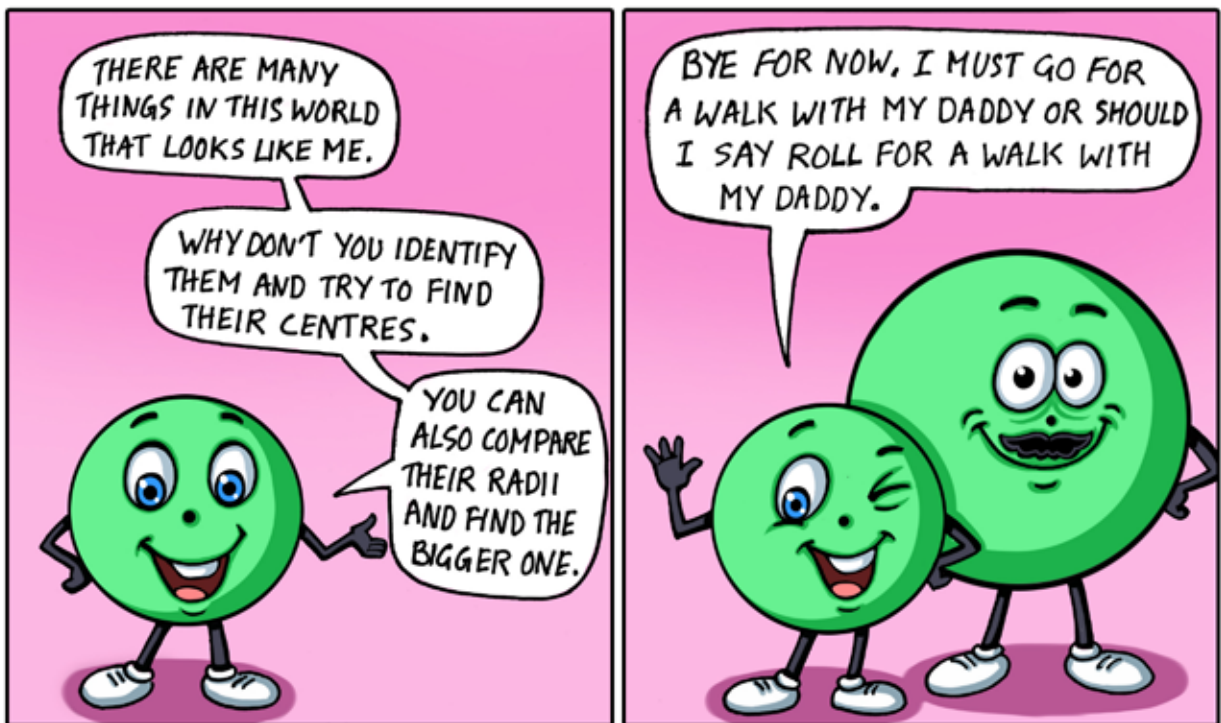
MY DIAMETER
IS ALSO MADE UP OF
TWO RADIUS ALONG
A STRAIGHT LINE.



DO YOU HAVE
A BICYCLE?

THE SPOKES ON THE
WHEELS ARE SEVERAL
DIAMETERS IN ONE
CIRCLE. SO I HAVE
MANY RADII
ON MY BODY.

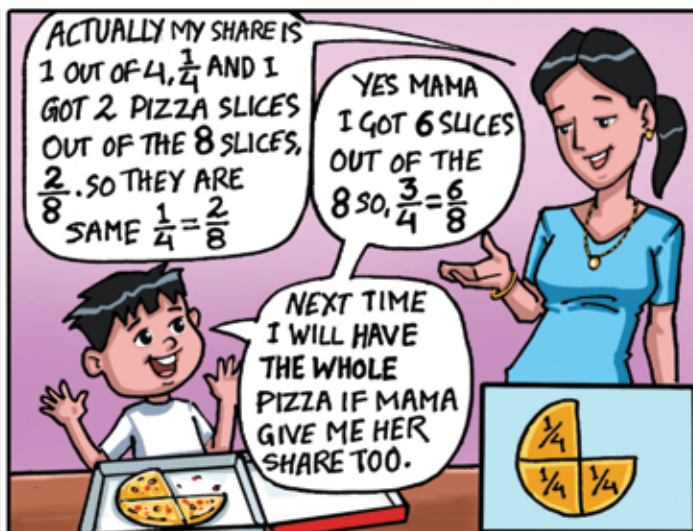
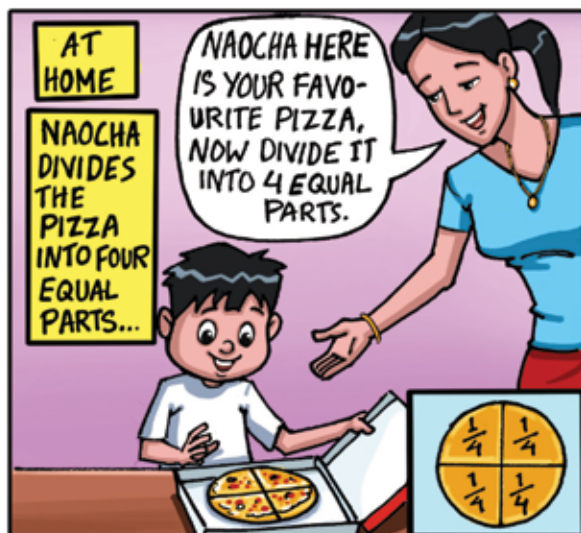
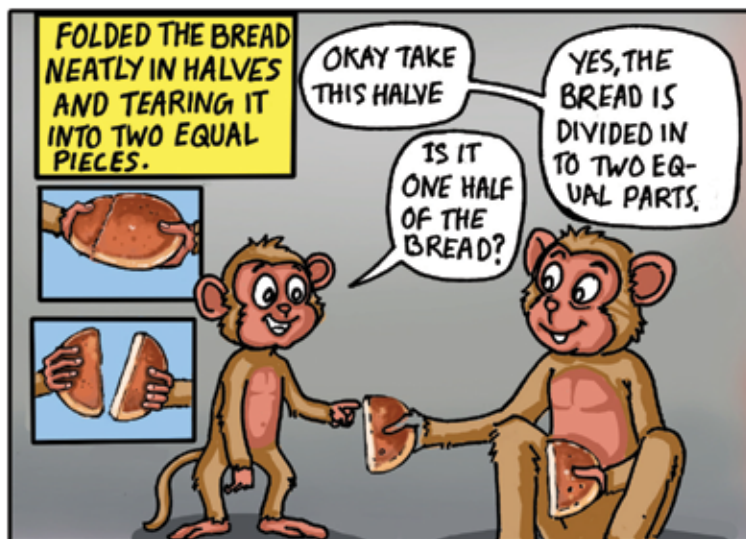




