MerryMath-V

A Textbook of Mathematics for Class 5

The Jammu and Kashmir State Board
of School Education Jammu/Srinagar

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Foreword

Sequel to up gradation of academic curricula, a process of review and revision has been undertaken by the Jammu and Kashmir State Board of Education to bring at par the academic standard in the light of the guidelines laid down under National Curriculum Framework-2005.Great emphasis has been laid at the primary state of mathematics which has been handled in a way which permits a learner to proceed from concrete to abstract to consolidate and expand the daily experiences of the child. A frugal attempt has been made to develop Mathematical understanding and thinking in the learner and to infuse in the child the spirit of solving problems and challenges that would inculcate him to deal with underlying concepts and ideas. We must recognize given space time and freedom children generate new knowledge by engaging with information passed on to them by adults. Treating the prescribed textbook as sole bases of examination is one of the key reasons why other resources and sights of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not a receives of fix body of knowledge.

However, writing a book for any class is not the final word we are acceptable to suggestions and changes. It is my sincere appeal to the stakeholders particularly the teachers and the parents to come up with their valuable opinion and if found worthwhile, it will be incorporated in the next edition.

I am highly thankful to the subject experts who facilitated us with review/revision of the textbook of Mathematics. I thank Prof. Veena Pandita, Secretary, JKBOSE for supervising the review of this textbook.

I place on record my appreciation for Academic and Curriculum Development Research wing particularly Ms. Kaneez Fatima, Director, Academics and Joint Secretary, Publication, Ms. Aaliya Qayoom, Academic Officer for Mathematics, K.D. for brining in revised addition of the textbook.

Prof. Zahoor Ahmad Chatt
Chairman
Jammu and Kashmir
State Board of School Education.

Acknowledgement

The National Curriculum Framework (NCF) -2005, recommends that children's life at school must be linked with the life outside the School. This policy is a departure from the previous legacy of rote learning which dominates our present system of education resulting in a major gulf between the school, home and community. The textbook for Mathematics Merry Math V has been prepared strictly in compliance with N.C.F.-2005, which signifies the attempt to implement the basic idea behind it. The book contains units and chapters which have been devised and developed in view of local specific as well as keeping the imaginative powers of our young budding scholars ignited. While developing the book due care has been taken by the experts to lower the stress and strain and the psychic fear of the subject and make mathematics amendable and pleasurable. We hope these measures will take us significantly further in the direction of a child centered system of education. Syllabus designers have tried to address the problem of curriculum burden by restructuring and reorienting knowledge at different stages with greater considerations for child physiology and the time available for teaching.

Jammu and Kashmir State Board of School Education thanks the following subject experts for their review/revision of this textbook.

1. Mr. Showkat Ahmad Zargar (Associate Professor) S. P. College, Srinagar,
2. Mr. Mujeeb Kawoosa, Associate Professor, Amar Singh College, Srinagar,
3. Mr. Mohammad Shafi, Sr. Lecturer, GHSS, Amira Kadal, Srinagar,
4. Mr. Kounsar Abdullah Bhat, Sr. Lecturer, GBHSS, Pattan, Baramulla,
5. Mr. Mohd Yousuf, Sr. Lecturer, GHSS, Takana, Pulwama,
6. Mr. Ajmer Singh Manhas, Sr. Lecturer, Jammu,
7. Mr. Fayaz Ahmad, Sr.Lecturer, SIE, Srinagar,
8. Mr. Bhupinder Gupta, Sr. Lecturer, Srinagar,
9. Mr. Mohd. Hussain Malla, Master, GHS, Nowgam, Bandipora,
10. Mr. Arshad Hussain Zargar, Teacher, GHS, Kulgam,
11. Mr. Bashir Ahmad Sheikh, Teacher, GMS, Charangam, DIET, Beerwah,
12. Mr. Showkat Ahmad, Teacher, GMS, Wanigam, Pattan,
13. Mr. Reyaz Ahmad, Teacher, GMS, Sumbal.

We are gratefully acknowledged to National Council of Education and Research Training (NCERT) for providing the material of the book.

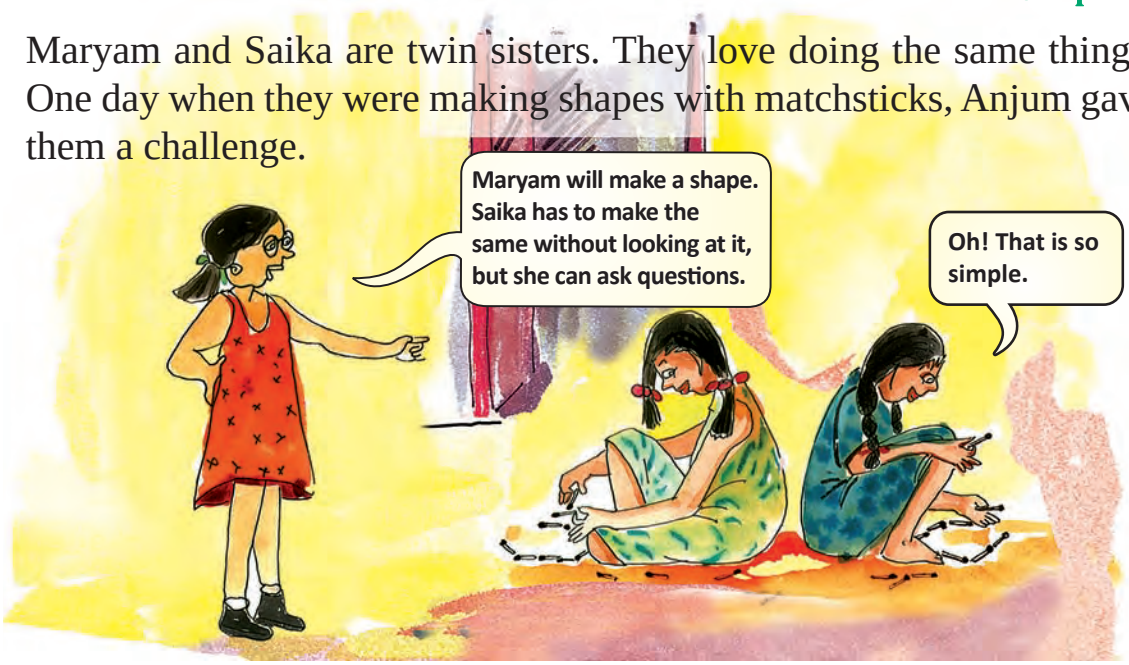
Ms. Kaneez Fatima
Director Academics

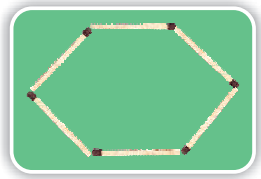
Contents

Shapes and Angles

Chapter 1

Maryam and Saika are twin sisters. They love doing the same things. One day when they were making shapes with matchsticks, Anjum gave them a challenge.

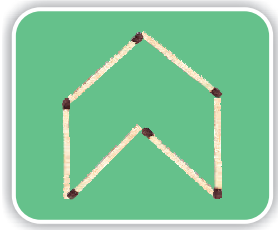


Maryam made this shape. 

Saika- Is it a closed shape or an open shape?

Maryam- It is a closed shape.

Saika – How many sides are there?



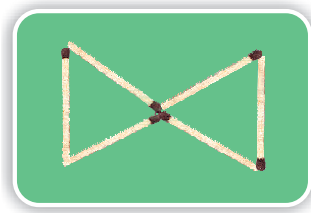
Maryam – It has 6 sides.

Now you give the answers.

Is it a closed shape? _____.

Does it have six sides? _____.

But it is not the same as the one made by Maryam. So Saika tried again.



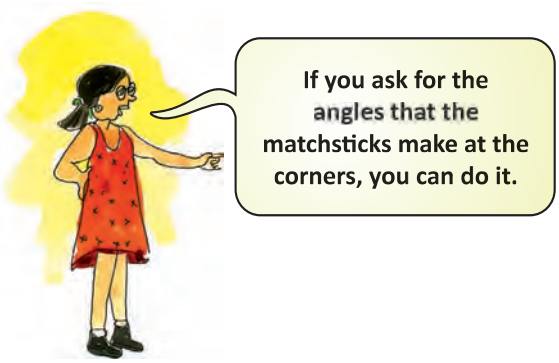
This is what she made.

Is it a closed shape with 6 sides? _____.

Is it the same made by Maryam? _____.

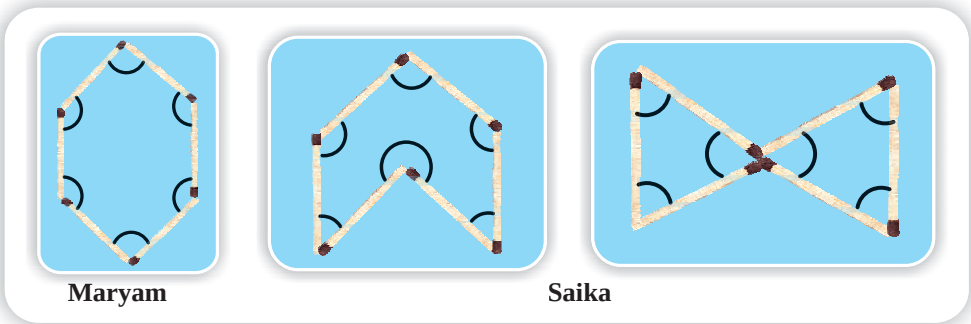
Is there some way to say in what way these shapes are different?

❖ Saika is now tired of trying and asks Anjum what to do.

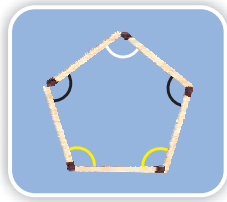


❖ Look at the angles marked in these shapes.

Can you the difference?



Let Us Do These



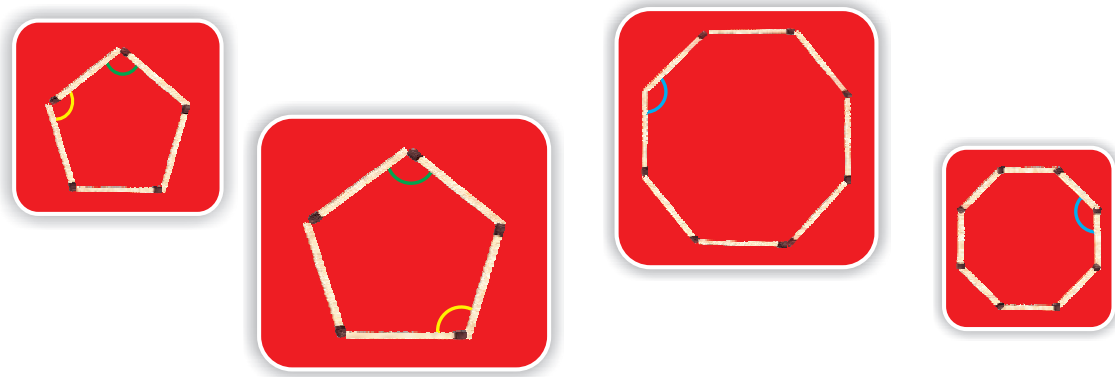
1. Look at the shape and answer.

❖ The angle marked in _____ colour is the biggest angle.

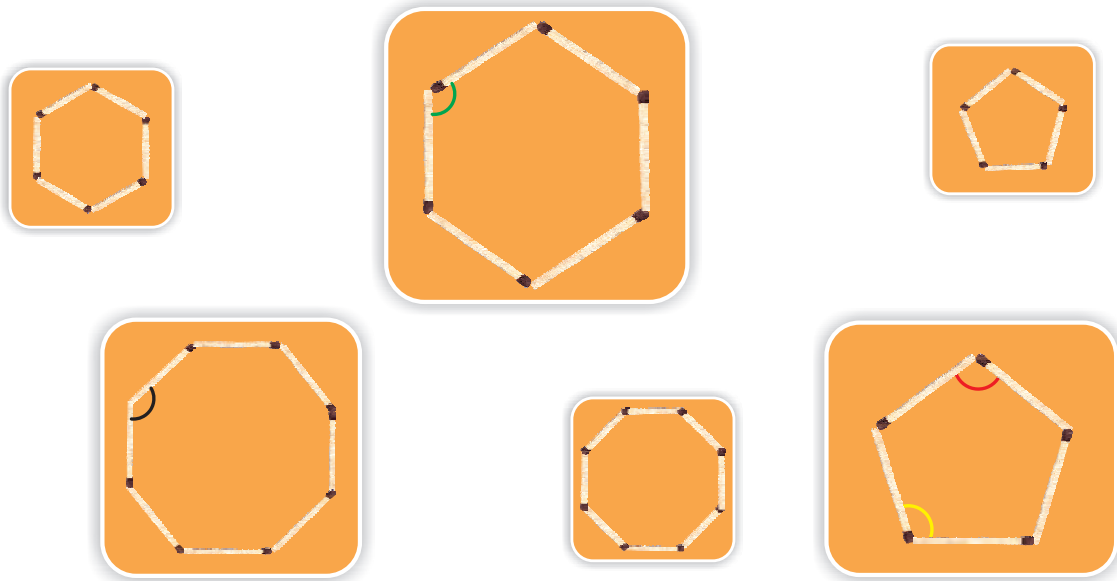
2. [a] Are the angles marked with yellow equal? _____

   [b] Are the marked with green equal? _____

   [c] Are the angles marked with blue equal? _____

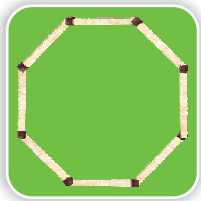


3. Four different angles are marked in four colours. Can you find other angles which are the same as the one marked in red?

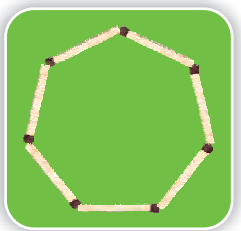


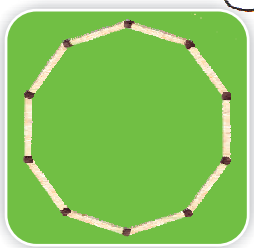
4. How many different shapes can you make by changing the angle between the matchsticks in each of these? Try.

(a) 
4 matchsticks

(b) 
8 matchsticks

(c) 
5 matchsticks

(e) 
7 matchsticks

(f) 
10 matchsticks

5. Two line segments with a common end point form an angle.

(a) Draw five examples of angles that you can see in your classroom

(b) An angle is formed by _____ rays.

(c) The common end point is called the _____ of an angle.

(d) The symbol used for an angle is _____.

(e) Name the given angle?

(f) BA and BC are called _____of the angle.

(g) Draw an angle and name it in three different ways.

Answers:

5 (a) Corner of a Book, Duster, Floor, Table, Stool etc.

(b) Two (c) Vertex (d) ∠ (e) ∠ABC

(f) Arms (g) ∠ABC or ∠CBA or ∠A or 1 etc.

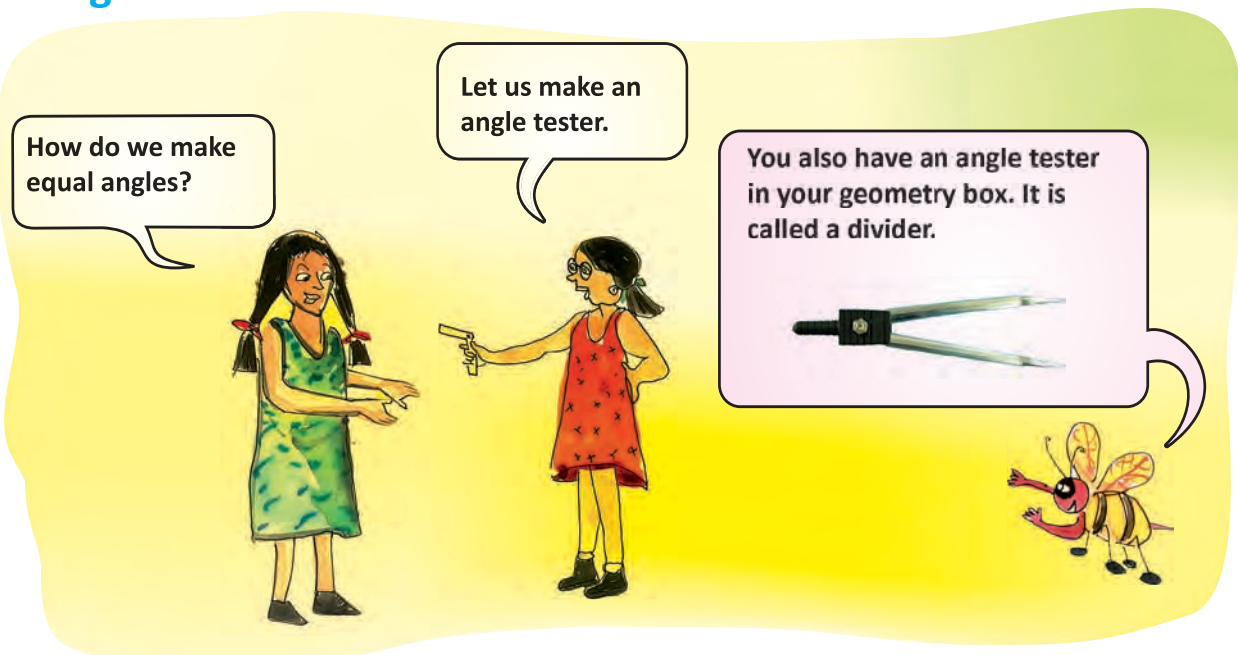
Matchstick Puzzles

4. Make 8 triangles using 6 matchsticks. Try!
5. Take 8 matchsticks and make a fish like this. Now pick up any 3 matchsticks and put them in such a way that the fish now starts swimming in the opposite direction. Did it?

6. Using 10 matchsticks make this shape. Pick up 5 matchsticks and put them in such away that you get the shape of a house.

If you have not been able to solve these then look for the answers on page 14.

Angle Tester

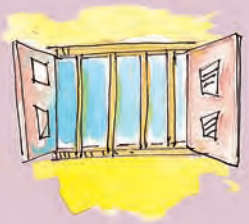


- ❖ Cut two strips from a cardboard sheet.
- ❖ Fix them with a drawing pin or such that both the strips can move around easily.

Ulfat and Gazala went all around with the angle tester to look for different angles in their class.

Ulfat tested the angle of the Math's book and the pencil box.

❖ Go around with your tester and draw here those things in which tester opens like the letter L. Are you sure they are all right angles.



Practice Time

1. Look at the angles in the pictures and fill the table.

Angle	Right Angle	More than a Right Angle	Less than a Right Angle
			✓
			
			
			
			

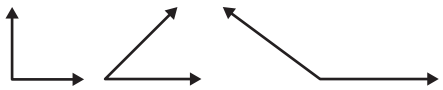
2.

(a) Give three examples of a right angle from your classroom.

(b) Draw a right angle, less than a right angle and greater than a right angle

Answers:

(a) Corner of a table, Black board, Duster etc.

(b) 

Activity

a. Take a square sheet of paper. 

b. Fold it in half. 

c. Fold it once more and press it. 

d. Open the last fold so that the sheet is folded in half. 

e. Take one corner and fold it to meet the dotted line. 

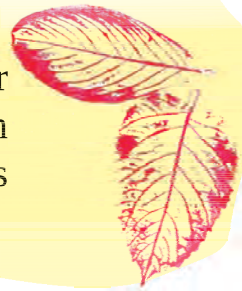
On the paper you will find lines making a right angle, an angle less than a right angle and an angle more than a right angle.

Look for each of the angles and mark them with different colours.

Angle Garden

Activity

Collect some leaves from the garden. Colour each leaf and print it. Look at the angle on the leaves. Which of them are more / less than a right angle?



- ❖ Look for the birds which have beaks with small angles.
- ❖ In the picture mark angles between the two branches. Which two branches have the biggest angle?
- ❖ Write 3 names using straight lines and count the angles.

Name	Number of right angles	Number of angles more than a right angle	Number of angles less than a right angle.

Activity

a. Put 10 Merry math books on top of each other. Keep one book slanting to make a slide.

b. Now do these with six books.

- ❖ Roll a ball from the top. From which slide does the ball roll down faster?
- ❖ Which slide has the smallest angle?

These are two slides in a park.

- ❖ Which slide has a larger angle?
- ❖ Which slide do you think is safer from the little boy? Why?

Changing Shapes

❖ Things you need – used (or new) matchsticks. Piece of rubber tube used in cycle valves.

i. Clean the black end of the matchsticks.

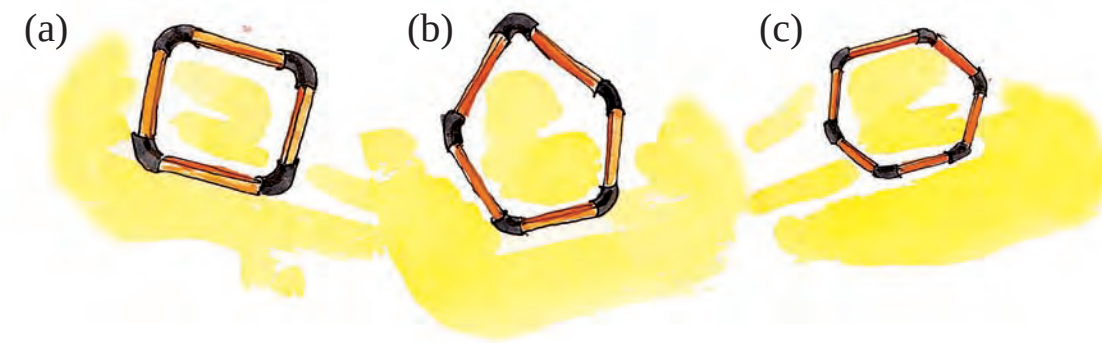
ii. Cut small pieces of the tube (about 1 cm long).

iii. Push two match sticks into each end of a tube piece.

iv. Add more matchsticks to from a triangle.

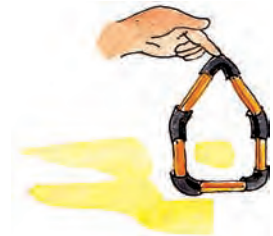
Now make these 4, 5, 6 sided shapes by using tube pieces and matchsticks.

(a) (b) (c)

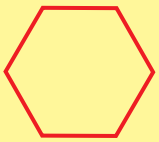
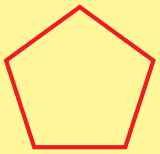
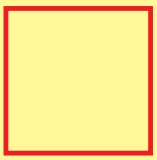


❖ Find out how many angles are there in each of these shapes. Mark them.

Now push each shape downwards with the tip of your finger?



❖ Find out and write your results in the table given.

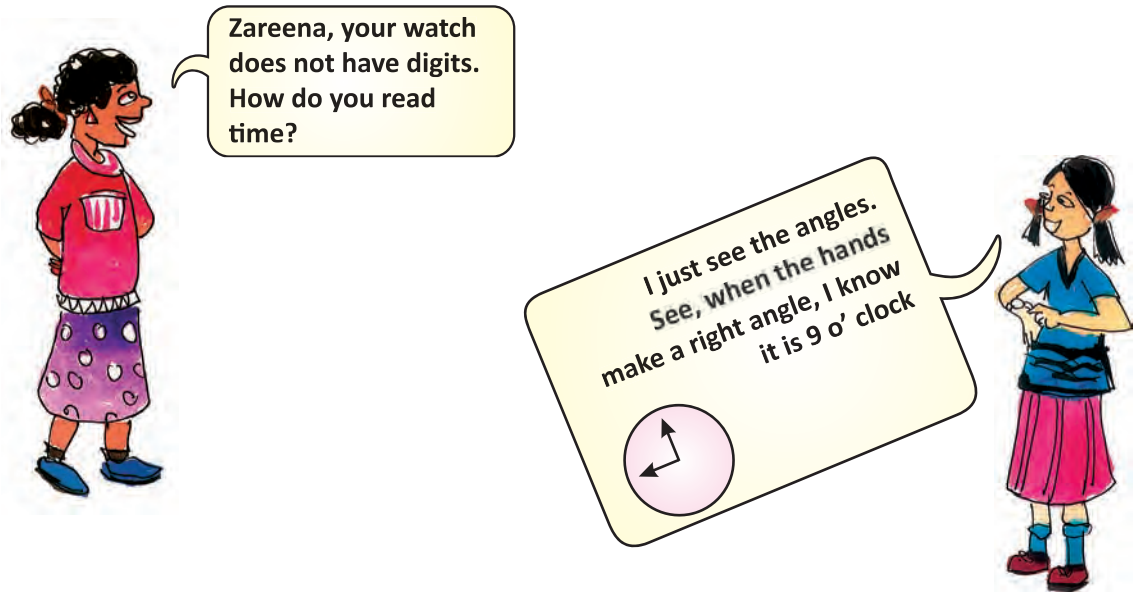
Shape	Change in angle Yes/ no
	
	
	
	

Shapes and Towers

Look for triangles in the pictures below.

- From the activity 'Changing Shapes' can you guess why triangles are used in these towers, bridges etc?
- Look around and find out more places where triangles are used.

Angle and Time



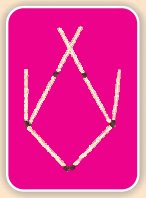
❖ There are many times in a day when the hands of a clock make a right angle. Now you draw some more.

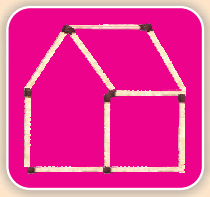
❖ Write what kind of angle is made by the hands at these times. Also write the time.

❖ Draw the hands of the clock when they make an angle which is less than right angle. Also write the time.

Answers: Matchstick Puzzles (Page 5)

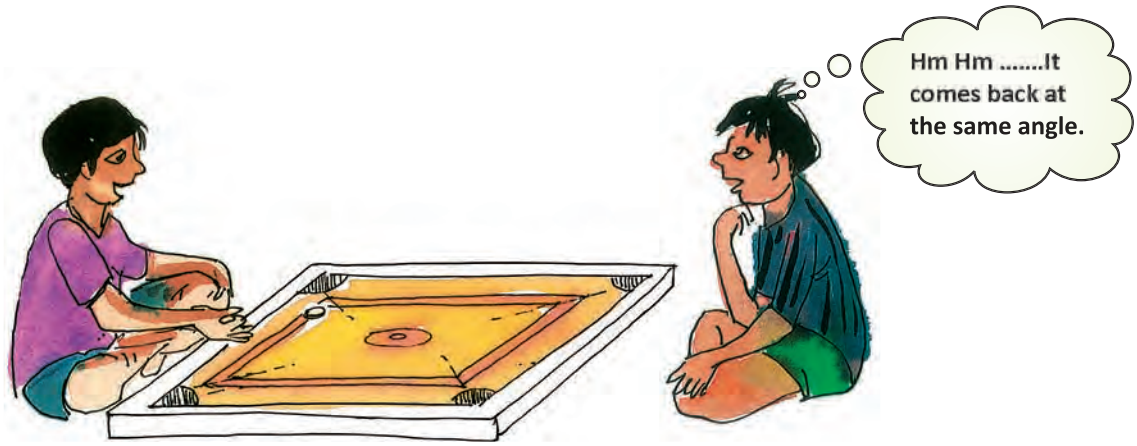
1. 

2. 

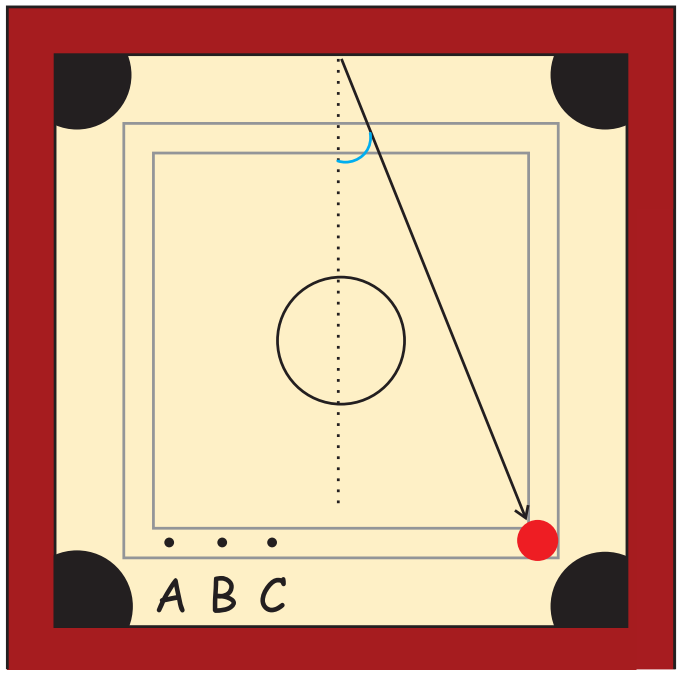
3. 

Degree Clock

Amir and Kamran are playing carom board. Amir hit the sticker.



❖ In the picture three points A, B and C are shown. Draw a line to show from which point Kamran should hit to get the queen. ___



Fill in the blank spaces.

Q.NO.1. (a) An angle is measured in _____.

(b) Degree is written as _____.

(c) A _____ angle is called a right angle.

(d) $\frac{1}{2}$ of a right angle is _____.

(e) 2 times of a right angle is equal to _____.

Q.NO.2. Fill in the blanks:

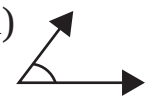
(a) An acute angle is more than 0˚ but less than _____

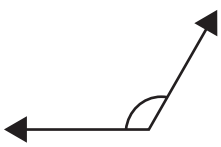
(b) A _____ angle is equal to 90˚.

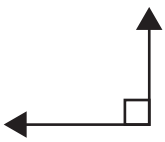
(c) An obtuse angle is more than 90˚ but less than _____.

(d) Two right angles are equal to a straight line then straight angles measures exactly _____.

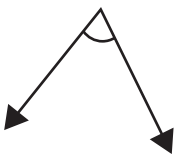
Q.NO.3. Identify the following angles as acute, obtuse, right or straight angles.

(a) 

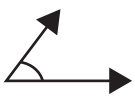
(b) 

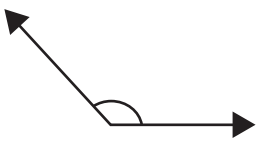
(c) 

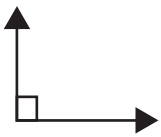
(d) 

(e) 

Q.NO.4. What is the measure of these angles?

(a) 

(b) 

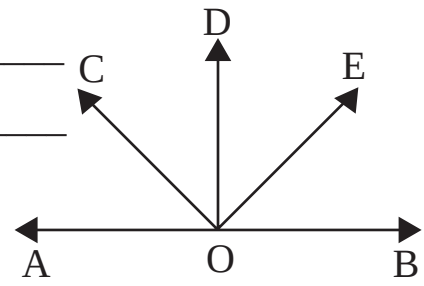
(c) 

Q.NO.5. Use D (Protractor) to measure the angles in the figure.

(a) AOC = _____ (b) AOE = _____

(c) COD = _____ (d) BOE = _____

(e) BOC = _____



Q. No 6 Construct the following angles with the help of your protractor.

(a) 50˚ (b) 120˚ (c) 90˚ (d) 60˚ (e) 45˚ (f) 160˚

Answers:

Q.NO.1:-

(a) Degree (b) 0˚ (c) 90˚ (d) 45˚ (e) 180˚

Q.NO.2:-

(a) 90˚ (b) Right angle (c) 180˚ (d) 180˚

Q.NO.3:-

(a) Acute angle (b) Obtuse angle

(c) Right angle (d) Straight angle

(e) Right angle

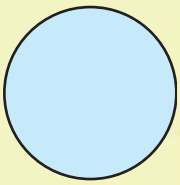
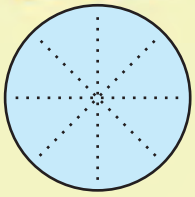
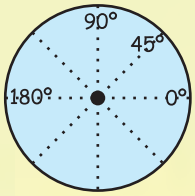
Q.NO.4:-

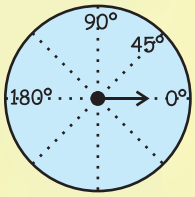
(a) Less than a Right angle (b) Greater than a Right angle

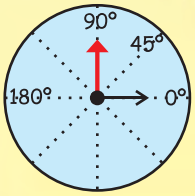
(c) Right angle

Activity:

Making a Degree Clock

1. Cut a circle out of paper. 
2. Fold it into half. 
3. Fold it once again in to a quarter 
4. Fold in once more. 
5. Open the paper. You will see lines like this. 
6. Now mark 0˚, 45˚ 90˚and 180˚ as shown. 

7. Paste it on an old card.
8. From the centre draw one hand. 

9. Make a red hand with a thick paper and fix it to the centre with a drawing pin, so that it is free to move. 

You degree clock is ready.

- ❖ Use your degree clock to measure the right angle of your pencil box. _____ is the measure of the right angle.
- ❖ Can you guess how many degrees is the angle which is ___
- ❖ $\frac{1}{2}$ of a right angle _____
- ❖ $\frac{1}{3}$ of a right angle _____

- 2 times of a right angle _____
- Measure the angle from where Junaid should hit the striker on page 15.

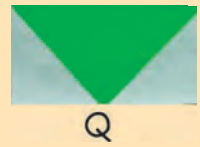
Angles in a Paper Aeroplane

1. Take a square sheet of paper.

2. Fold it in half and open it.

3. Fold the corners to the centre. Your paper looks like this.

4. Fold the green triangle such that P touches Q.



5. Fold the top two corners of this rectangle along the dotted lines.

6. Your paper will look like this. There is a small triangle in the picture which has to be folded up.

7. Turn it over and fold it in half along the dotted line.

8. Now, to make a wing fold the yellow edge over the red edge.

9. Turn it and do the same on the other side as well.

Your plane is ready to fly. How well does it fly?

❖ Find the angles of 45˚and 90˚ when you open your plane.

Angles With Yoga

Umar is doing Yoga. These are the pictures of different 'Asanas' he does everyday.

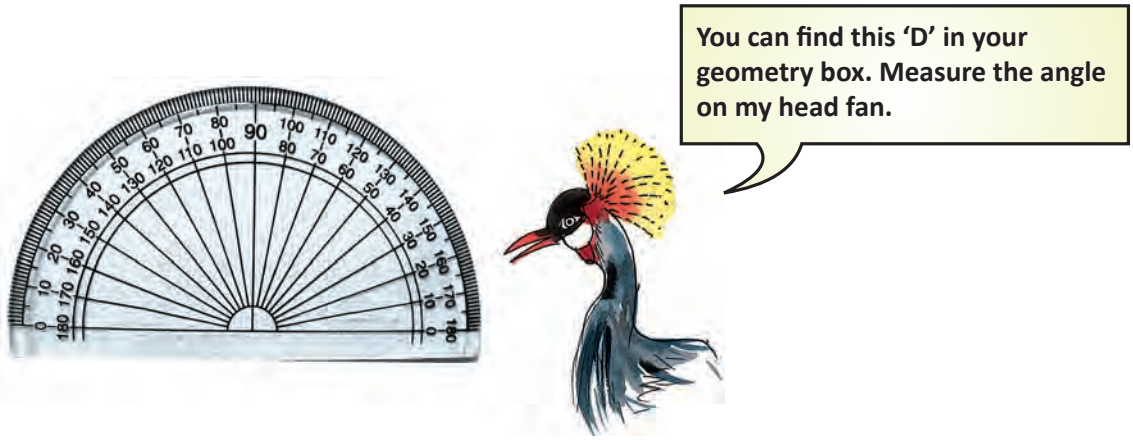
❖ Measure as many angles as you can make by different parts of the body while doing 'Asanas'.

The D Game

You can play the 'D' game with your friends. You draw an angle. Your friend will guess the measure of that angle. Then you use your 'D' to measure it. The difference between the measured angle and the guess will be your friends score. The one with the lowest score will be the winner.

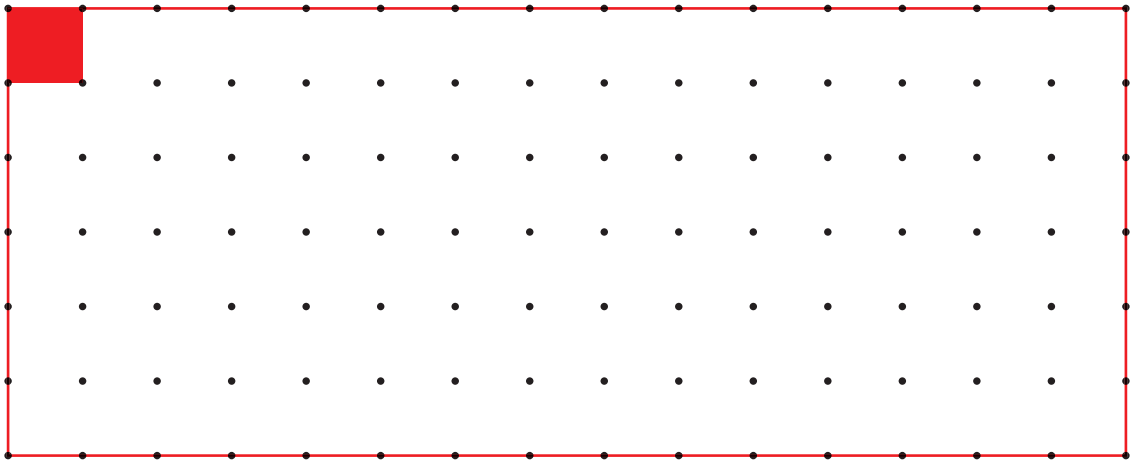
Come on, Play!

Draw Angle	Guess	Measure	Score

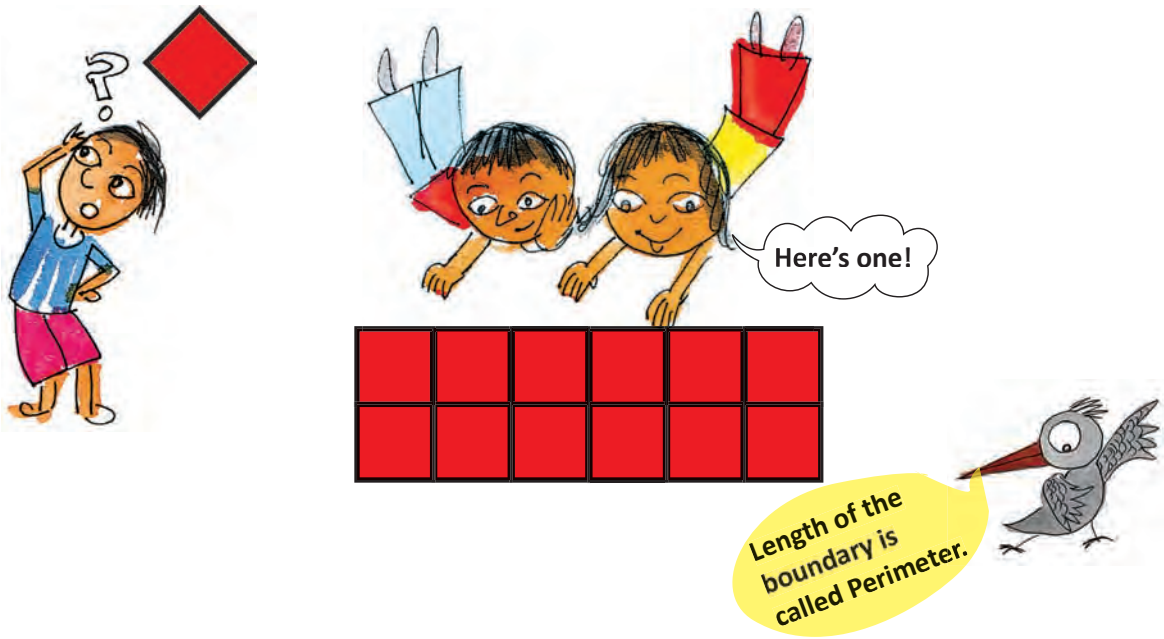


How Many Squares?