ACTIVITY: TRY FINDING OBJECTS IN YOUR HOME THAT HAS THE SHAPE OF A CIRCLE AND COMPARE THEM.

THE TWO MONKEYS AND A BREAD





MY ACTIVITY BOOK

LEIMA AND GEETA WERE BUYING SOME BOOKS AT A BOOK FAIR.



LEIMA SAW A BOOK THAT WAS NAMED "FUN WITH PATTERNS AND OTHER PUZZLES".



GEETA BOUGHT THE BOOK AND GAVE IT TO LEIMA.



AT HOME, LEIMA AND MEENA WERE PLAYING.



LEIMA BROUGHT THE BOOK AND OPENED IT UP.



ACTIVITY.1

ARRANGING IN PATTERN

TAKING 8 MATCHSTICKS AND MAKE DIFFERENT SHAPES AND PATTERN OUT OF IT.

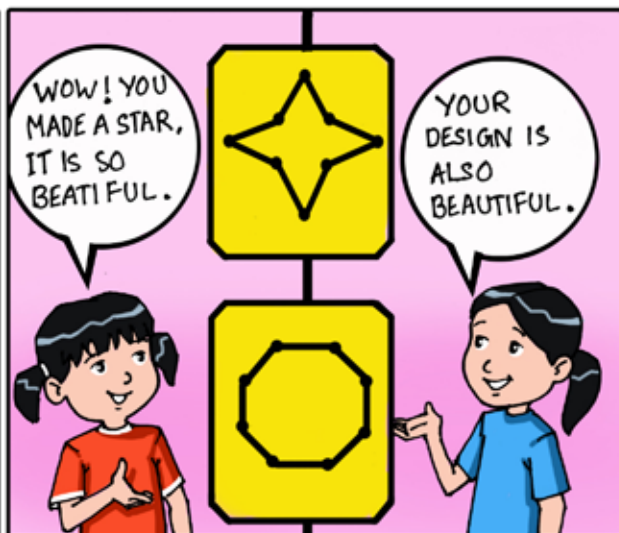
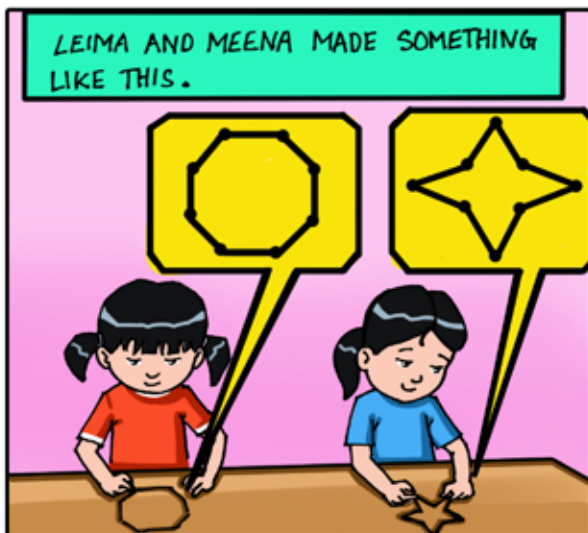
LEIMA RAN TO THE KITCHEN AND ASKED GEETA FOR 16 MATCHSTICKS.



RUNNING BACK.

HERE YOU GO. 8 MATCHSTICKS FOR YOU AND 8 FOR ME. BUT LET'S NOT LOOK AT EACH OTHER UNTIL WE ARE DONE.



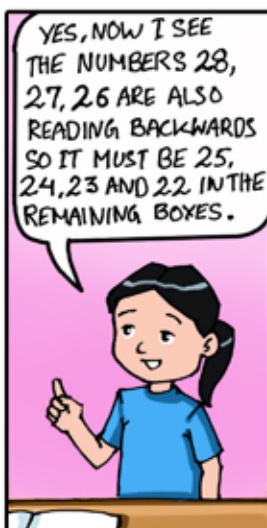
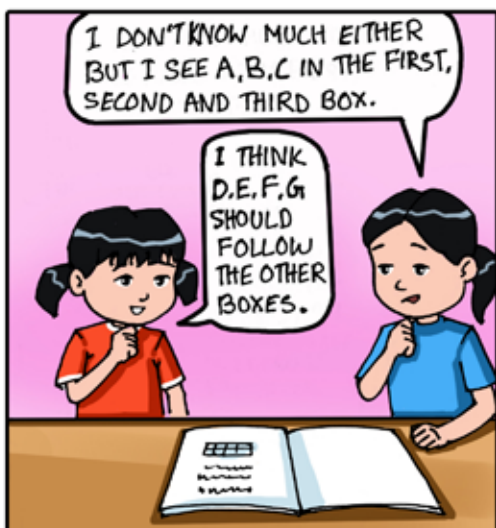


ACTIVITY 2

WHAT COMES AFTER?

READ THE SEQUENCE AND COMPLETE THE TABLE.

28 A	27 B	26 C	



LEIMA AND MEENA WROTE ON THE BLANK BOXES.

28 A	27 B	26 C	25 D
24 E	23 F	22 G	

LET'S WRITE IT DOWN THEN.

MEENA TURNS THE NEXT PAGE THAT READS.

THIS BOOK IS SO FUN.

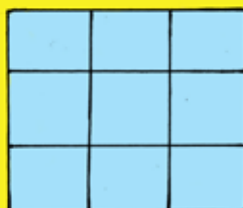
IT SAYS MAGIC NUMBERS.



ACTIVITY 3

MAGIC NUMBERS.

ARRANGE 1,2,3 IN THE BOX SUCH THAT NO NUMBERS ARE REPEATED IN EACH COLUMNS AND ROWS.

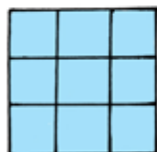


THIS IS EASY. MY UNCLE TAUGHT ME HOW TO SOLVE IT BEFORE.

PLEASE TEACH ME.



SEE THERE ARE THREE ROWS.



FIRST ROW
SECOND ROW
THIRD ROW

PUT 1,2,3 IN EACH ROW BUT IN DIFFERENT ORDERS FOR EACH ROWS AND MAKE SURE NO NUMBER IN EACH COLUMN COMES TWICE



SO IF I PUT 1,2,3 IN THE FIRST ROW. THEN I CAN PUT 2,3,1 AND 3,1,2 IN THE FOLLOWING TWO ROWS.

EXACTLY. NOW LET'S FILL UP THE BOXES.



LEIMA FILLED UP THE EMPTY BOXES.

1	2	3
2	3	1
3	1	2



VERY NICE! YOU ARE DOING SO GREAT.

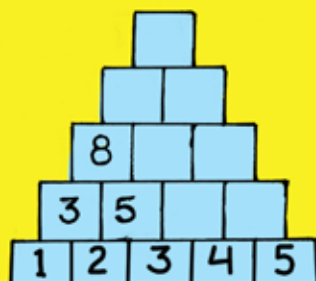
THANK YOU. IT WAS EASY AFTER YOU EXPLAINED. NOW LET'S SEE ACTIVITY 4.



ACTIVITY 4

NUMBER TOWER

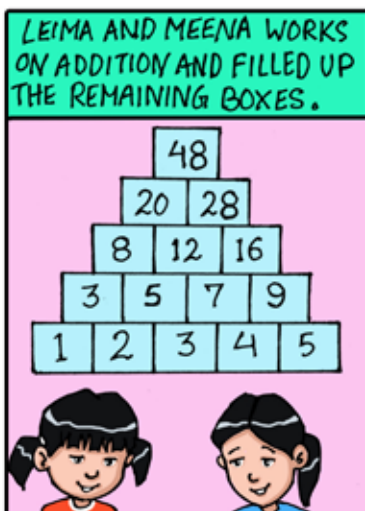
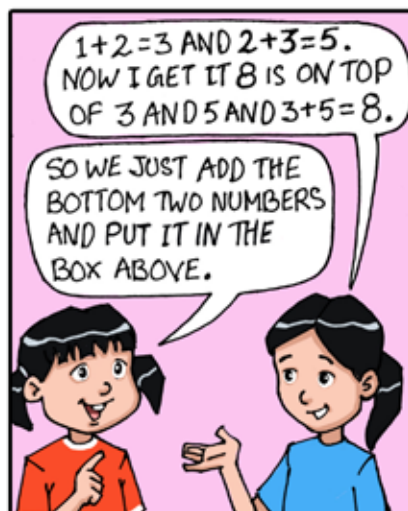
COMPLETE THE TOWER WITH CORRECT NUMBERS.



HOW DO WE DO IT? I DON'T HAVE A CLUE.