Chapter 2



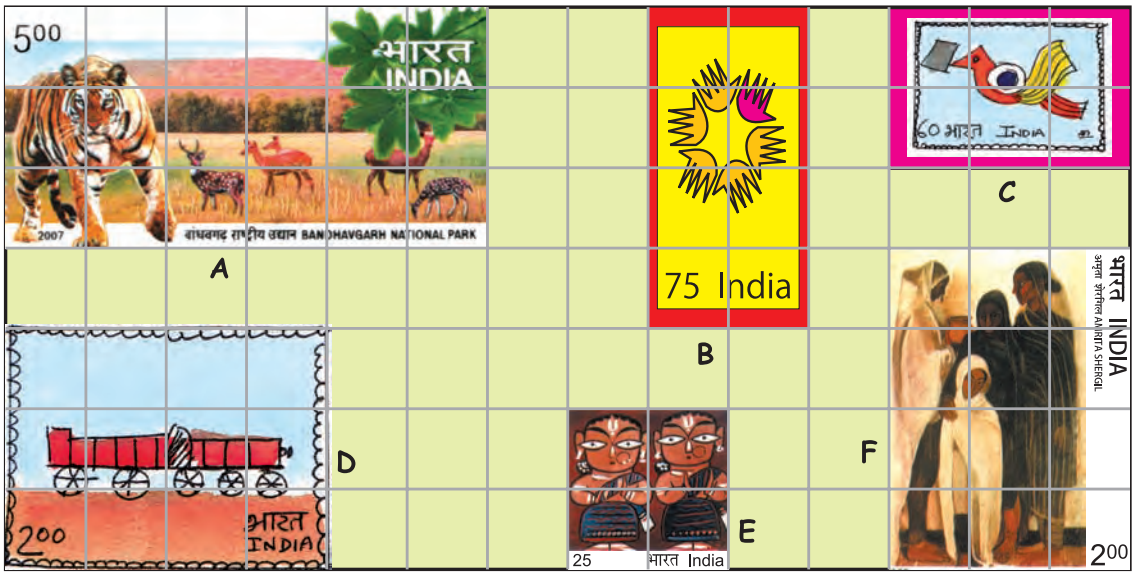
- ❖ Measures the side of the red square on the dotted sheet. Draw here as many rectangles as possible using 12 such squares.
- ❖ How many rectangles could you make? _____



Each rectangle is made out of 12 equal squares, so all have the same area, but the length of the boundary will be different.

- ❖ Which of these rectangles has the longest perimeter?
- ❖ Which of these rectangles has the smallest perimeter?

Measure Stamps



Look at these interesting stamps.

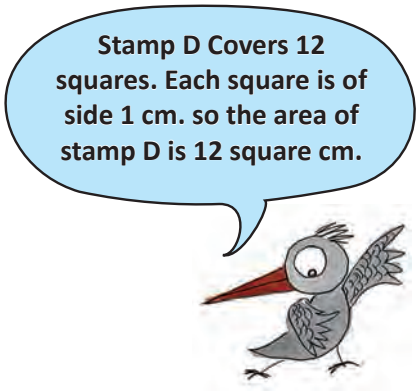
a. How many squares of one centimeter side does stamp A cover? _____

And stamp B? _____

b. Which stamp has the biggest area?

How many squares of side 1 cm does this stamp cover?

How much is the area of the biggest stamp? _____ square cm.



c. Which two stamps have the same area? _____

How much is the area of each of these stamps? _____ square cm.

d. The area of the smallest stamp is _____ square cm.

The difference between the area of the smallest and biggest stamp is _____ square cm.

Collect some old stamps. Place them on the square grid and their area and find their perimeter.

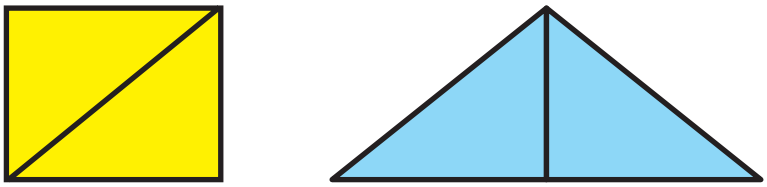
Guess

a. Which has the bigger area — one of your footprints or the page of this book?

b. Which has the smaller area—two five-rupee notes together or a hundred-rupee note?

c. Look at a 10 rupee-note. Is its area more than hundred square cm?

d. Is the area of the blue shape more than the area of the yellow shape? Why?



e. Is the perimeter of the yellow shape more than the perimeter of the blue shape? Why?

How Big is My Hand?

Trace your hand on the squared sheet on the next page.

How will you decide whose hand is bigger - your hand or your friend's hand?

What is the area of your hand? _____square cm.

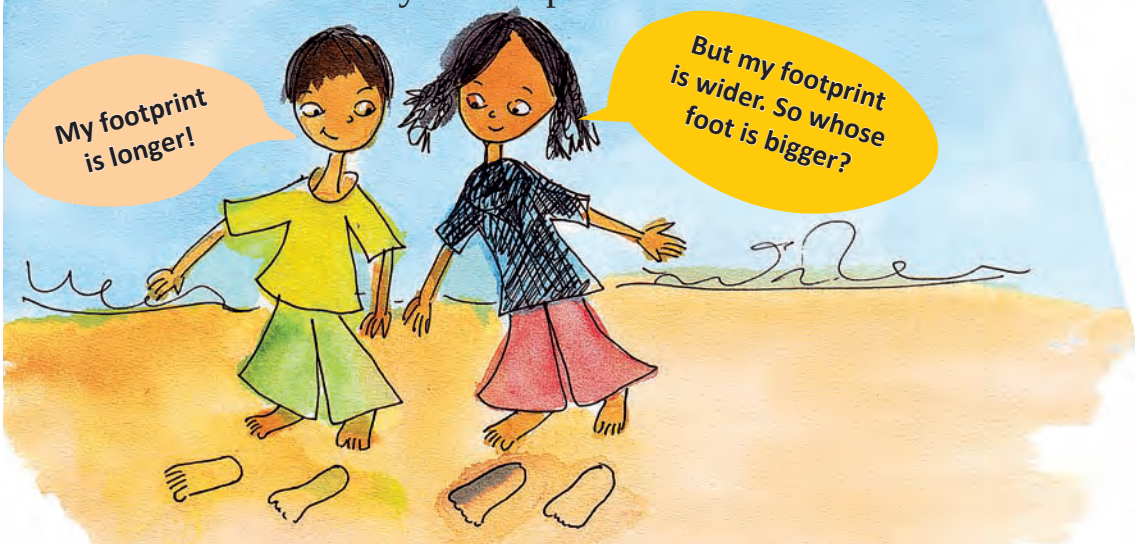
What is the area of your friend's hand? _____ square cm.

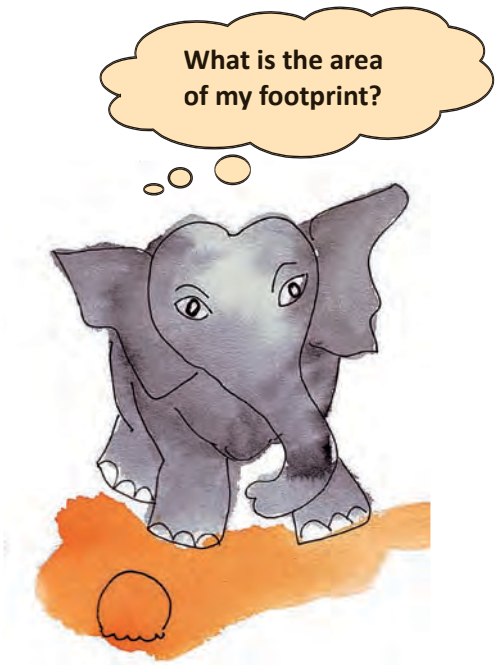
My Foot Prints

- Whose Foot Prints is larger_____ yours or your friend's?
- How will you decide?

Discuss.

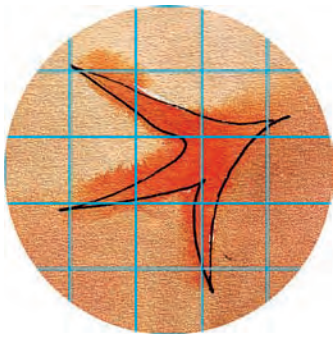
- Is the area of both your footprints the same?

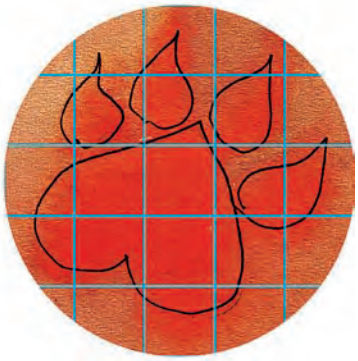




- Guess which animal's footprint will have the same area as yours. Discuss.
- Here are some footprints of animals in actual sizes. Guess the area of their footprints.

Hen

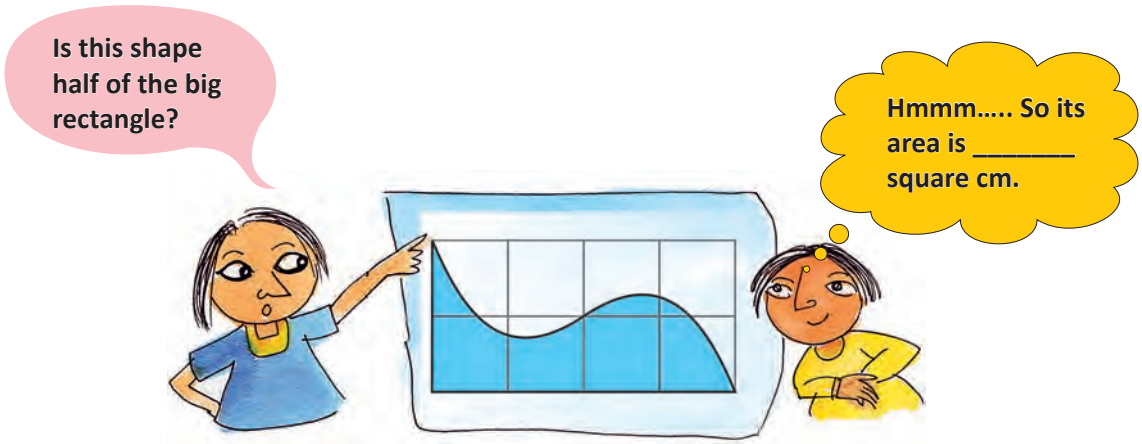




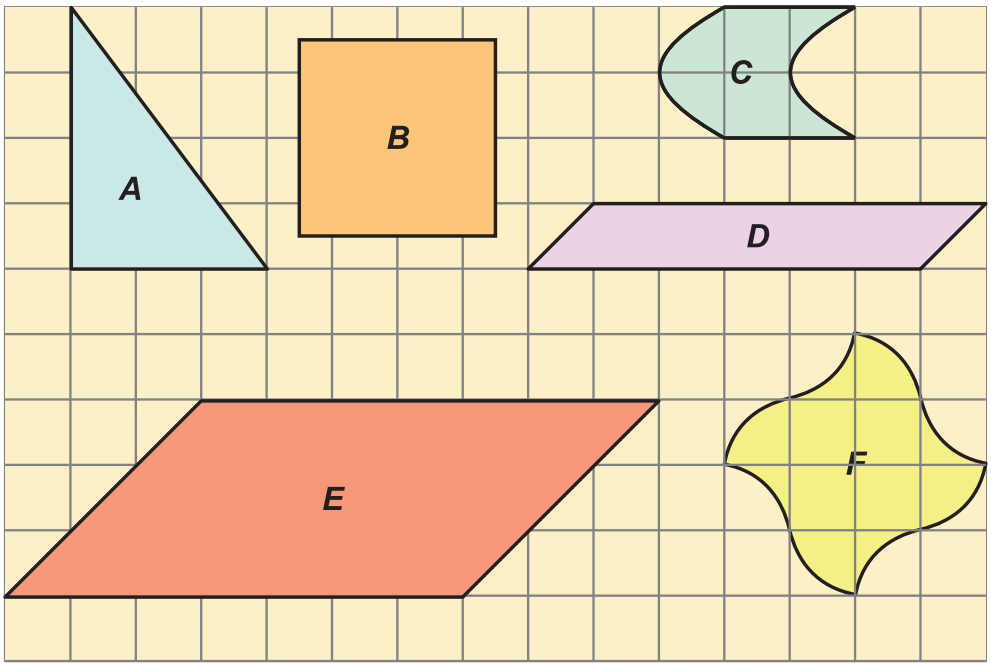
Dog


Make big squares and rectangles like this to find the area faster.

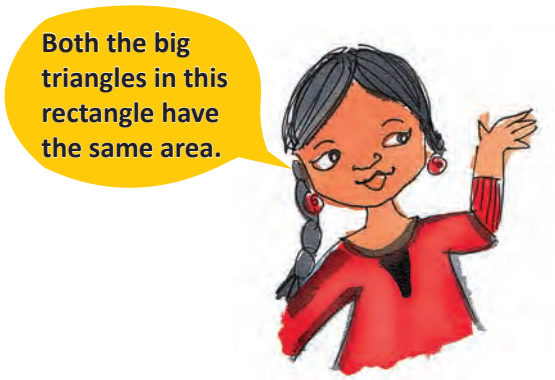
How many squares in Me?



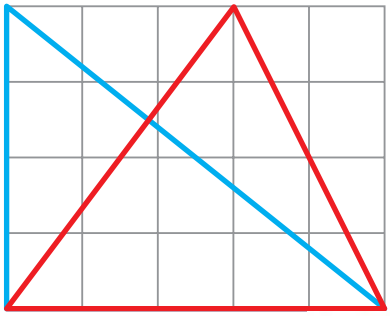
❖ Write the area (in square cm) of the shapes below.



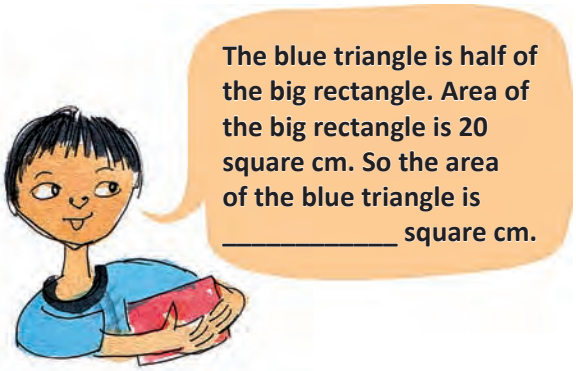
Try Triangles

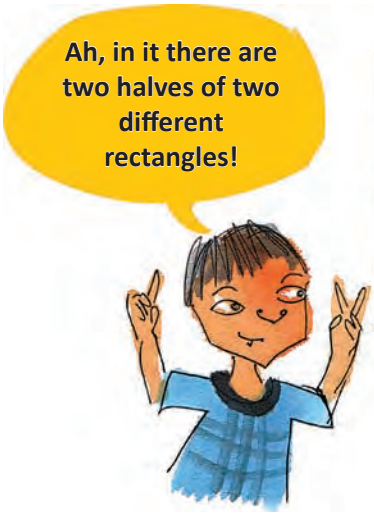


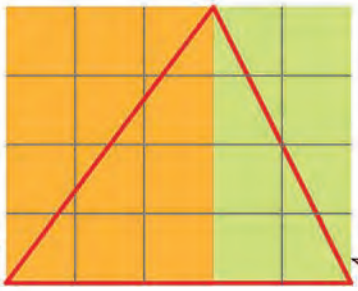
Sakeena

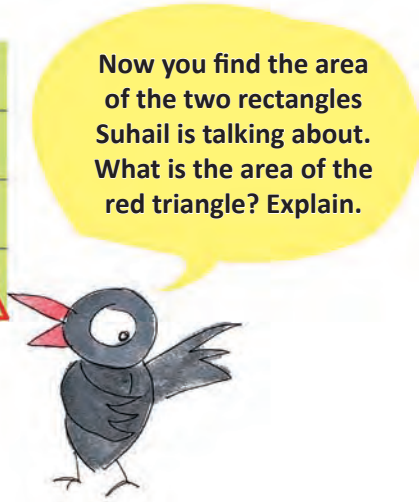


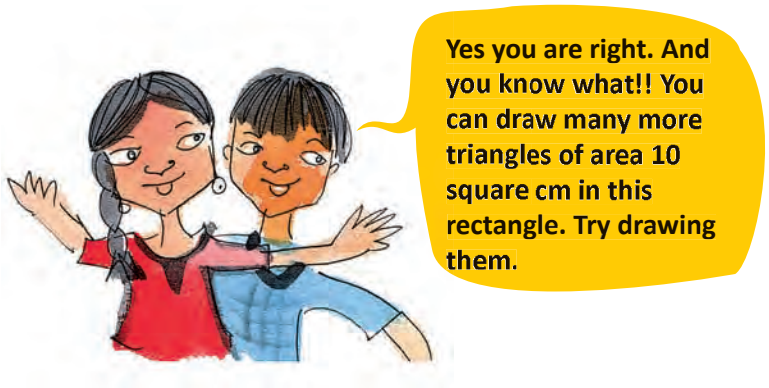
Suhail







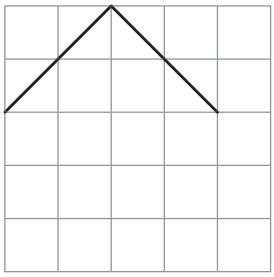




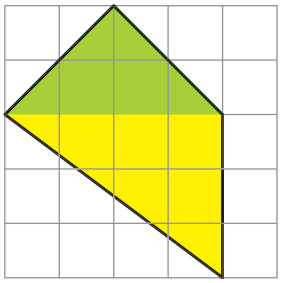
Help Suhail in finding some more such triangles. Draw at least 5 more.

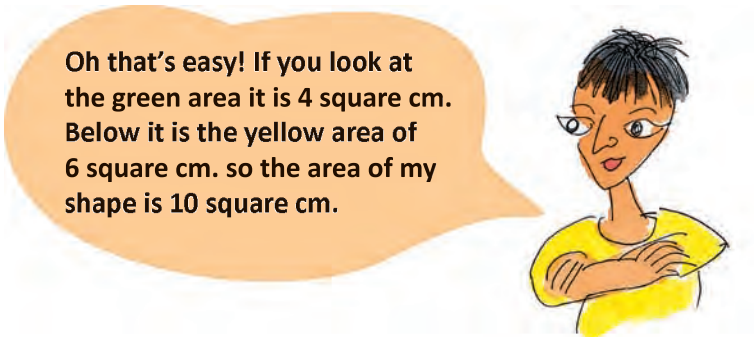
Complete the shape

Tabassum drew two sides of shape. She asked Asif to complete the shape with two more sides, So that its area is 10 square cm.

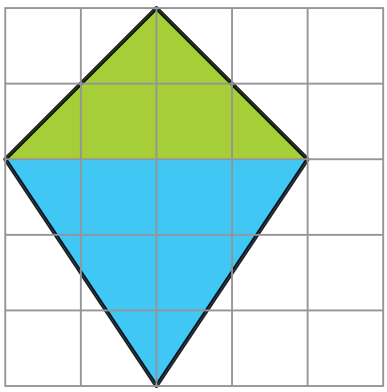


He completed the shape like this





- Is he Correct? Discuss.
- Explain how the green area is 4 square cm and the yellow area is 6 square cm.