THE BOX WITH THE NUMBER 3 IS ON TOP OF TWO BOXES WITH 1 AND 2. AND 5 IS ON TOP OF 2 AND 3.





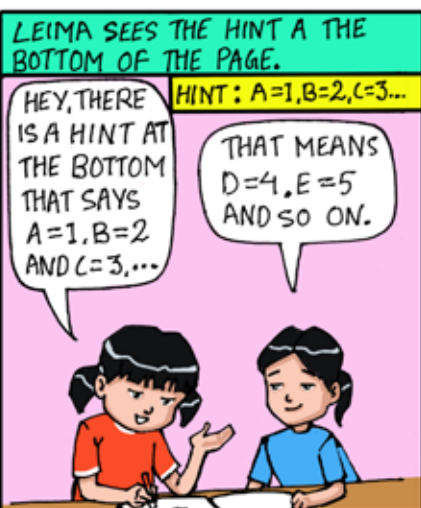
ACTIVITY 5

20 8 1 14 25 15 21

6 15 18

16 12 1 25 9 14 7

HINT: A=1, B=2, C=3...



LEIMA AND MEENA MADE A TABLE

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
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z

NOW LET'S CHANGE
THOSE NUMBERS
INTO ALPHABETS.

LEIMA AND MEENA WROTE THE
LETTERS ABOVE THE NUMBERS.

ACTIVITY 5

THANK YOU
20 8 1 14 11 25 15 21

FOR
6 15 18

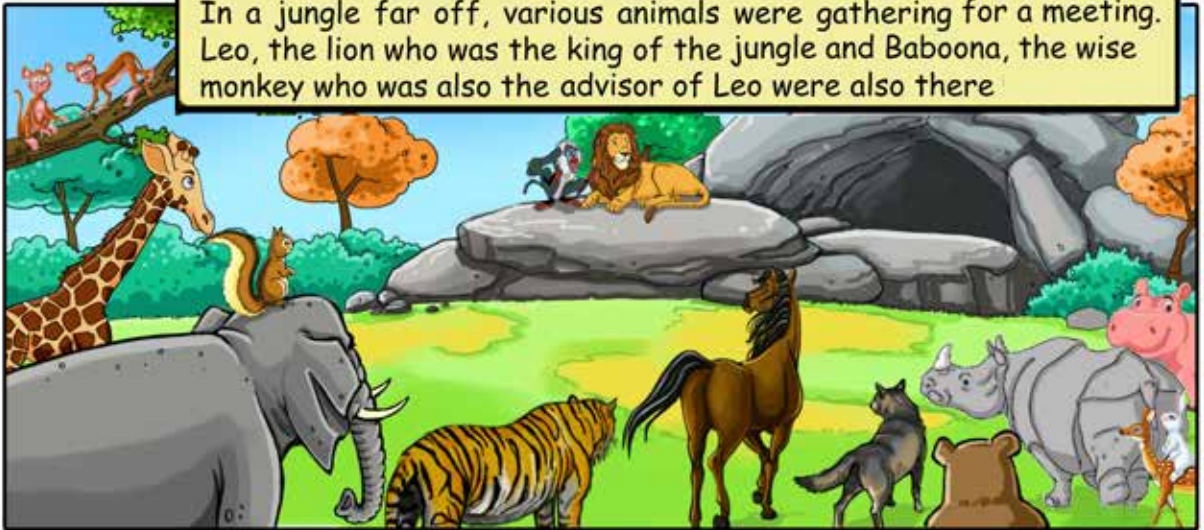
PLAYING
16 12 1 25 9 14 7

WOW! IT SAYS
"THANK YOU
FOR PLAYING"

THIS BOOK
IS SO FUN.
THEY
LAUGHED

MEETING IN THE JUNGLE.

In a jungle far off, various animals were gathering for a meeting. Leo, the lion who was the king of the jungle and Baboona, the wise monkey who was also the advisor of Leo were also there



see my dear friend, my subjects are all well behaved.



Yes my lord, I can see that they are sitting in a well arranged order.

baboon saw something like this



Starts to count the number of animals present

1,2,3,4,...

It is 24 sir.

How did you count so fast?

I did not count all of them. I just count the number of animals in the first row and the number of rows.

how did you know the total animal just by counting those?

It is easy my lord, the multiplication of the rows with the number of animals in each rows gives you the total.

so 1,2,3,4 rows and 1,2,3,4,5,6 animals in first row will make 4rows x 6animals equals 24animals.

yes that is right my lord.

	1	2	Rows	3	4
1					
2					
3					
4					
5					
6					

Leo counts all



1,2,3,4,5,6.... 24..
you are right baboon.
There is a total of 24
animals. You are
wise indeed.

I can hardly see
the last row. Let
the last row join up
with the other rows
to make only three rows.



the Meeting began

all animals assemble
to form the new arrangement

	1	2	3	4	5	6	7	8
1								
2								
3								

So we have 3 rows
and 8 animals in each
row in total and
 $3 \times 8 = 24$ which is
same as 4×6

Baboon I have
some candies and
I like to give them
to my subjects.

How do
you want to
distribute
them?

8 red candies and 4 greencandies for each of them.



If there were only one animal we will need 8 red candies and 4 green candies, that makes a total of 12 candies. And...

Baboona draws on the ground with a stick.

8 RED CANDIES x 1 ANIMAL = 8	4 GREEN CANDIES x 1 ANIMAL = 4	12 CANDIES x 1 ANIMAL = 8 + 4 = 12
8 RED CANDIES x 2 ANIMAL = 16	4 GREEN CANDIES x 2 ANIMAL = 8	12 CANDIES x 2 ANIMAL = 16 + 8 = 24
8 RED CANDIES x 3 ANIMAL = 24	4 GREEN CANDIES x 3 ANIMAL = 12	12 CANDIES x 3 ANIMAL = 24 + 12 = 36

With this we can the idea of addition of smaller multiples to the multiples of a larger number.

Rex came out of the den and seeing the crowd

Father there are so many animals and i can see many feets too.

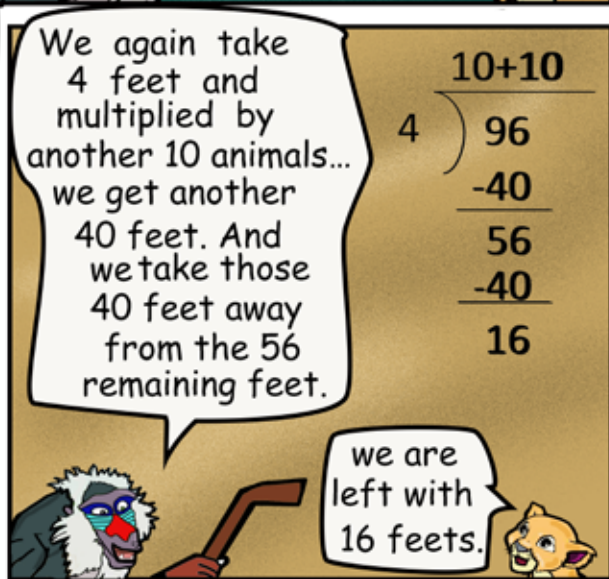
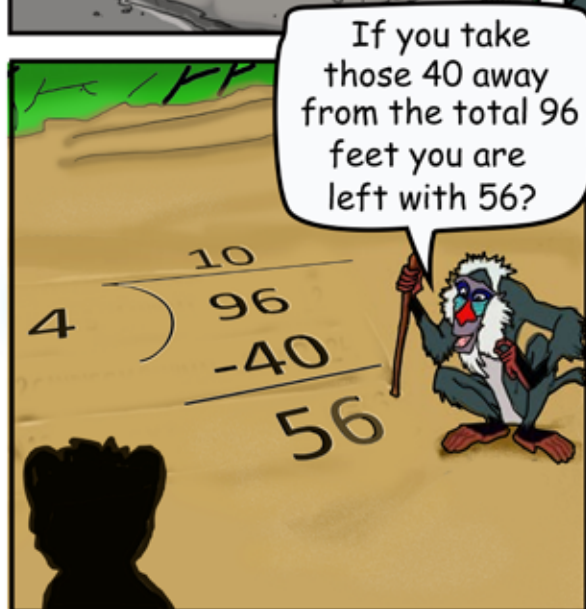


How many feet do you see?

Rex counts



1, 2, 3, 96 feet.





$$\begin{array}{r}
 10+10+4 \\
 \hline
 4 \overline{) 96} \\
 \underline{-40} \\
 56 \\
 \underline{-40} \\
 16 \\
 \underline{-16} \\
 0
 \end{array}$$

Now we have
 $10+10+4=24$ animals
 ... It was not so
 hard. Thank you for
 teaching me Uncle
 Baboona