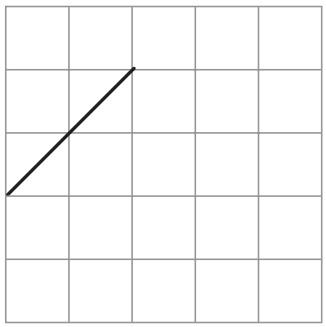


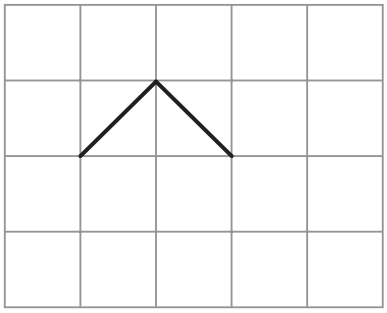
- Is Tabassum correct? How much is the blue area? Explain.
- Can you think of some other ways of completing the shape?
- Try some other ways yourself.
- Now ask your friends at home to solve these.

Practice Time

1. This is one of the sides of a shape.

   Complete the shape so that it area is 4 square cm.

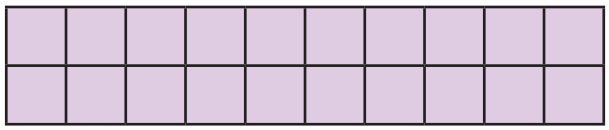




2. Two sides of a shape are drawn here.

   Complete the shape by drawing two more sides so that its area is less than 2 square cm.

3. Here is a rectangle of area 20 square cm.

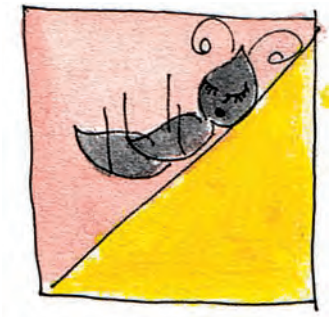


a. Draw one straight line in this rectangle to divide it into two equal triangles. What is the area of each of the triangles?

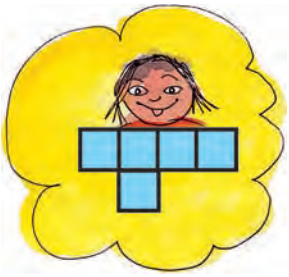
b. Draw one straight line in this rectangle to divide it into two equal rectangles. What is the area of each of the smaller rectangles?

c. Draw two straight lines in this rectangle to divide it into one rectangle and two equal triangles.

- ❖ What is the area of the rectangle?
- ❖ What is the area of each of the triangles?

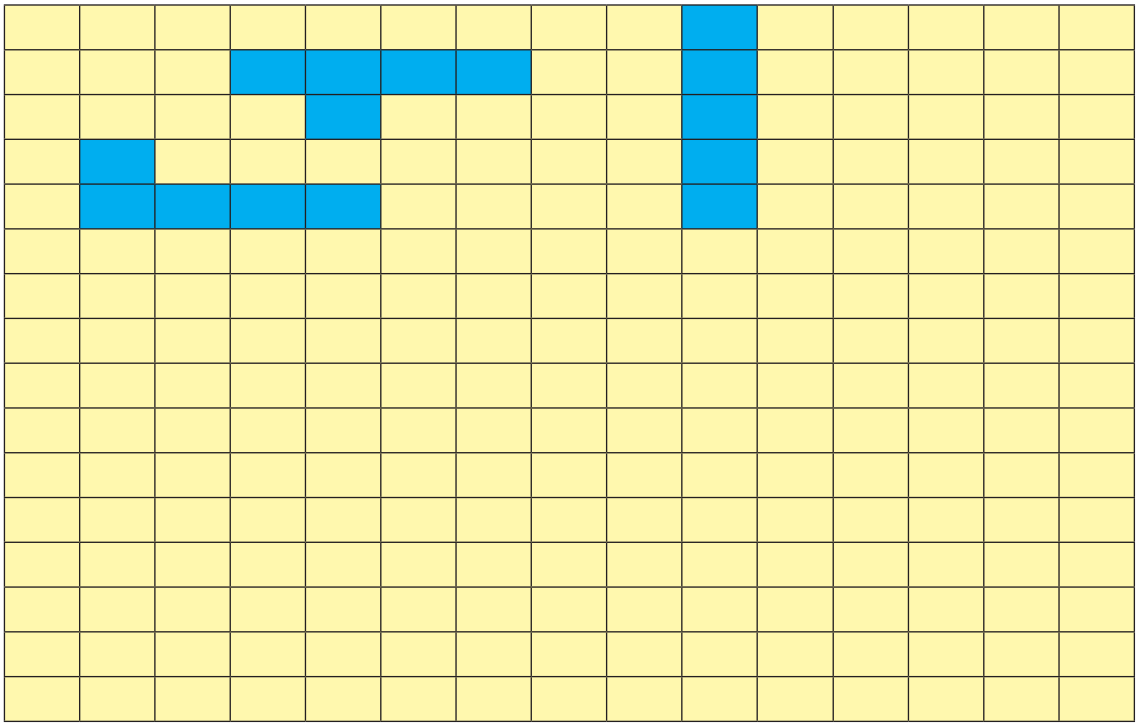


Puzzles with Five Squares



Measure the side of a small square on the squared paper. Make as manyshapes as possible using 5 such squares.

Three are drawn for you.



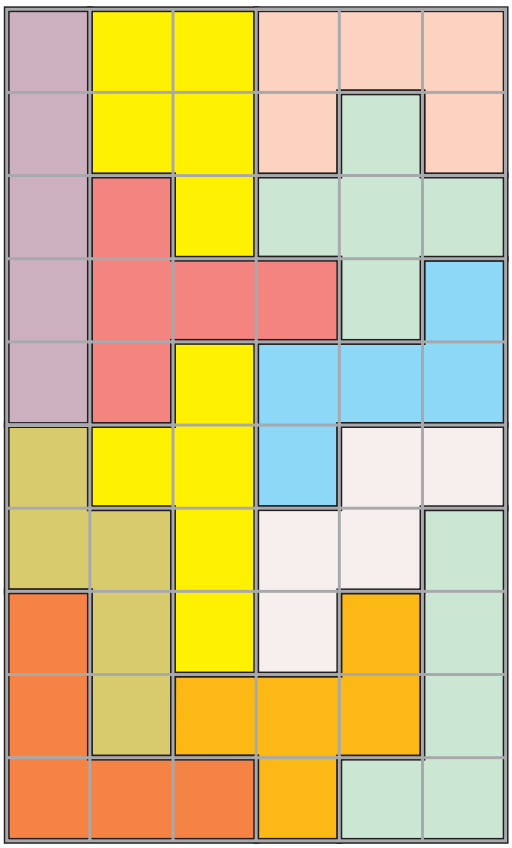
a. How many different shapes can you draw? _____

b. Which shape has the longest perimeter? How much? _____cm.

c. Which shape has the shortest perimeter? How much? _____cm.

d. What is the area of the shapes? _____ square cm. That's simple!

Did you get all the 12 shapes using 5 squares?



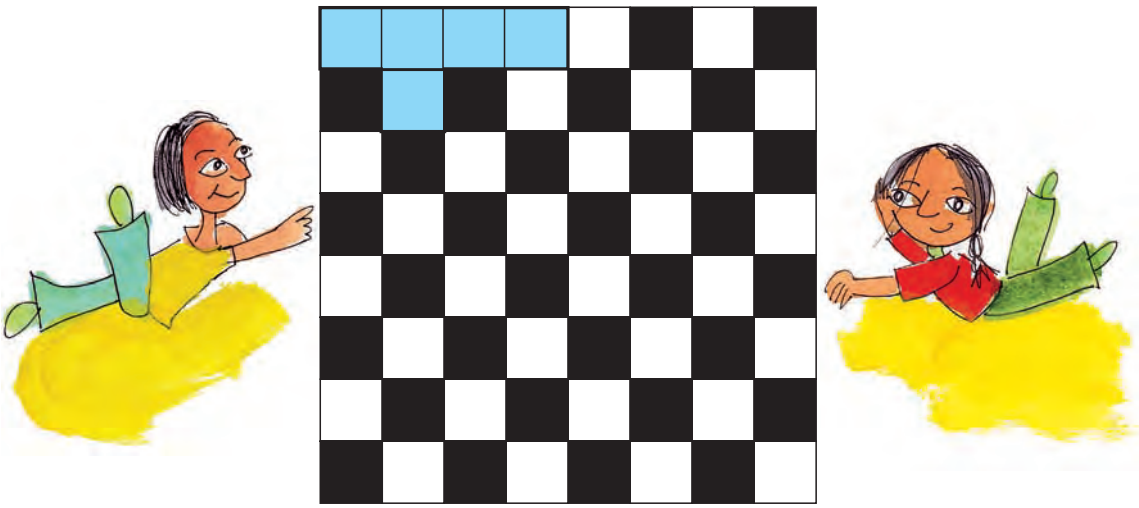
All 12 shapes are arranged here to make a rectangle. This is a 10 × 6 rectangle as there are 10 rows and 6 columns. You will be surprised to know that there are more than 2000 ways in which these shapes make a 10 × 6 rectangle.

Draw all the 12 shapes on a sheet of cardboard and cut them.

Try to arrange your 12 shapes in some other way to make a 10 × 6 rectangle. Could you do it?

Game Time

Here it is a chessboard. Play this game with your partner, with one set of 12 shapes.



The first player picks one shape from the set and puts it on the board covering any five squares.

The other player picks another shape and puts it on the board, but it must not overlap the first shape.

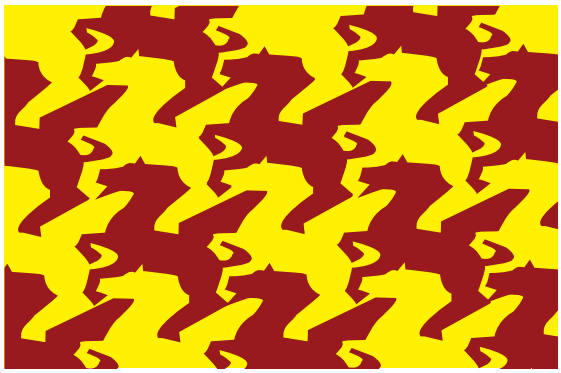
Keep taking turns until one of you can't go any further.

Whoever puts the last piece wins!

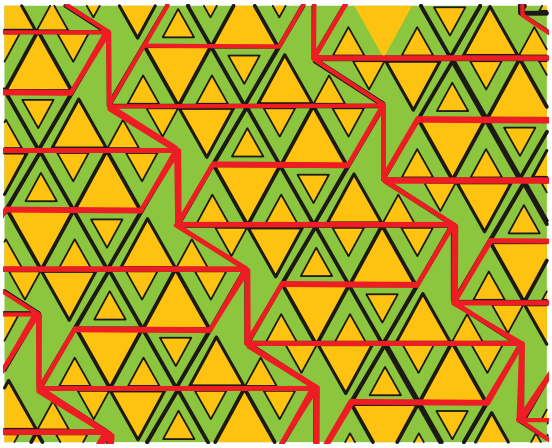
Make Your Own Tile

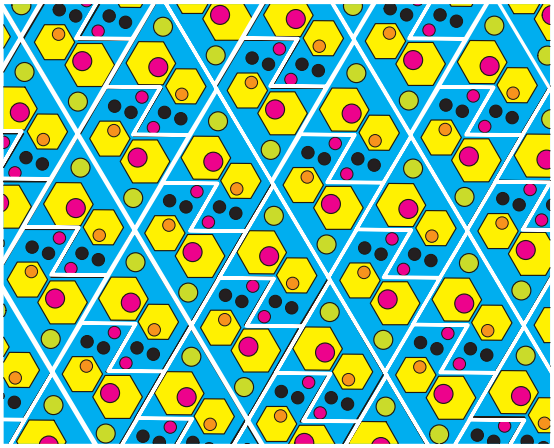
Choose the correct tile which could be repeated to make a pattern so that there are no gaps left.

Sumaria went to a shop and was surprised to see the different designs of tiles on the floor. Aren't these beautiful!



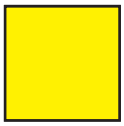
Can you find the tile which is repeated to make each of these floor patterns? Circle a tile in each pattern.

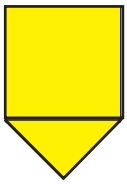




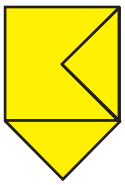
After looking at the patterns Sumaira wanted to make her own yellow tile. You too make a tile this way.

Step 1: Take a piece of cardboard or thick paper. Draw a square of side 3 cm on it.



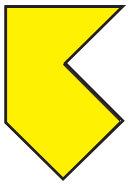


Step 2: Draw a triangle on any one of the sides of this square.



Step 3: Draw another triangle of the same size on another side the square. But this time draw it inside the square.

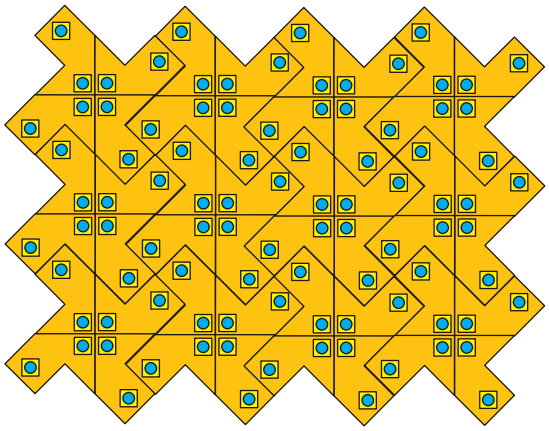
Step 4: Cut this shape from the cardboard. Your tile is ready!



What is It's area?

Make a pattern using your tile. Trace the shape to repeat it on a page, but remember there must be no gaps between them.

Sumaira made a pattern using her yellow tiles. (You know the area of her tile.)

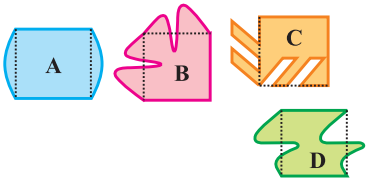


Answers these-

- ❖ How many tiles has she used?
- ❖ What is the area of the floor pattern Sumaira has made here?

Practice Time

Sumaira tried to make some other tiles. She started with a square of 2 cm side and made shapes like these.



Look at these carefully and find out:

- ❖ Which of these shapes will tile a floor (with out any gaps)? Discuss. What is the area of these shapes?
- ❖ Make designs in your copy by tilling those shapes.
- ❖ Now you create your own new tiles out of a square. Can you do the same with a triangle? Try doing it.

Parts and Wholes

Chapter 3

Our Flag

You must have seen the flag of our country. Do you know how to draw the flag?

Draw a rectangle of length 8 cm and width 6 cm.

Divide it into three equal parts and complete the flag

The top one-third of our flag is saffron (or orange).

What is the colour of the middle one-third of the flag?

Where will you draw the Ashoka chakra?

How much of the flag will you colour green?

Is the white colour now less than ⅓ of the flag? Why?

Now look at this flag. How much of it is black?_____

The flag of Afghanistan

The green part of the flag can be written as_____

Is red less than one-third of the flag?

Why?

This is the flag of Myanmar, our neighbours.

Is blue more than one fourth of the flag or less?

Guess how much of the flag is red. Is it more than ½ ? Is it more than three –fourths.

Magic Top

Let us make a magic top.

Take a cardboard piece.

Draw a circle of radius 3cm and cut it out.

Divide the circle into 8 equal parts. Now each part is $\frac{1}{8}$ of the circle.

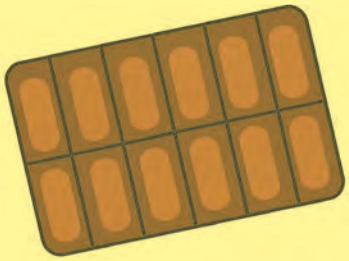
Colour $\frac{2}{8}$ red, $\frac{1}{8}$ orange, $\frac{1}{8}$ yellow etc, as shown here. Push a matchstick through the centre of the circle.

Your magic top is ready. Spin it fast!

What do you see? Can you see all the colours? Write what you see in your notebook.

Practice Time

A) Chocolate bar



Ulfat had a chocolate. She gave one- fourth of it to Nighat one-third to Sumaira and one-sixth to Ishrat. She ate the remaining part. How many pieces of chocolate did each get? Write here.

Nighat

Sumaira

Ishrat

Ulfat

What part of the chocolate did Ulfat eat?

B) Colour the hats

Colour ⅓ of the hats red.

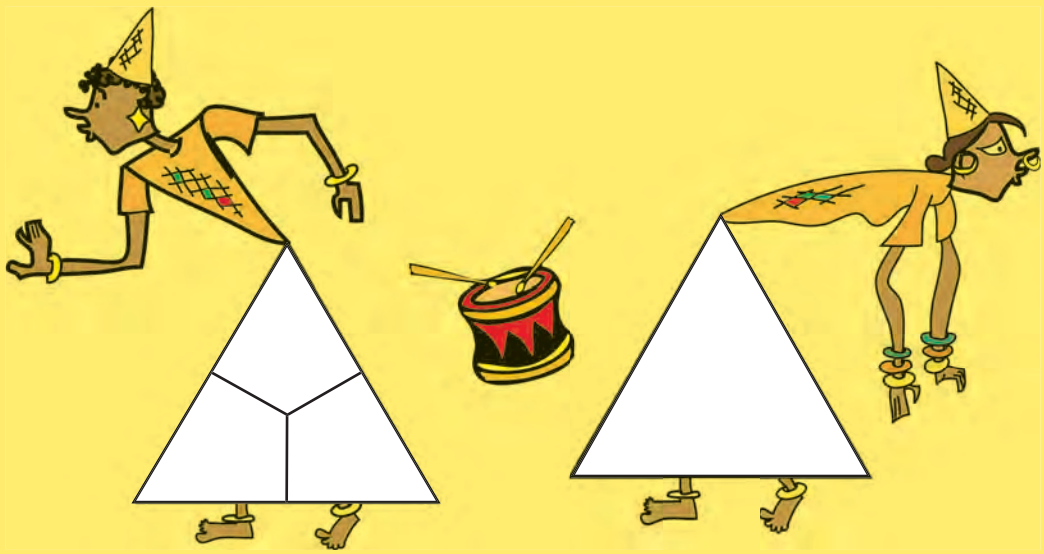
Colour three- fifth hats blue.

How many hats did you colour red?

How many hats did you colour blue?

What part of the hats are not coloured?

C) Equal Parts of a Triangle

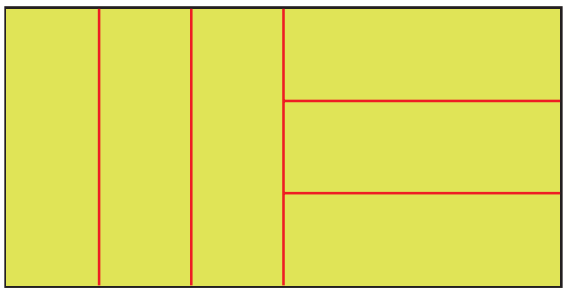


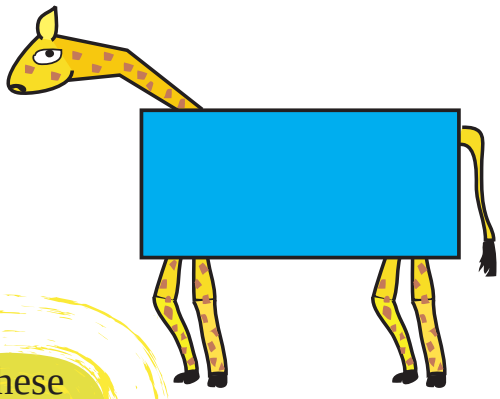
The white triangle is divided into three equal parts. Fill each one third part with a different colour. Can you show that these parts are equal? Think how.

Now try to make three equal parts of this triangle in a different way. Colour each one-third with a different colour.