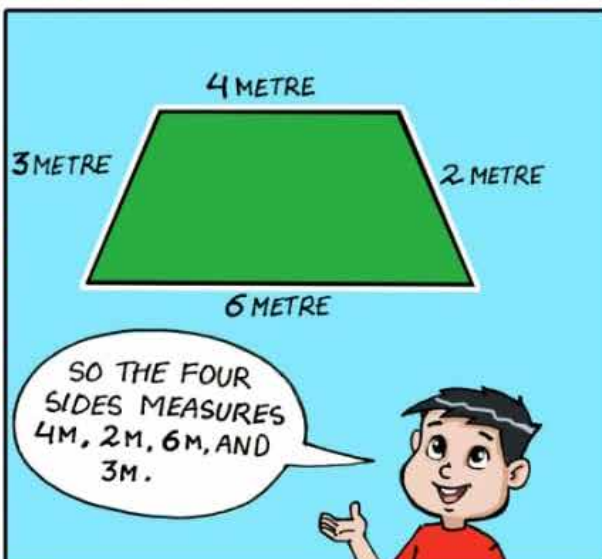
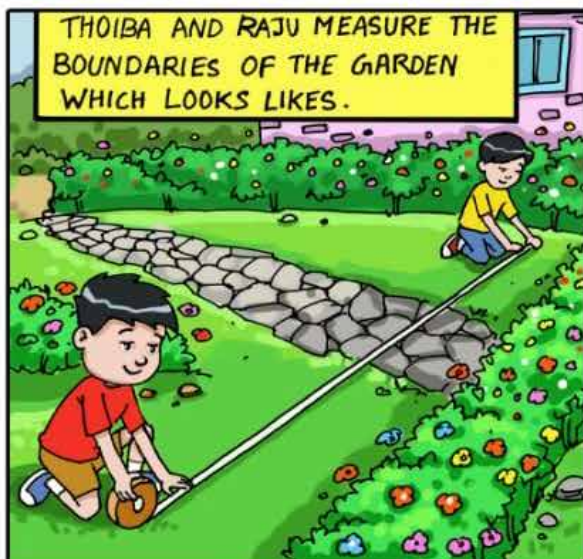
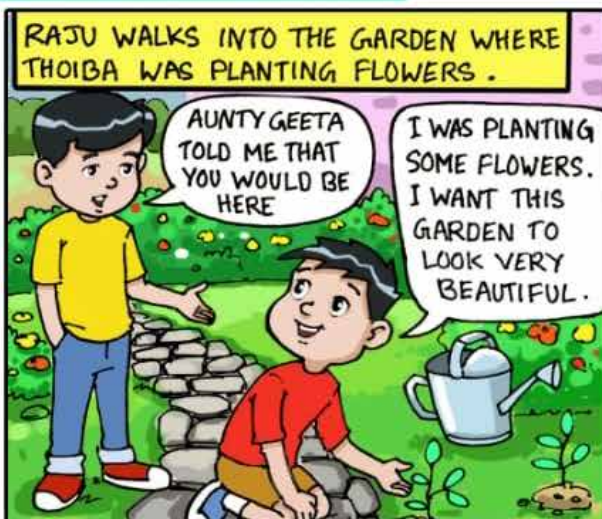


APPLES EVERYWHERE





FENCING THE GARDEN



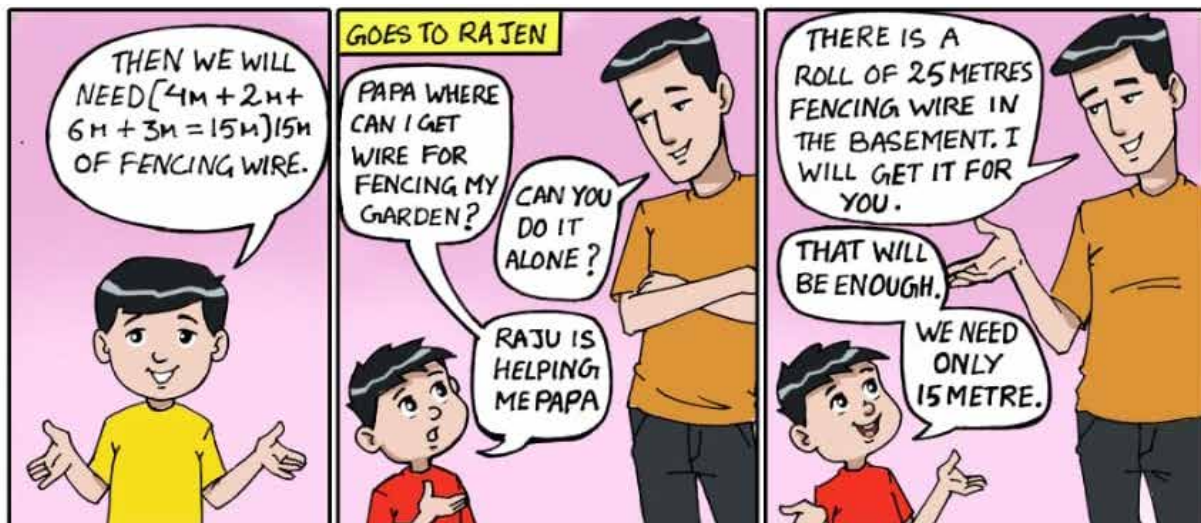


TABLE AND CHAIR

THOIBA AND RAJU RETURNED FROM SCHOOL AT THE BUS STAND.

COME TO MY HOUSE IN THE EVENING. LET'S DO THE ACTIVITIES TEACHER GAVE US.

YES, I WILL BRING SOME COLOUR PAPERS TOO.



IN THE EVENING, THOIBA AND RAJU WERE AT THOIBA'S HOUSE.

LET'S COMPARE THE AREAS OF THE TABLE AND THE CHAIR USING YOUR COLOUR PAPERS.

YES, I WILL CUT SMALL SQUARES OF SIDES 5cm USING THE BLUE AND RED COLOURED PAPER.



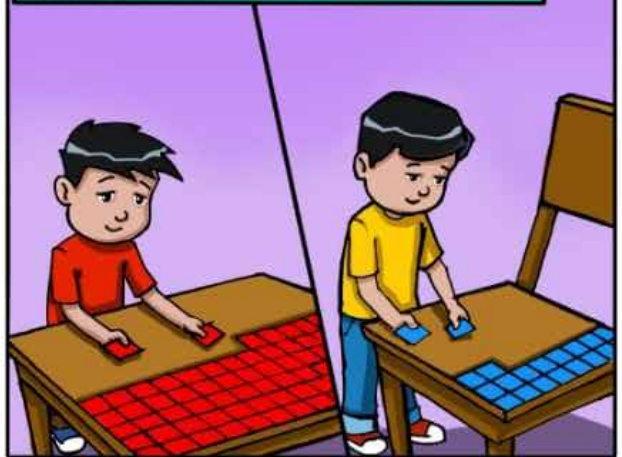
THOIBA AND RAJU CUT THE COLOURED PAPER.