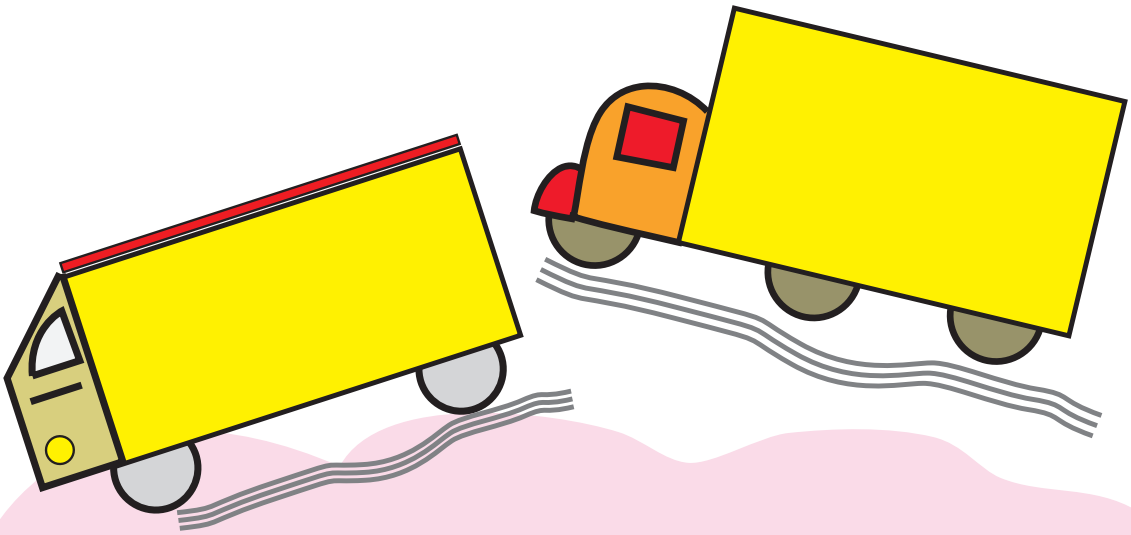
D) Six Parts of a Rectangle

Bisma has divided a green rectangle into six equal parts like this.





❖ Now you divide each of these rectangles into six equal parts. Use a different way for each of the three rectangles



Discuss

❖ How will you check that each part is really one-sixth of that rectangle?

❖ The green rectangle is bigger than the blue one. Can we say that $\frac{1}{6}$ of the green rectangle is bigger than $\frac{1}{6}$ of the blue rectangle?

Greedy Gate keepers

Remember Birbal, The clever minister of King Akbar? Do you know how he became a minister?

Birbal was then a young boy living in a village. He was very clever and could write poetry.

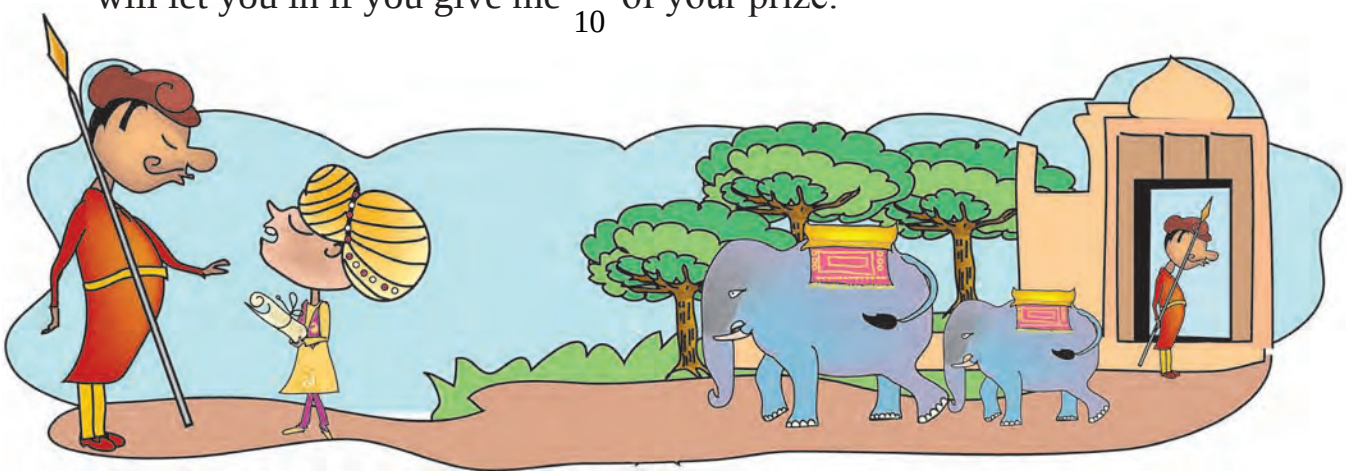
He thought he would try his luck in the king's court. So he took some of his poems and set of for the city.

When he reached the outer gate of the palace, he was stopped by the gatekeeper. "Hey! Stop there!

Where are you going?", shouted the gate keeper.

"I am a poet. I want to see King Akbar and show my poems to him", replied the poet.

"Oh, you are a poet! The king is kind, he will surely give you a prize. I will let you in if you give me $\frac{1}{10}$ of your prize."



Young Birbal agreed since he had no other way.

When he went in, the gatekeeper calculated "If he gets 100 gold coins I will get_____ gold coins".

The poet came to a second gatekeeper.

This gatekeeper also said, "I will let you in if you give me **two-fifth** of your prize". The poet agreed.

The gatekeeper happily calculated, "The poet will get at least 100 gold coins so I will get _____ gold coins!"

The poet reached the last gate. The gatekeeper said, "I will allow you to see the king only If you give me **half** of the prize that you get". The poet had no other way. He agreed and went inside.

The gatekeeper thought, "Today is a great day. If he gets 100 gold coins

I will get _____ gold coins. But if he gets 1000 coins — wow! I will get_____"

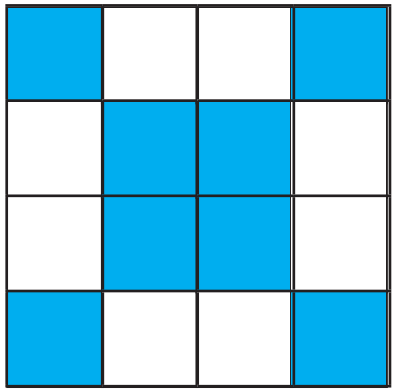
The king was very happy with the poems and said, "Your work is very good. You can ask anything as your prize".

"My Lord, I want 100 slaps". "What! 100 slaps? _____" The king was shocked —

❖ What happened after that? Complete the story. What part of the prize did the poet get?

Pattern in Parts

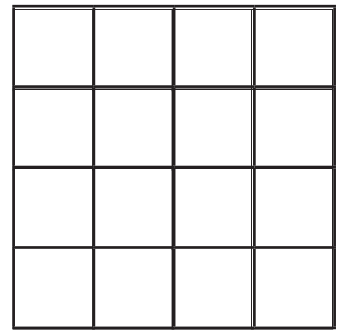
A



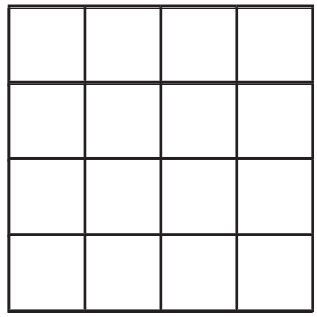
$\frac{8}{16}$ blue, $\frac{8}{16}$ white

1. Make different patterns by colouring some squares in the grids B, C, D. What part of the grid did you colour? What part of the grid remained white? Write.

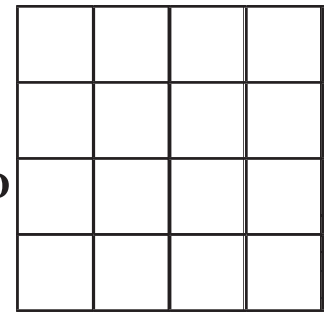
B



C



D



2. Look at Grid A again. Is the grid coloured -

a) $\frac{1}{2}$ blue, $\frac{1}{2}$ white? b) $\frac{2}{4}$ blue, $\frac{2}{4}$ white?

c) $\frac{3}{8}$ blue, $\frac{5}{8}$ white? d) $\frac{4}{8}$ blue, $\frac{4}{8}$ white?

Mark (×) on the wrong answer.

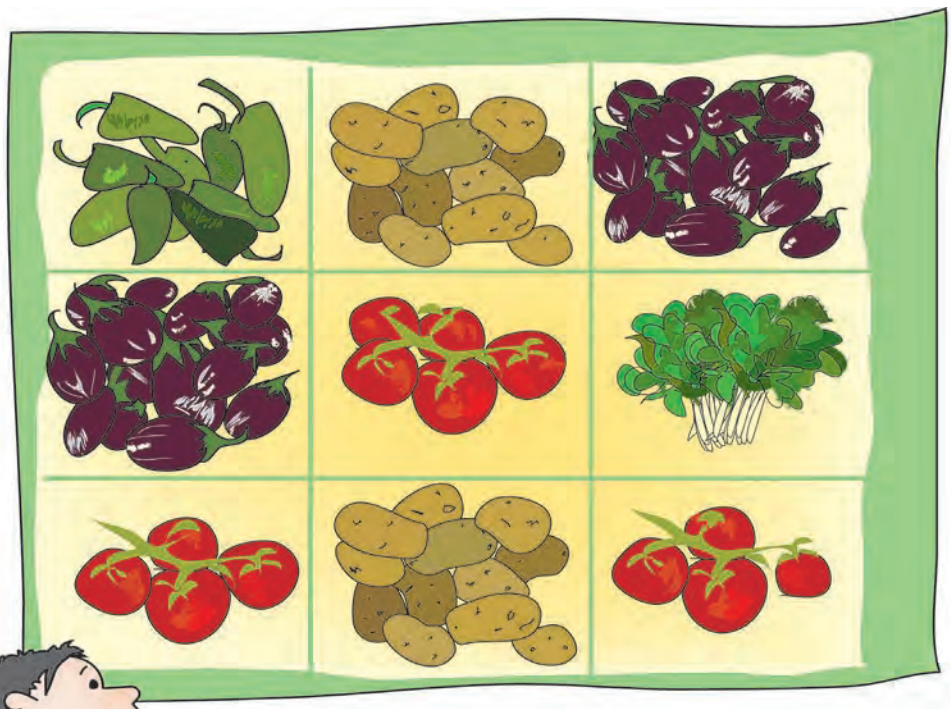
3. Draw grids of 16 squares and make patterns with

a) $\frac{2}{8}$ red, $\frac{1}{2}$ yellow, $\frac{1}{4}$ green

b) $\frac{3}{16}$ blue, $\frac{5}{16}$ red, $\frac{1}{2}$ yellow

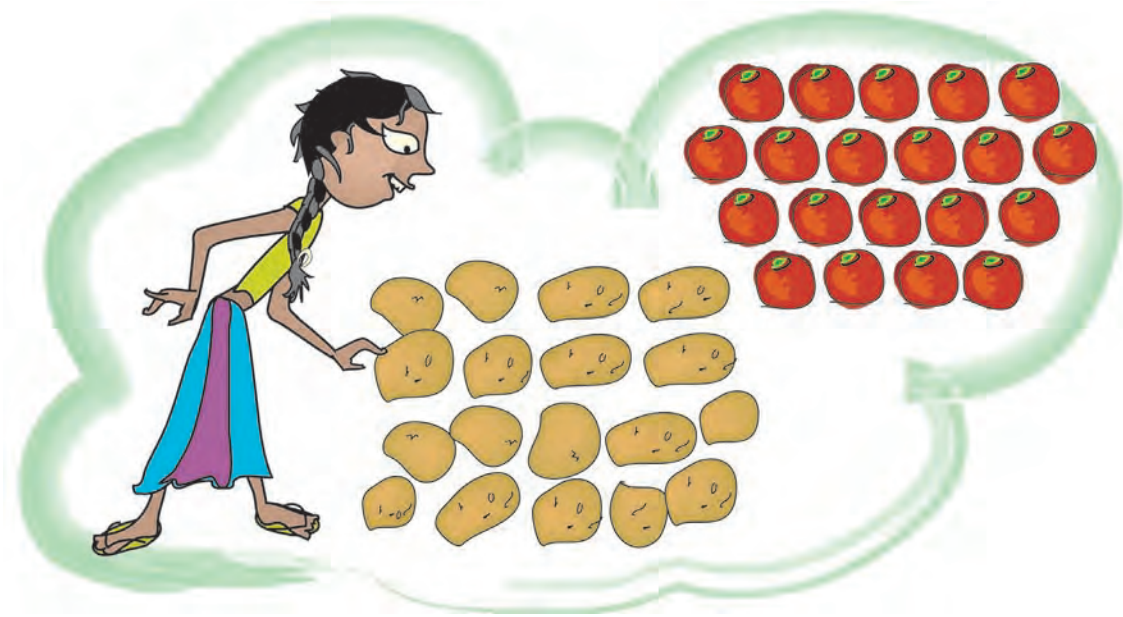
Farooq's Vegetable field.

Farooq's vegetable field has 9 equal parts. What vegetables does he grow?



1. Which vegetable grows in the biggest part of his field? What part?
2. On what part of the field does he grow potatoes?
3. What part of the field is used to grow spinach? What part is used for brinjals?
4. Now you write some questions by looking at this picture.

❖ Farooq wanted to give these vegetables to his friends. He gave Rafiq one-fifth of these tomatoes and $\frac{1}{3}$ of the tomatoes. Sumaiya got $\frac{2}{5}$ of the tomatoes and $\frac{3}{6}$ of the potatoes. Yasmeen got the rest of these vegetables. Circle Rafiq's Share in blue. Circle Sumaiya's share in yellow.



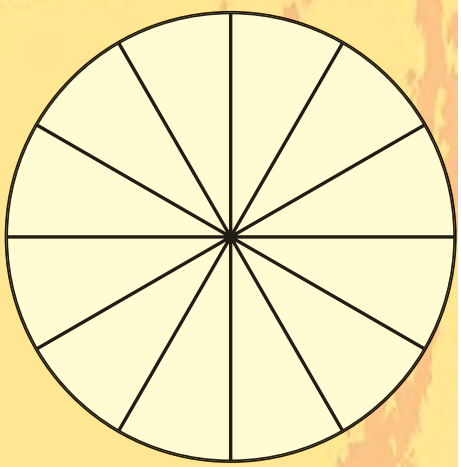
❖ How many potatoes and tomatoes did Yasmeen get?

Game: Who colours the circle first?

This game is to be played in groups of 4. Each player has to make a circle as shown. Each one of has to make 15 tokens on slips of paper. Write $\frac{1}{2}, \frac{1}{3}, \frac{1}{4}, \frac{1}{6}, \frac{1}{12}, \frac{2}{12}, \frac{3}{12}, \frac{4}{12}, \frac{11}{12}$ to make your tokens.

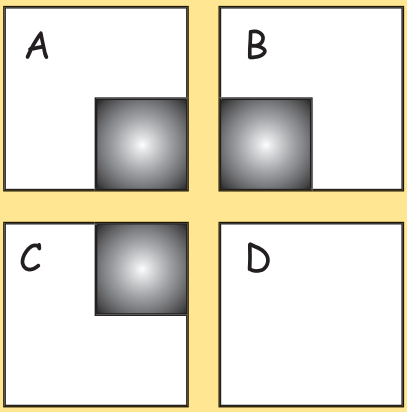
Shuffle the tokens and make a pile in the middle of the group. Now you are ready to start the game.

The first player takes a token from the pile. colours that part of the picture , and puts the token under the pile. The next player does the same and so on. The winner is the one who first colours the circle completely.



- Who won the game?
- What are the winner's tokens?
- Write the tokens you got?
- What part of the circle did you colour?

The Card Puzzle



1. Divide the white area in square A into two equal parts.
   Got the answer? Was that easy?
   Now do the second question.
2. Divide the white area in squares B into three equal parts!
   That too is easy, isn't it?
   Now see the third question.
3. Divide the white area in squares C into four equal parts!! Is it a bit difficult? Don't worry, take your time.
   Only if you give up, look for the answer.
   Here comes the last question.
4. Divide the white area in squares D in to seven equal parts!!!!

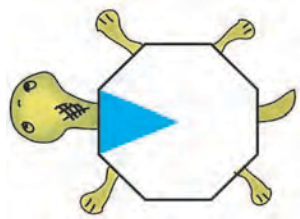
   The world record for this is 7 seconds. But you can take minutes!

   Tired of thinking? Look for the answer on page 54. So was that difficult??

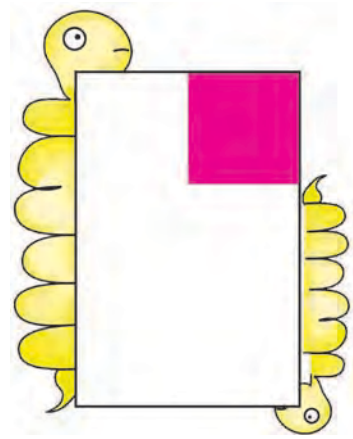
Guess and Check

a. What part of each shape is coloured?

First guess the answer, then check.

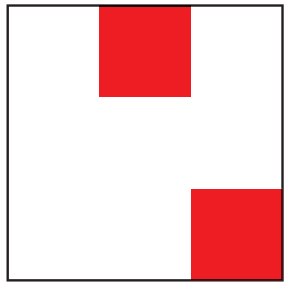


(1)

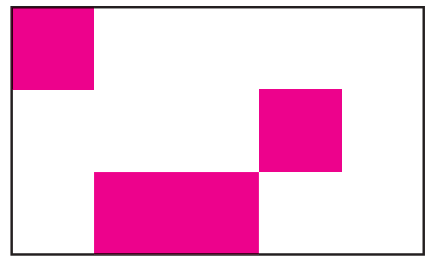


(2)

(3)

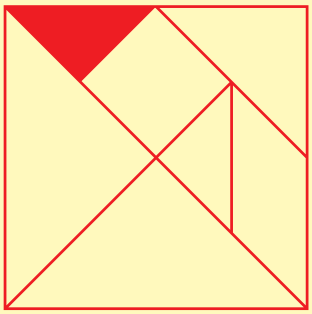


(4)



B) Do you remember this picture? Look at the small triangles. What part of the square is it? How will you find this out?

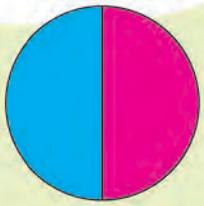
Divide the big triangles and other shapes into small triangles(like the red one). How many small triangles are there altogether?



Coloured Parts

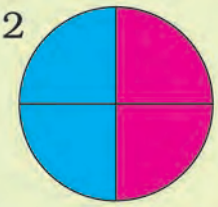
Complete these

1



This circle is divided into two equal parts. Out of_____ equal parts one part is coloured blue.

2



Here the circle is divided into_____ equal parts. Out of _____ equal parts, _____ parts are coloured blue.