I WILL PLACE THE RED SQUARE ON THE TABLE

AND I WILL PLACE THE BLUE SQUARE ON THE CHAIR.



THOIBA AND RAJU PLACED THE RED AND BLUE SQUARE ON THE TABLE AND CHAIR.



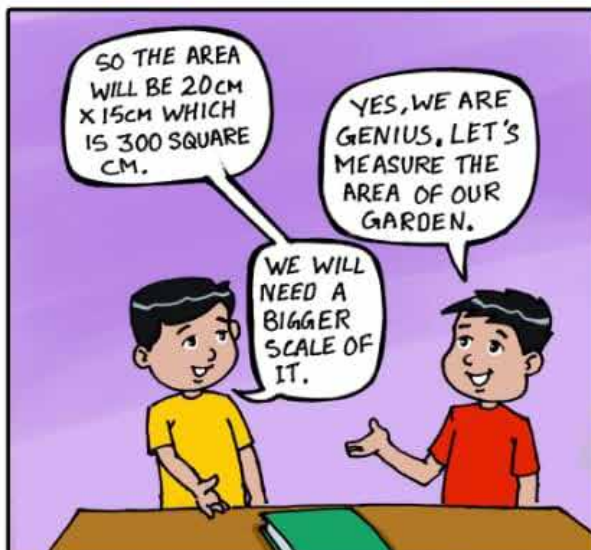
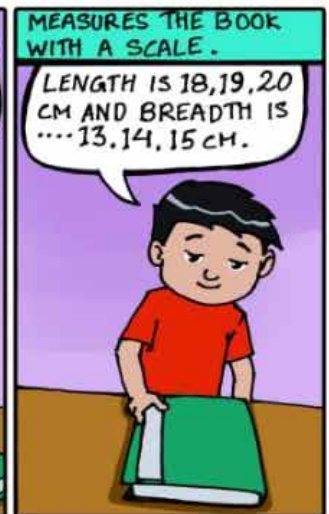
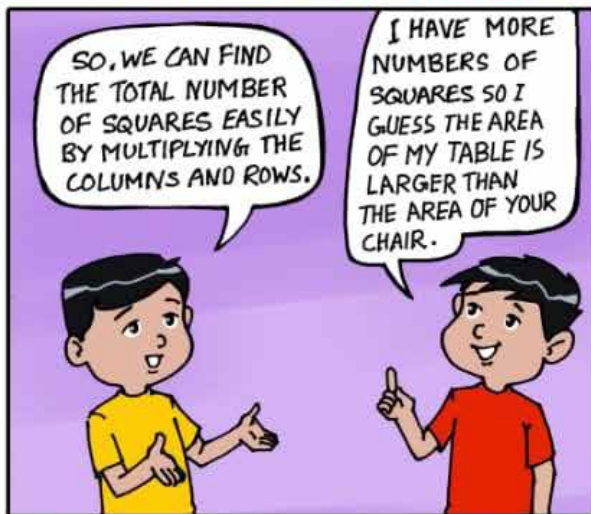
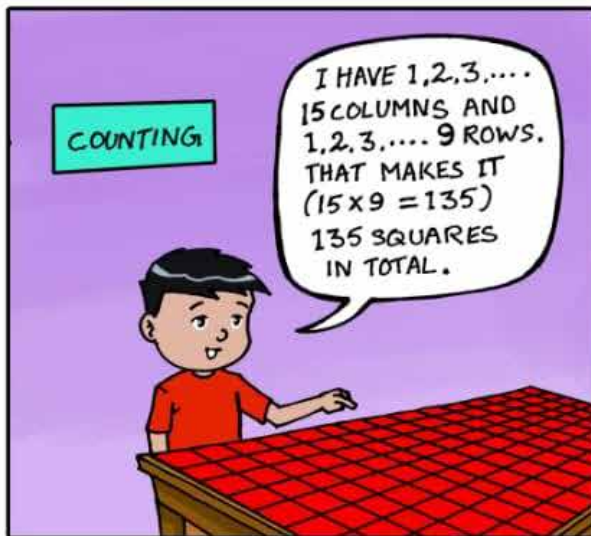
1,2,3,... 80. I HAVE USED 80 BLUE SQUARES. 8 ROWS AND 10 COLUMNS.

1,2,3,... IT'S TOO MANY. I CAN'T FINISH COUNTING.

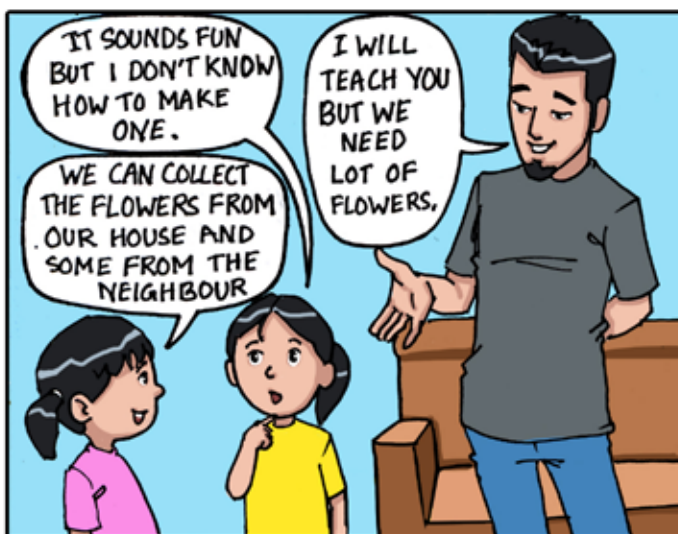
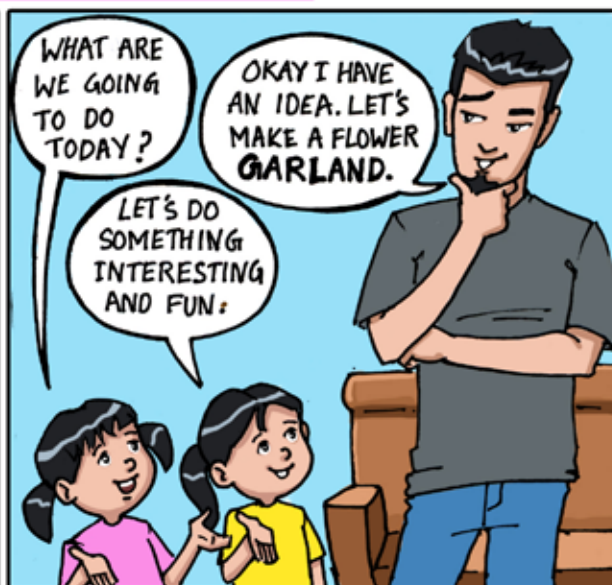
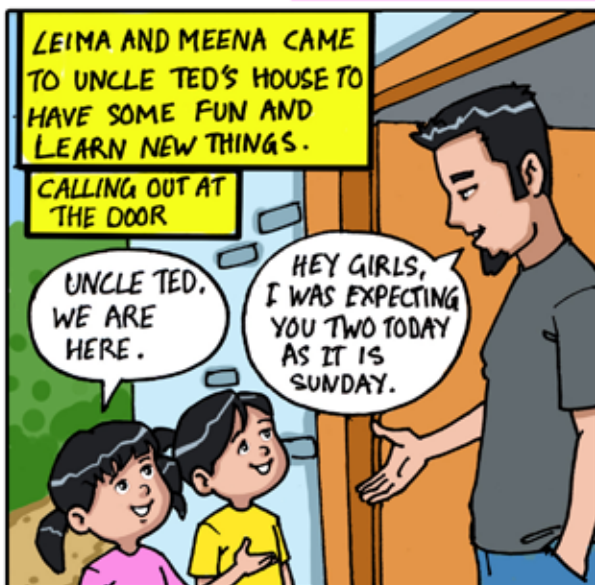


I HAVE 8 ROWS AND 10 COLUMNS. IF WE MULTIPLY THE ROWS WITH THE COLUMNS WE GET THE $8 \times 10 = 80$ SQUARES WHICH IS SAME AS THE NUMBERS OF THE SQUARES USED.

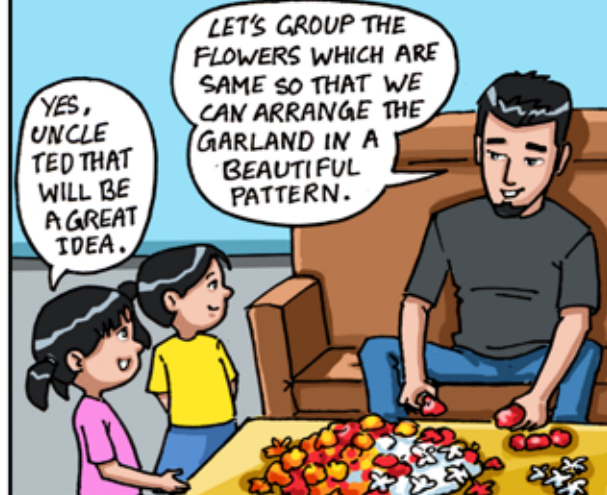




FLOWER GARLANDS



AT TED'S HOUSE, THEY WERE DISPLAYING THE COLLECTED FLOWERS.



TED TAKES OUT A PIECE OF PAPER AND WRITES THE NUMBER OF FLOWERS AFTER GROUPING THEM AND COUNTING.



FLOWERS	NUMBERS
MARIGOLD	42
DALIA	20
JASMINE	14

WE HAVE 42 MARIGOLDS, 20 DAHLIAS AND 14 JASMINES

LET'S START MAKING THE GARLANDS

TED SHOW HOW TO MAKE AND LEIMA AND MEENA FOLLOWS.

I WILL USE ONLY MARIGOLD

I LIKE JASMINE MORE, SO I WILL USE ONLY JASMINE.