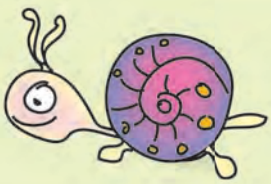
3

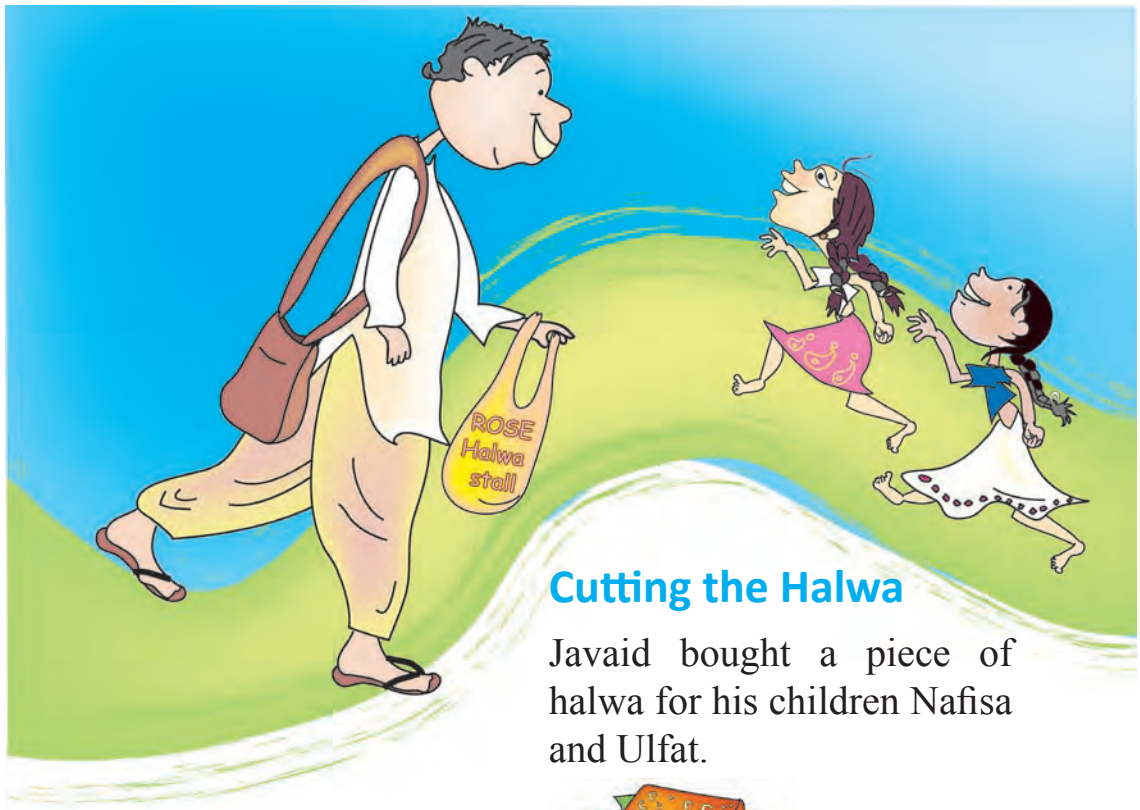
Here the circle is _ _ _ _ _ _ _ _

4

Here the circle is _ _ _ _ _ _ _ _

So we can say that $\frac{1}{2} = \frac{2}{...} = \frac{...}{6} = \frac{...}{8}$





Cutting the Halwa

Javaid bought a piece of halwa for his children Nafisa and Ulfat.

He divided it equally for them

❖ Each will get _____ part of halwa

"This piece is too big. We can't eat it", they said.

So he divided the pieces into half again. Now how many pieces will Nafisa get?

_____

❖ What part of the halwa is it? _____

"Make it even smaller, Dad" they asked.

So he again cut the halwa into smaller pieces.

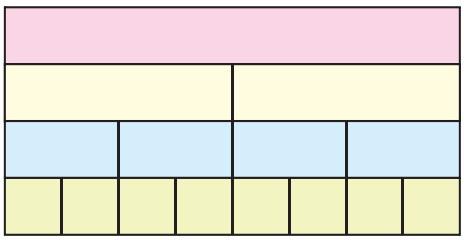
"Ok, thank you, Dad".

- Now how many pieces will each get?
- What part of the halwa is each piece now?
- If Javaid had cut the halwa into 6 equal parts how many pieces would each have got? Look at your answers for questions 1 to 4 and write —

$\frac{1}{2}$ = ____ = ____ = ____ = ____ = ____

Parts of the Strip

Look at the picture. Write what part of the strip is each green piece. Write the part for a piece of each colour.



How many one-fourths will make a half

How many $\frac{1}{8}$ will make $\frac{1}{4}$?

How many $\frac{1}{8}$ are in $\frac{1}{2}$?

Now ask your friends some questions on the same picture.

Patterns

Look at this square.

What part is coloured blue?

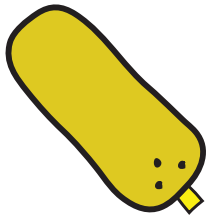
What part is green?

Puzzle: Is it Equal?

Aminah says half of half and one-third of three-quarters equal. Do you agree? How will you show this?

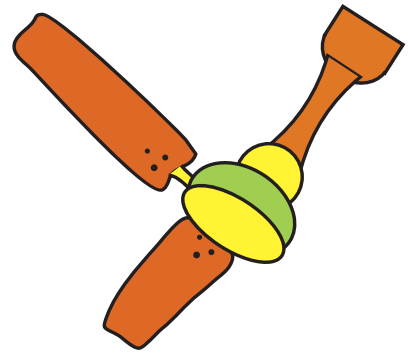
From a Part to the Whole

1) This show $\frac{1}{5}$ petals of a flower.
Complete the flower by drawing the other petals.



2) The picture shows one-third of the blades of a fan.
Complete the picture by drawing the other blades.

3) Half of the blades of another fan are shown here.
Complete the picture by drawing the other half.
How many blades have you drawn?



Rupees and Paise

How many  will make a rupee?

Is 50 paise half of one rupee?

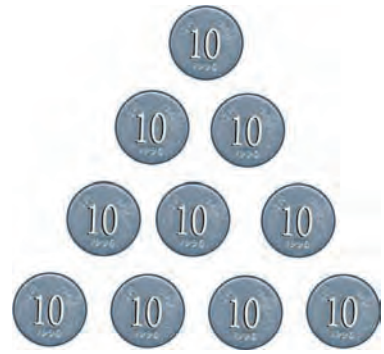
How many  will make one rupee?

25 paise is _____ part of one rupee?

20 paise is _____ part of one rupee?

How many 10 paise will make one rupee?

So 10 paise is _____ part of one rupee?



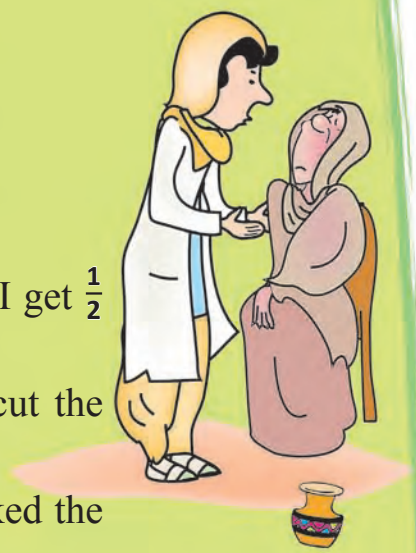
An Old Woman's Will

Once there lived an old woman. She lived with her three daughters. She was quite rich and had 19 camels. One day she fell ill. The daughters called the doctor. The doctor tried his best but could not save the woman. After her death, the daughters read what she had written in her will.

My eldest daughter will get $\frac{1}{2}$ of my camels

My second daughter will get $\frac{1}{4}$ of my camels

My third daughter will get $\frac{1}{5}$ of my camels



The daughters were really puzzled. "How can I get $\frac{1}{2}$ of the 19 camels?' asked the eldest daughter.

"Half of l9 is nine and a half. But we can't cut the camel!" The second daughter said.

"That is right. But what will we do now?" asked the third daughter".

Just then they saw their aunt coming. The daughters told her their problem.

"Show me the will. I have an Idea. You take my camel. So you have 20 camels. Now can you divide them as your mother wanted?" the aunt said.

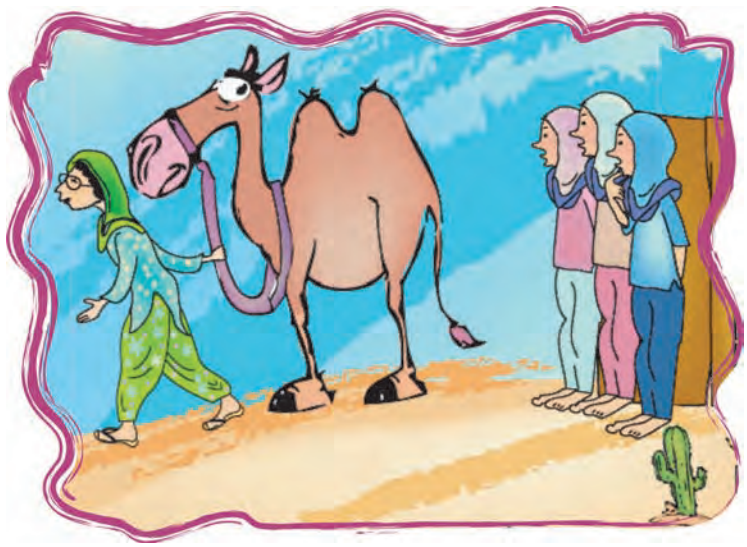
"You want half of the camels, don't you? Take 10 camels" she said to the eldest daughter.

"Take your share", the aunt told the second daughter. She took one-fourth of the camels and got_____ camels.

"You can take one-fifth of the camels", the aunt told the third daughter.

She got ____ camels. The daughters were very happy and counted her camels 10+ _____ + _____ = 19.

"The one remaining is mine", said the aunt and took her camel away!



❖ How did this happen? Discuss.

Asif's Time Table

Sleeping: One third of a day

Use different colours to show

Playing: One eighth of a day

Studying: ¼ of a day

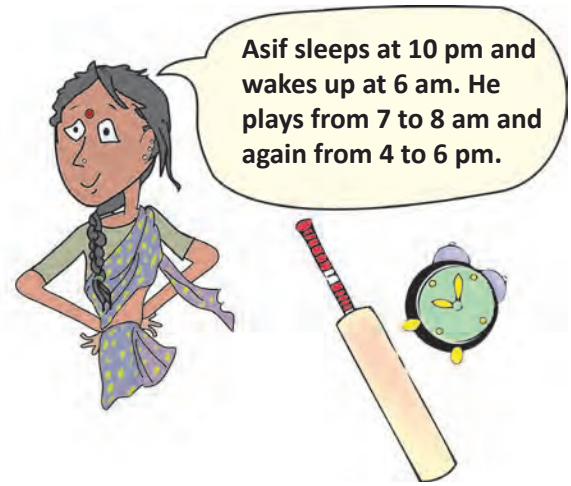
How many hours does Asif take for

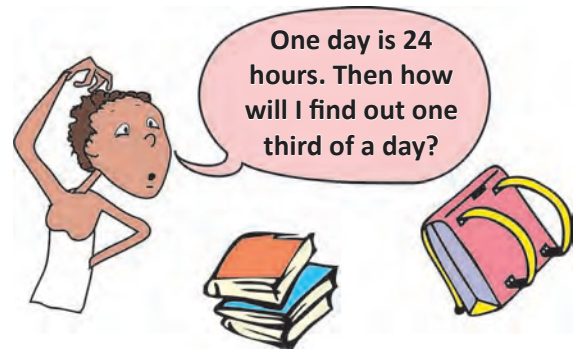
Sleeping? ☐ hours

Studying? ☐ hours

Playing? ☐ hours

What part of the day does he use for other activities?





School Magazine

A school has decided to bring out a magazine every quarter of the year. How many magazines will they have in a year? If they want to print it at the end of each quarter of a year, which are the months for printing? Mark the number for those months.

1	2	3	4	5	6	7	8	9	10	11	12

Sleeping Beauty!

Have you heard of Kumbhakarana, the brother of Ravana? He is famous for sleeping for half a year.

Most people sleep about 8 hours a day.

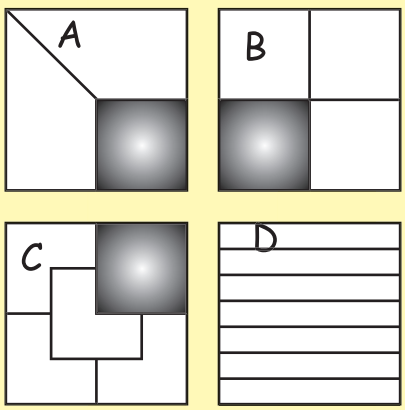
Then what part of a day is it? _____

So what part of year do they sleep? A person 60 years old must have slept _____ years!!!

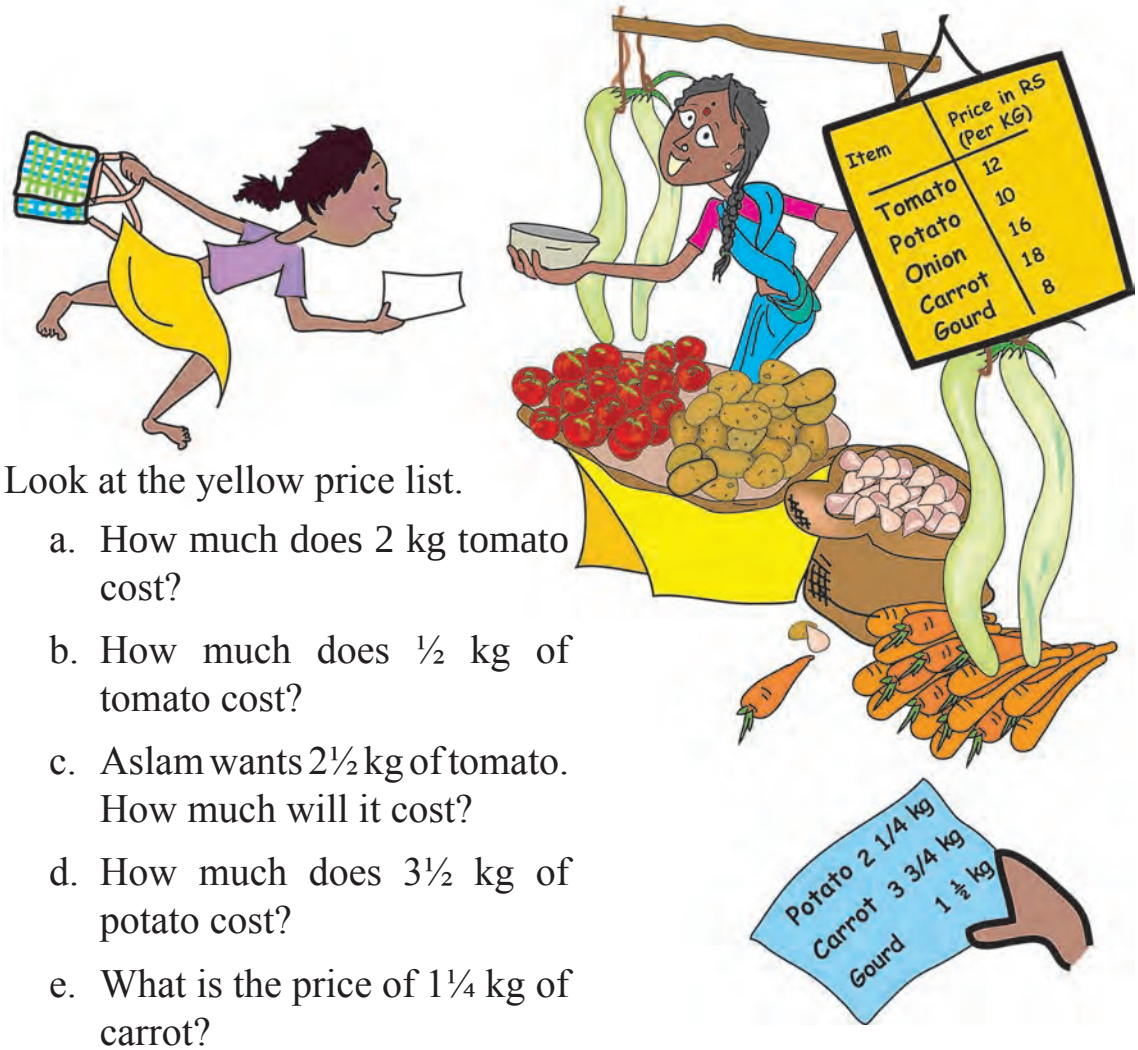
Answers: Card Puzzle (page 47)

Did you get stuck on square D?

Actually that was the easiest!!



Gazala's Shopping List



Look at the yellow price list.

a. How much does 2 kg tomato cost?

b. How much does ½ kg of tomato cost?

c. Aslam wants 2½ kg of tomato. How much will it cost?

d. How much does 3½ kg of potato cost?

e. What is the price of 1¼ kg of carrot?

f. He bought a gourd of weight 4¾ kg and its cost _____

g. Look at the shopping list in Gazala's hand. How much will she have to pay to buy all of these?

h. Make a bill of your own for vegetables you want to buy. Find the total money you will have to pay.

Item	Price in (per kg)	Amount
Total		

Let's Try These Now

Q.NO. 1 Compare the following by using < or > or =

(a) $\frac{7}{12}$ ☐ $\frac{9}{12}$ (b) $\frac{2}{8}$ ☐ $\frac{1}{4}$

(c) $\frac{6}{8}$ ☐ $\frac{3}{8}$

Q.NO. 2 Colour to show equivalent fractions:

(a)

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

(b)

$\frac{2}{8}$ $\frac{1}{4}$

Q.NO.3 Add:

(a) $\frac{1}{8}$ $\frac{3}{8}$ $\frac{4}{8}$ (b) $\frac{1}{8}$ $\frac{3}{8}$ $\frac{1}{2}$

Q.NO. 4 Bisma got prize money of Rupees100. She gave $\frac{1}{10}$ of prize money to her sister, $\frac{4}{10}$ of her prize money to her mother and $\frac{1}{2}$ of prize money to her father. How much does she keep for herself?

Q.NO. 5 An hour has 60 minutes. How many minutes are there in $\frac{5}{6}$ of an hour?

Q.NO. 6 Find:

(a) $\frac{1}{3}$ of 27 (b) $\frac{1}{4}$ of 32 (c) $\frac{1}{4}$ of $\frac{1}{10}$

(d) $\frac{1}{12}$ of $\frac{1}{3}$ (e) $\frac{1}{6}$ of $\frac{1}{2}$ (f) $\frac{2}{5}$ of 35

Q.NO. 7 Athar had 36 apples. He gave $\frac{1}{3}$ of the apples to Sahil and $\frac{3}{6}$ of the apples to Danish. How many apples Sahil and Danish received? How many are left with Athar?

Q.NO. 8 One half of the students in classes I to VIII in a school are girls; $\frac{2}{5}$ of these are in classes I to V. What fraction of students are girls studying in classes I to V.

Q.NO.9 A man lived for 60 years. He was sleeping 12 hours a day. What part of the age did he sleep? He was also reading books, newspapers for about 2 hours a day? What part of the age, he spent in reading books and newspapers.

Q.NO. 10 A meter of cloth costs Rs. 40/-. Find the cost of $2\frac{1}{2}$ meters of cloth.

Q.NO.11 A kilogram of mangoes costs Rs.9/-. Find the cost of $3\frac{1}{2}$ kg of mangoes.

Q.NO. 12 How many $1\frac{1}{2}$ kg packets of tea can be made from a bag containing 45 kg tea?

Answers

Q.No 1. (a) < (b) = (c) >

Q.No 3. (a) 1 (b) 1

Q.No 4. Nothing Q.NO.5. 50 minutes

Q.No 6. (a) 9 (b) 8 (c) $\frac{1}{40}$ (d) $\frac{1}{36}$ (e) $\frac{1}{12}$ (f) 14

Q.No 7. Sahil = 12 apples Danish = 18 apples Athar = 6 apples

Q.No 8. $\frac{1}{5}$

Q.No 9. 30 years i.e., half of his age; 5 years

Q.No 10. Rs 100/-

Q.No 11. Rs 31.50/-

Q.No 12. 30 packets

Does It Look The Same?

Chapter 4

Let's Make Pattern from a Drop of Colour

Make Your Pattern

Take a sheet of paper

Fold it into half

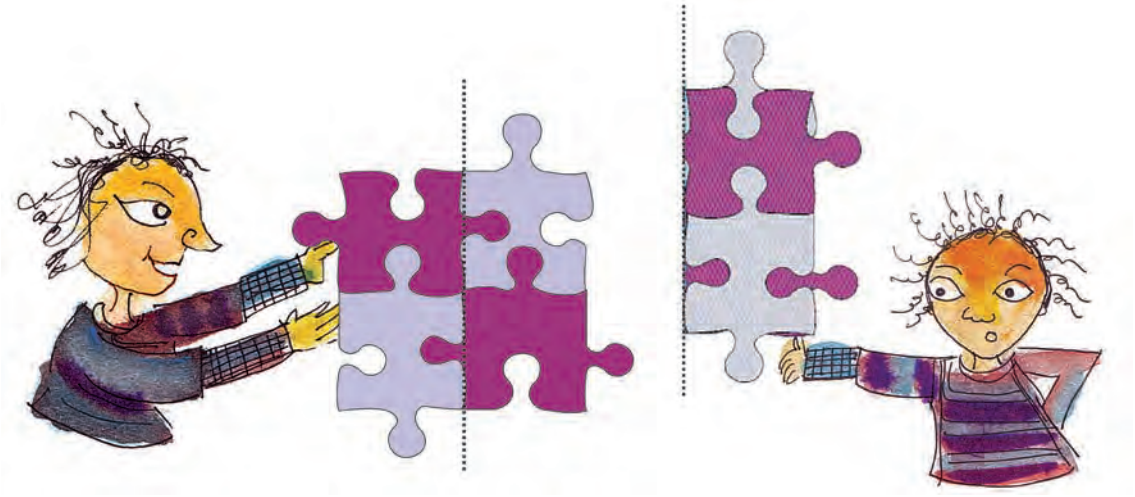
Open the fold and put a drop of colour on the middle line

Fold it twice and press It to spread the colour

Open it and see a beautiful pattern

Can you cut this pattern in such a way that you get two similar mirror halves? In how many ways can you do it?

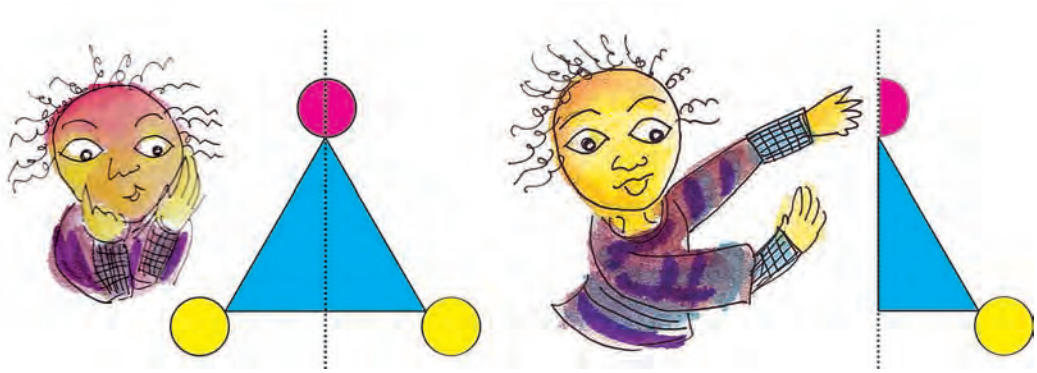
Look at This Pattern



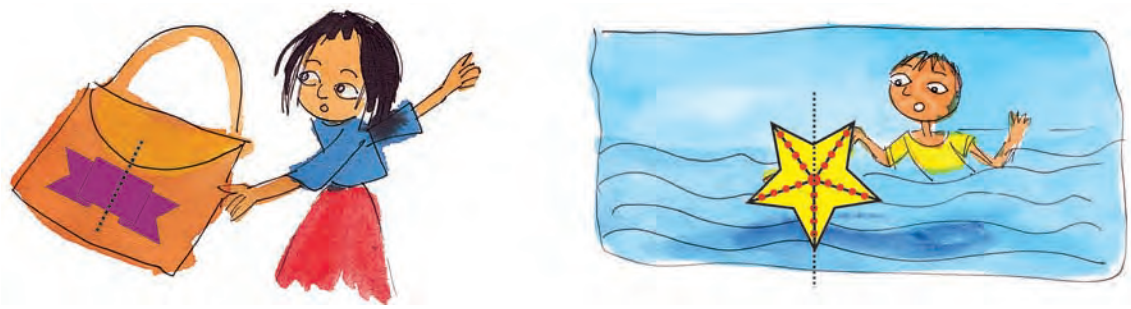
The dotted line divides the shapes into two halves. But if you fold it along the dotted line, the left half does not cover the right half completely. So the two halves are not mirror halves.

Now look at another shape.

If you fold it along the dotted line, one half will cover the other similar half completely. So the two here are mirror halves.

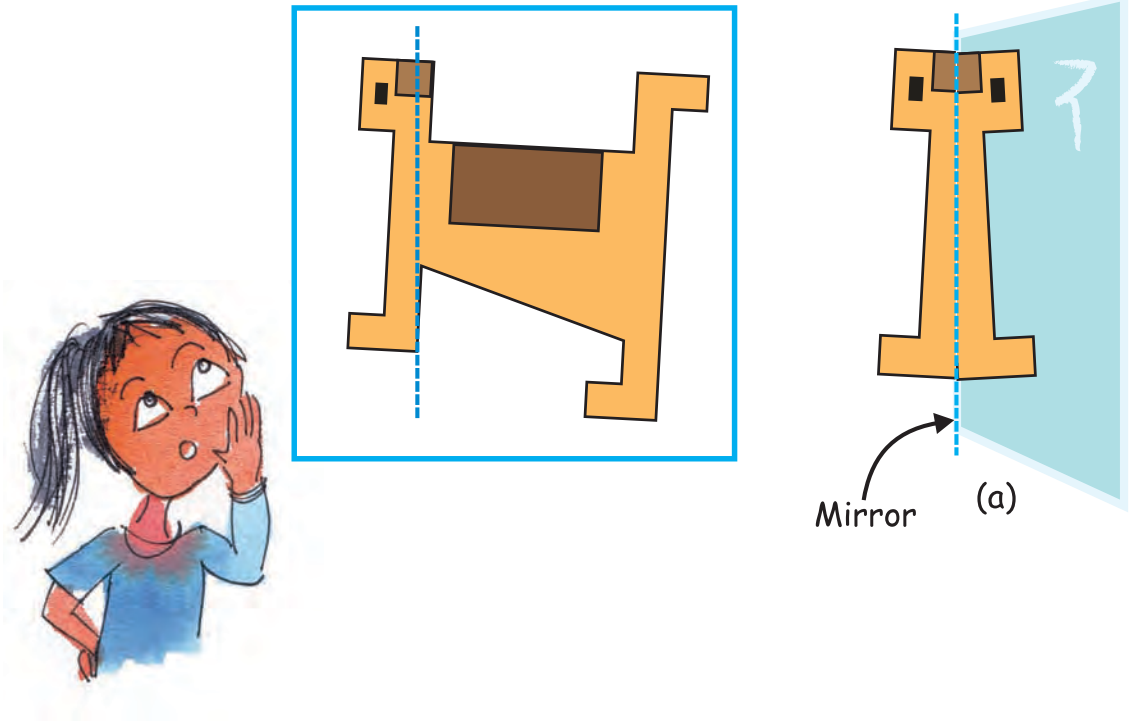


Now imagine these pictures.

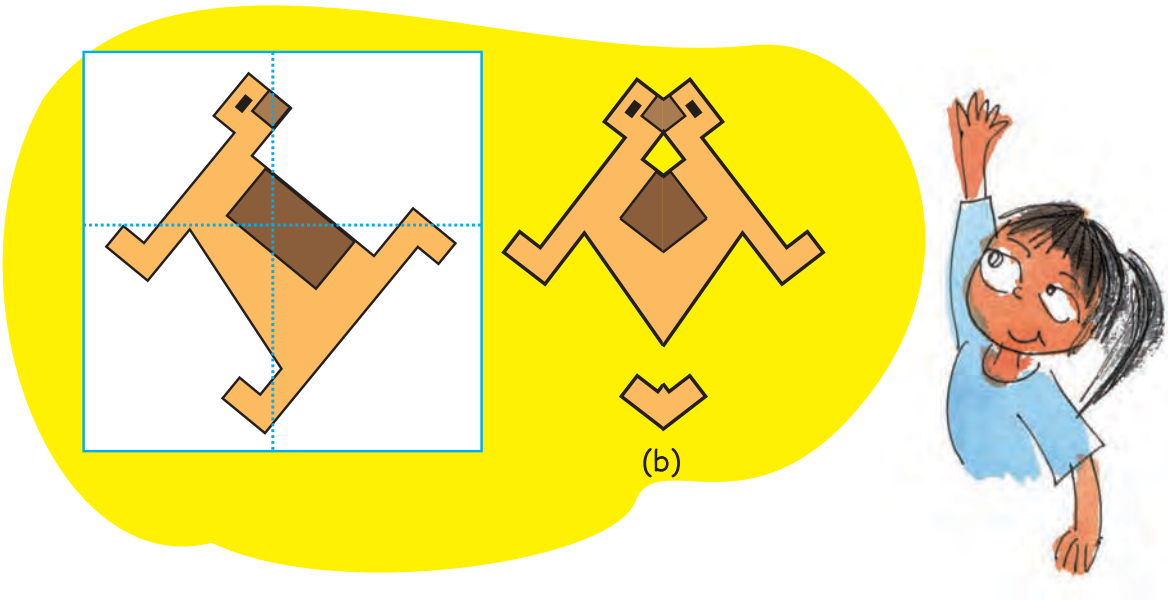


Mirror Games

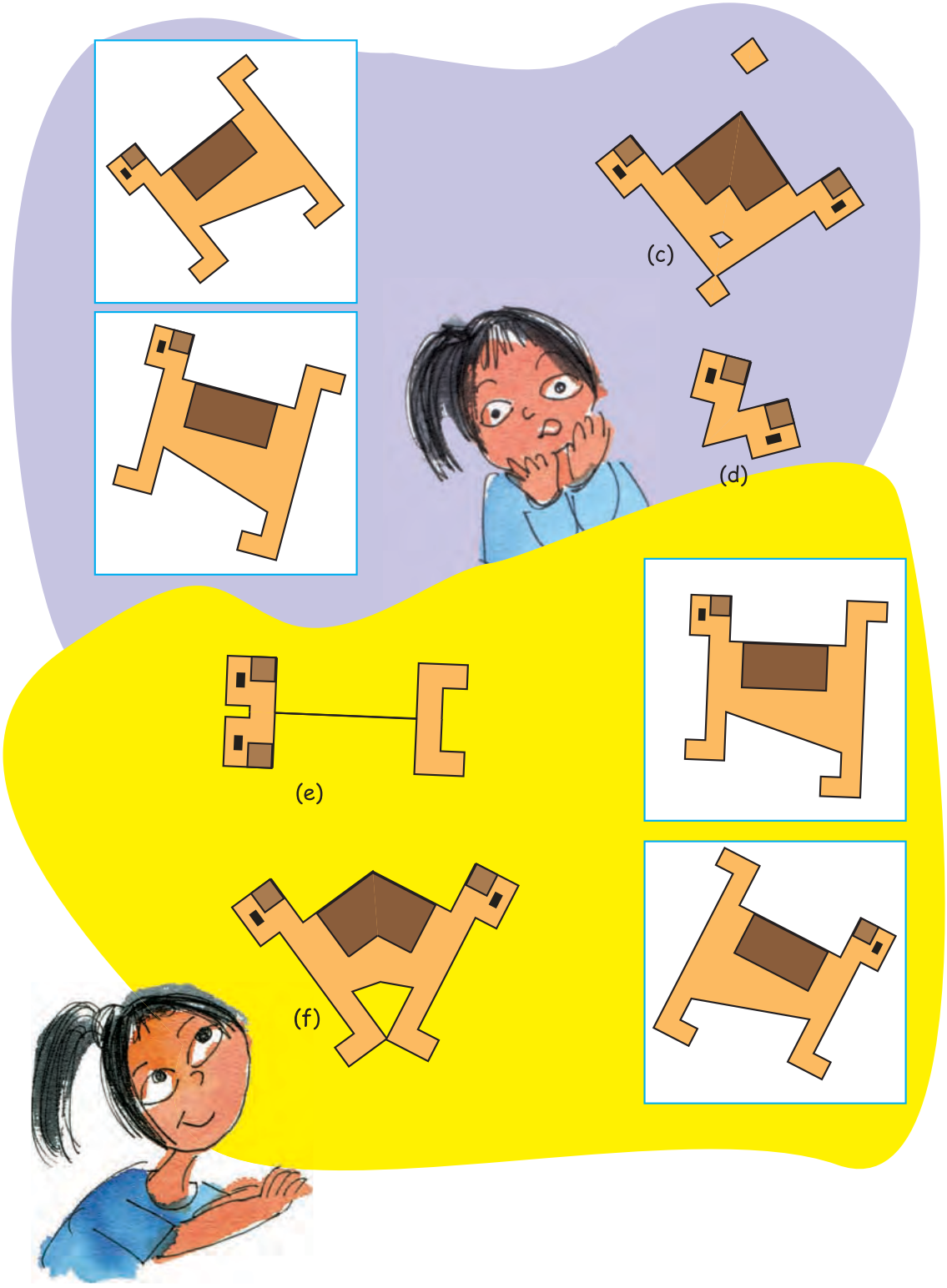
1. Here is a picture of a dog. You can place a mirror on the dotted line. Than the part of the dog to the right of the line will be hidden behind the mirror. What you will see is like (a).



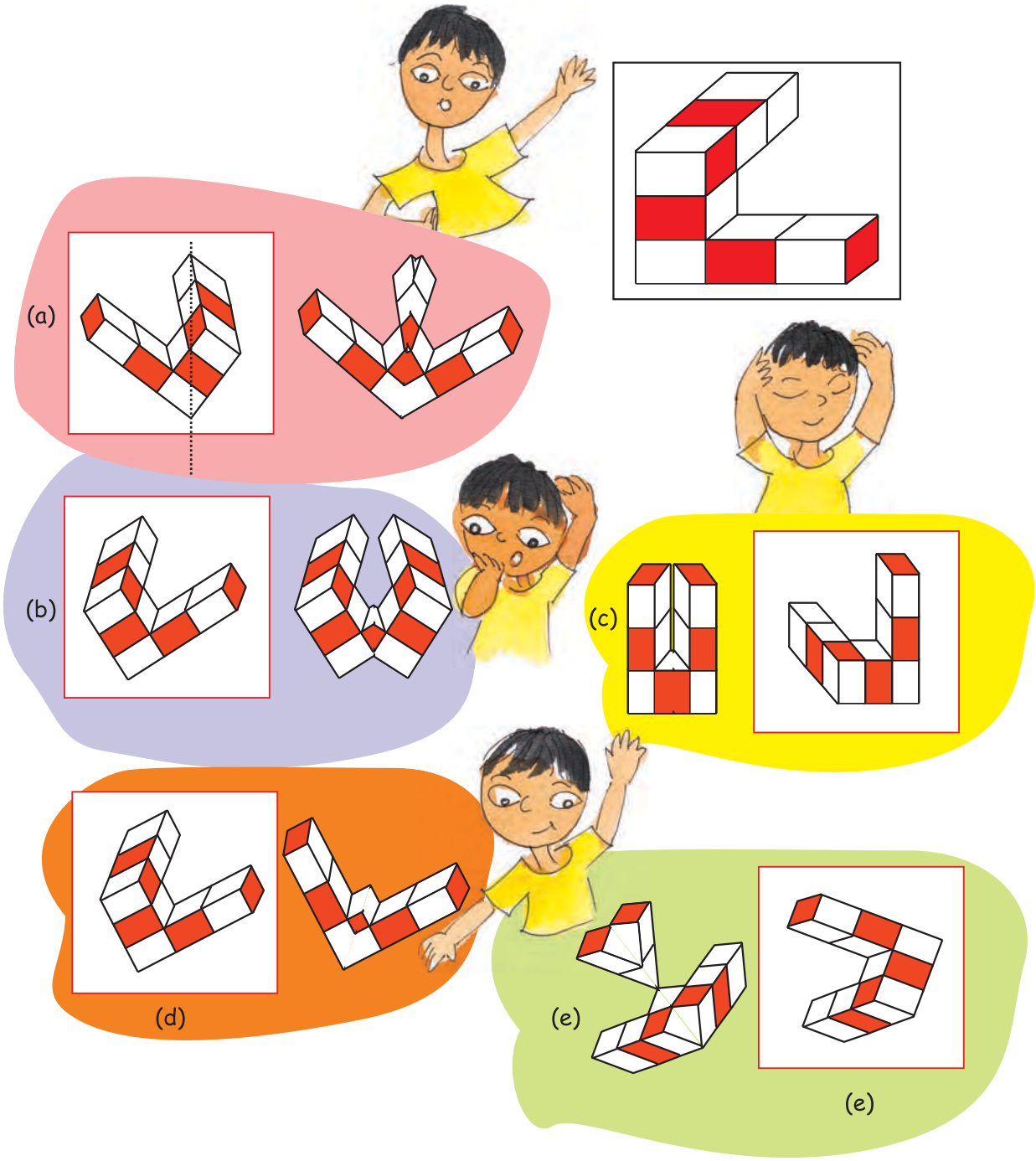
Look at the figure in the white box. On which of the dotted lines will you keep the mirror so that you get shape (b)? Also tell which part of the picture will be hidden when we keep the mirror on the dotted line.



Now make a line on the white box to show where you will keep the mirror to get the picture next to it.



2. Umar has made a red and white shape. Make a line on the white box where you will keep a mirror to get that shape. Look at how the line is drawn in the first box to get the picture next to it.



Half a Turn

Once there was a king. He was upset because thieves kept stealing costly jewels from his locker. Here is what the locker looked like:

The locker could be opened by giving its handle half a turn. Another half turn and the locker would be locked again.

The king would often leave the locker open thinking it was locked. Can you guess the reason?

One day his clever daughter gave him an idea which he liked very much. Now he never got confused.

Can you guess what the idea was?

The king's daughter asked the king to put a dot on one of the yellow blades.

The king had many such lockers with different handles. Check if, on giving them half a turn, he can get confused with these too.

What will you do to solve the problem for each of these?

Same after $\frac{1}{2}$ turn?

Guess which of the shapes below would look the same after half a turn.

Do you find it difficult to tell? If yes, then there is a way to check your guess. Here's how you can do it.

Take any of the shapes. Trace its outline on a sheet of paper. Now keep the shape on its outline and gave it a half turn. See if the shape fits its outline.

Practice Time

1. Find out which letters in the English alphabet look the same after half a turn.
2. Which of these English words reads the same on half a turn?

ZOOM, MOW, SWIMS, SIS, NOON.

3. Give half a turn to the numbers from 0 to 9. Find which of them still looks the same.
4. Think of all 2, 3 and 4 digit numbers which looks the same on half a turn.

Example

2 digit numbers 11, _____, _____

3 digit numbers 101, 111, _____, _____, _____, _____,_____,_____

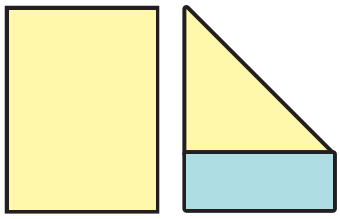
4 digit numbers 1001, 1111, _____, _____, _____ _____,_____

5. Which among the following pictures will look the same on half a turn?

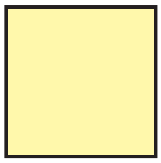
Activity Time

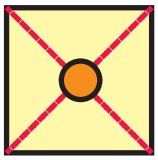
Have you ever seen a windmill? What is it used for?

Let us make a toy windmill.

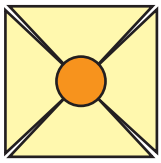


1. Take a sheet of paper.
2. Fold it as shown in picture.
3. Cut out the blue part of the paper. Your sheet of paper will now look like a square.

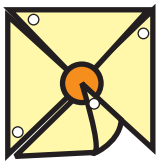


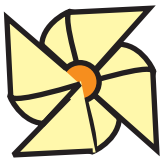


4. Fold it along the red lines and then open the fold. Draw a circle on the sheet as shown in the picture.
5. Cut along the red lines till you reach the circle. The paper will look like this.

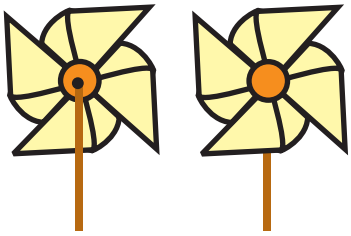


6. Take a pin and make holes on the four corners as shown in the picture.





7. Now fold the corners such that all the holes lie one on top of the other.
8. Pause the pin through the holes and fix it in the stick.

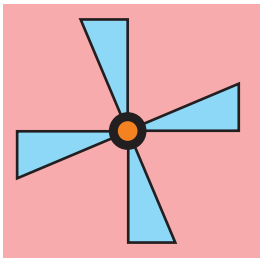


Your windmill is ready. Run with it and see how fast it moves.

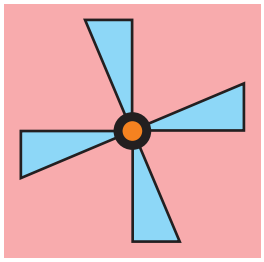
- ❖ Does your windmill look the same on ¼ of a turn?
- ❖ Does it look the same on half a turn? Discuss.

One-Fourth Turn

Does the fan look the same on ¼ turn?

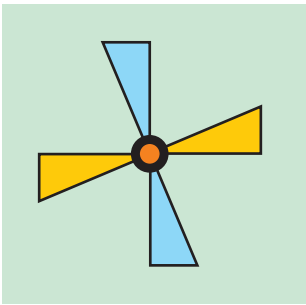


Before turning it



After $\frac{1}{4}$ turn

Will this fan also look the same after ¼ turn? Draw in the yellow box.



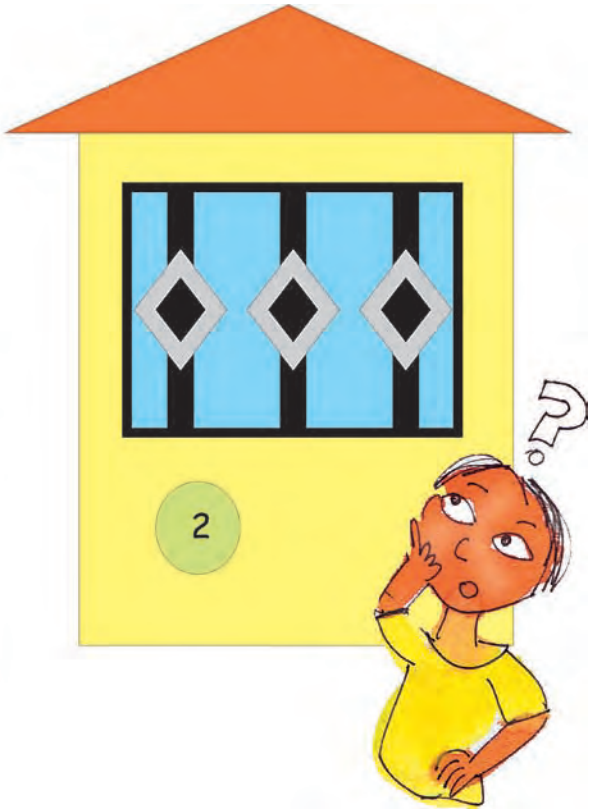
Before turning it

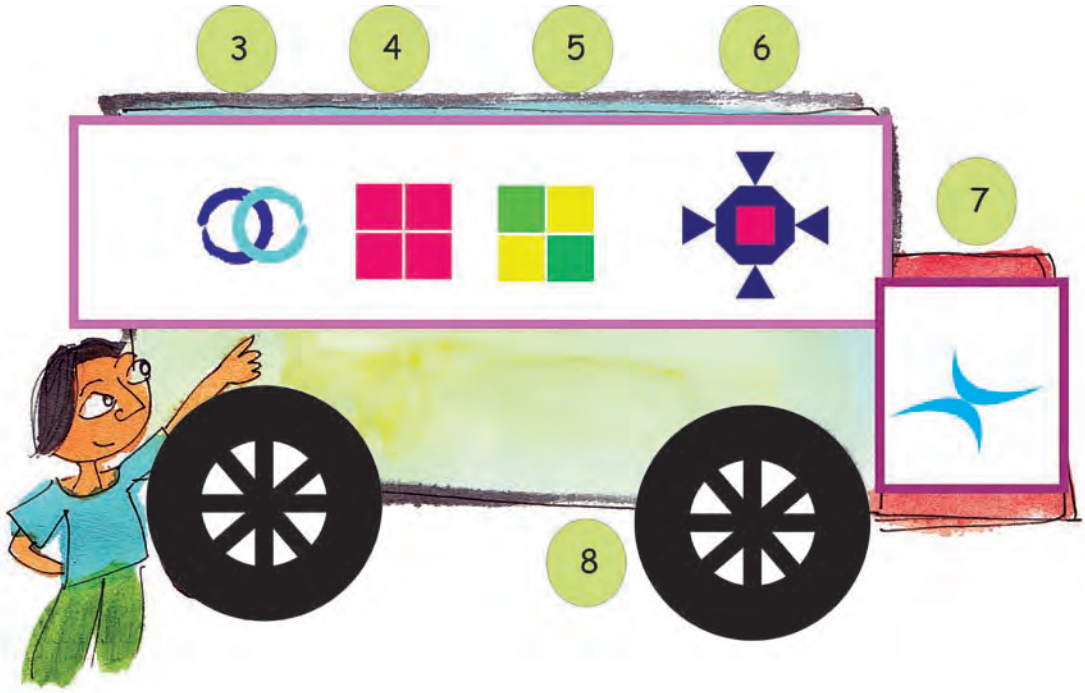
After $\frac{1}{4}$ turn

Practice Time

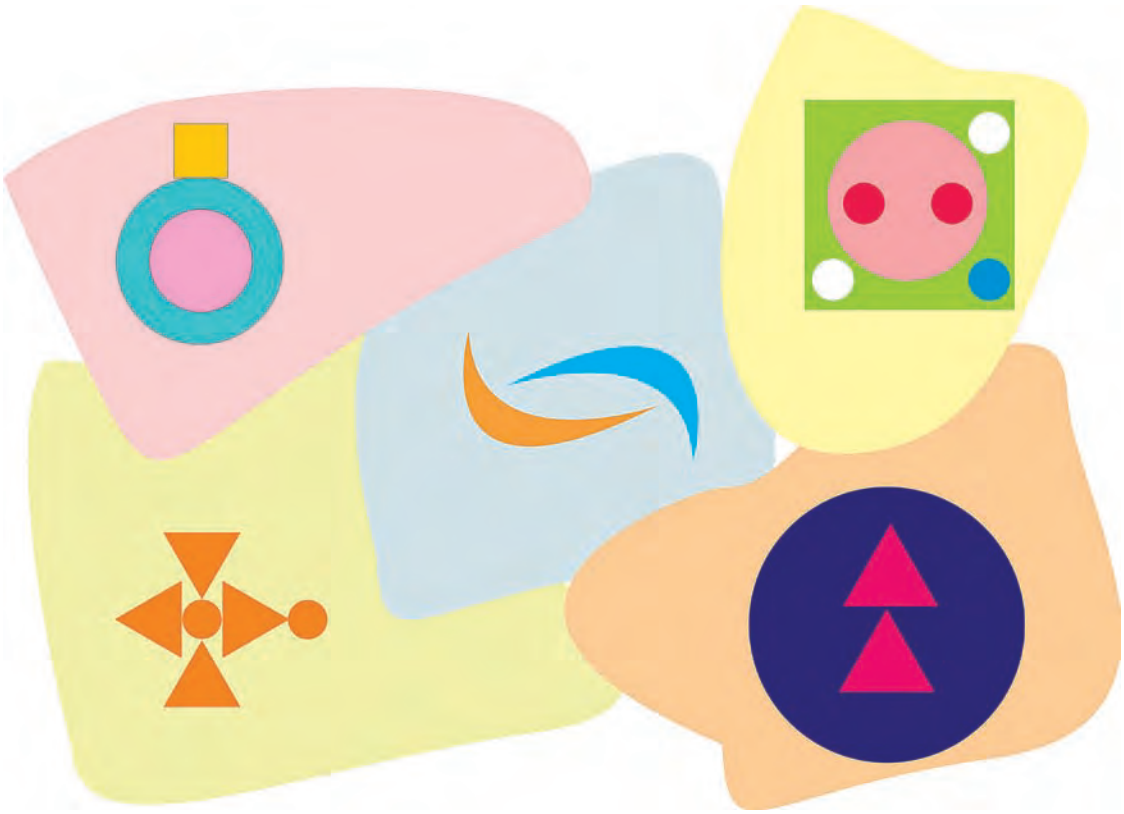
A) Among the following shapes, find out which ones would look the same after ¼ turn. Put (✓)

Put a (×) on the shapes that will not look the same after half a turn.

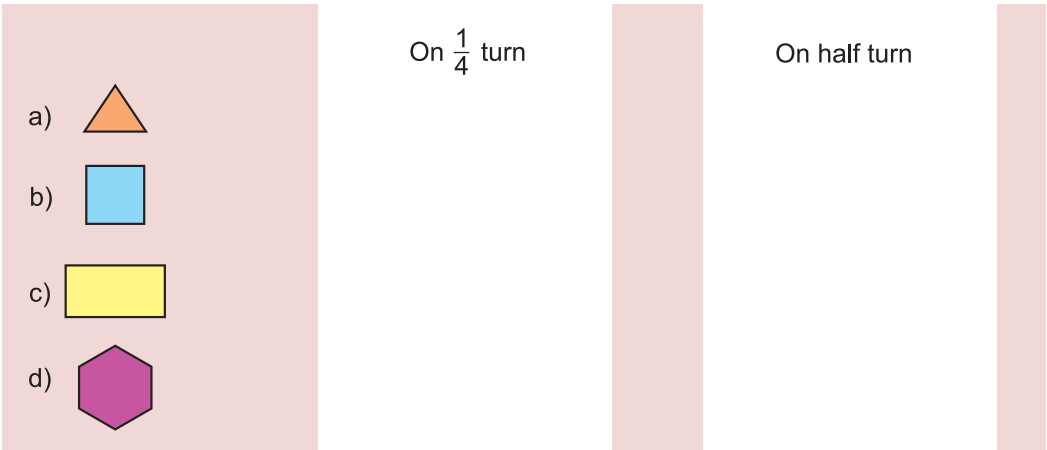




B) Try and change the shapes in such a way that the new shape remains the same on giving it half a turn.

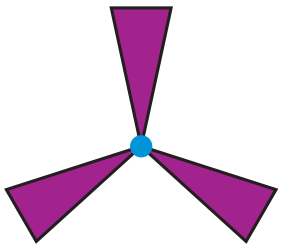


C) Draw what the following shapes would look like on ¼ turn and half a turn.

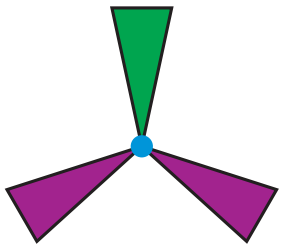


Which of the above shapes do not look the same on ¼ turn? Which shapes do not look the same on ½ a turn?

❖ Which fan will look the same on a ⅓ turn?

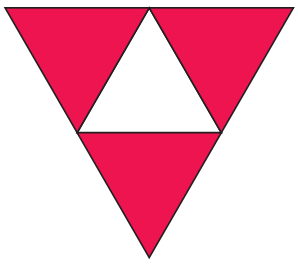


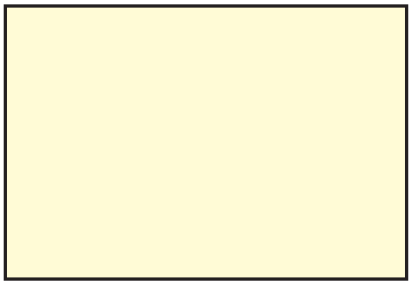
(a)



(b)

❖ Draw this shape after ⅓ turn.

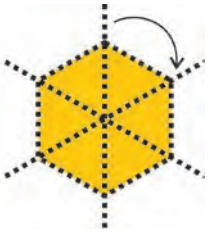




Shape after ⅓ turn

One-sixth Turn

Can you see this shape looks same on $\frac{1}{6}$ turn?



Practice Time

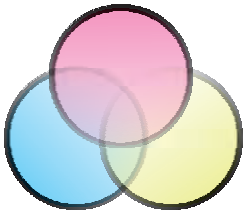
1. Look at the following shapes. Draw how they will look on $\frac{1}{3}$ and $\frac{1}{6}$ turn.

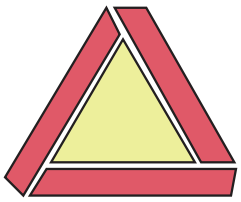
	$\frac{1}{3}$ turn	$\frac{1}{6}$ turn
		
		
		
		

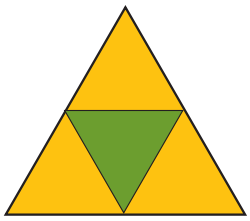
2. Look at the following shapes –

a. Find out which of these figures look the same on turn. Mark them with (✓).

b. Which are the ones that will not look the same after $\frac{1}{3}$ turn? Mark them with (×).







c. Try and change the shapes below in such a way that they look the same on $\frac{1}{3}$ turn.

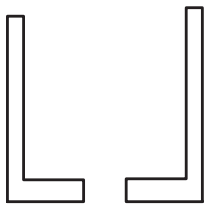
3. Draw some shapes which will look the same after $\frac{1}{3}$ turn.

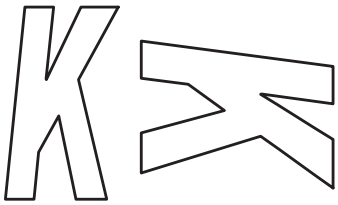
4. Draw some shapes which will look the same after $\frac{1}{6}$ turn.

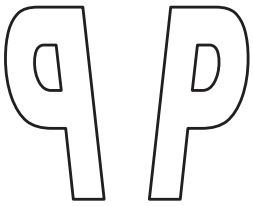
Now Let Us Do These

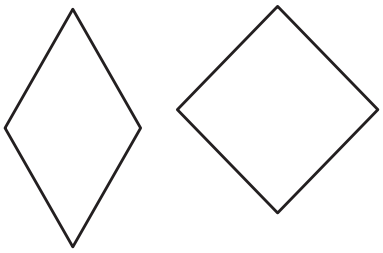
Q.NO.1 The mirror images are called reflections.

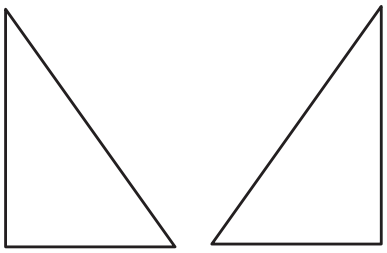
Which of the following are mirror images?

(a) 

(b) 

(c) 

(d) 

(e) 

Q.NO.2 The turning around a same point is called rotation.

a) A_____ does not change shape on turning.

b) After half a turn the alphabet M becomes _____

c) After ¼ turn a square does not _____ in shape but looks same.

Q.No.3 Give three examples of mirror reflections in our daily life.

Q.No.4 Show by tracing the quarter turn and half turn rotation of the shapes:

ANSWERS

Q.No.1

(a), (c), (e) are mirror images.

Q.No.2

(a) Circle

(b) W

(c) Change.

Q.No.3

Wings of birds, Butterflies etc, Pair of Eyes, Ears, Arms in human beings etc.

Q.No.4

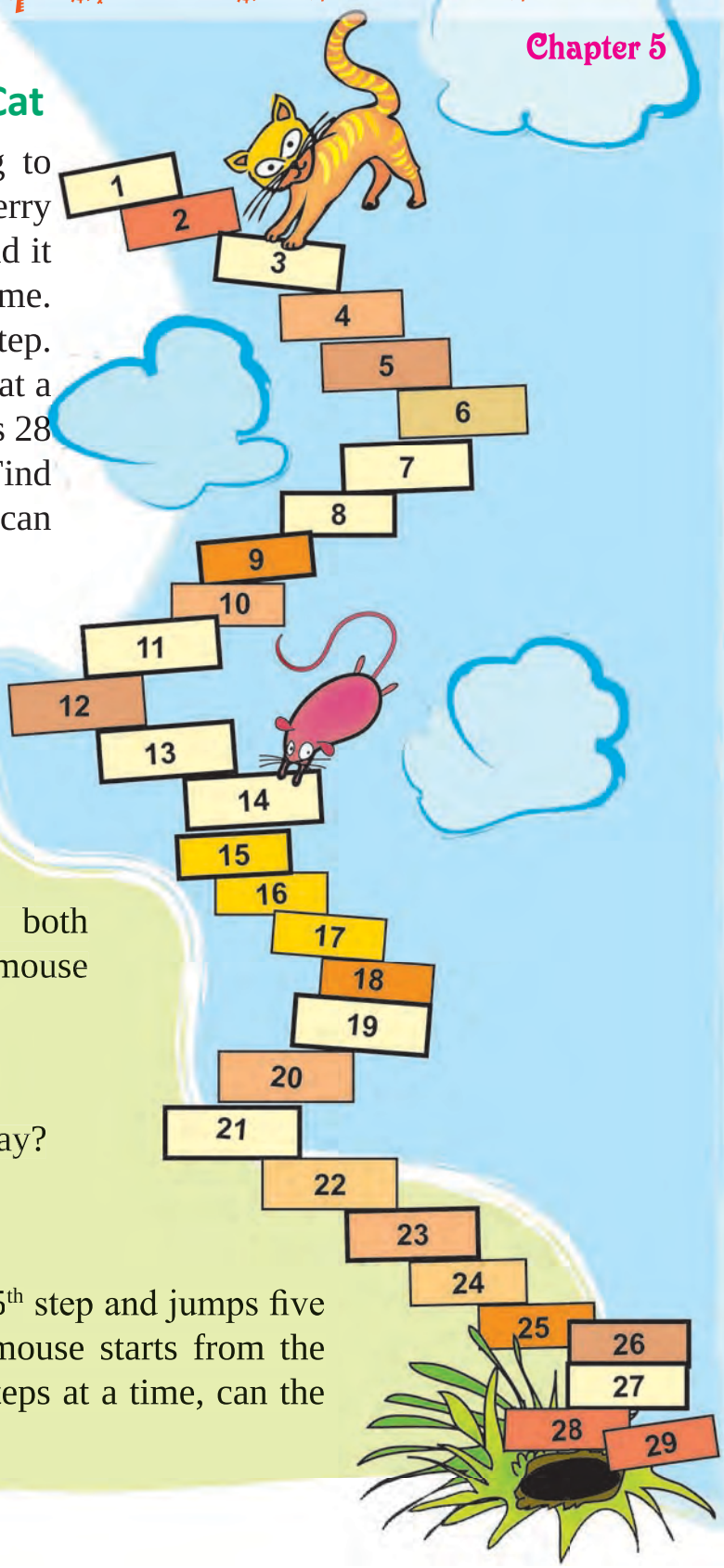
(a) (b) (c) (d)

Be My Multiple, I'll be Your Factor

Chapter 5

The Mouse and the Cat

The hungry cat is trying to catch Jerry the mouse. Jerry is now on the 14th step and it can jump two steps at a time. The cat is on the third step. She can jump three steps at a time. If the mouse reaches 28 it can hide in the hole. Find out whether the mouse can get away safely!



a. The steps on which the mouse jumps-

b. The steps on which the cat jumps-

c. The steps on which both the cat and the mouse jump_____

d. Can the mouse get away?

Find Out

If the cat starts from the 5th step and jumps five steps at a time and the mouse starts from the 8th step and jumps four steps at a time, can the mouse get away?

Who is Pappu waiting for?

Pappu cat is waiting for somebody. Do you know for whom he is waiting? There is a trick to find out.

			D				X		
1	2	3	4	5	6	7	8	9	10
	M					P			I
11	12	13	14	15	16	17	18	19	20
			O						
21	22	23	24	25	26	27	28	29	30
R			N		U				
31	32	33	34	35	36	37	38	39	40
			B	W			S		
41	42	43	44	45	46	47	48	49	40
	J				H				E
51	52	53	54	55	56	57	58	59	60

Mark with a red dot all the numbers which can be divided by 2.

Mark a yellow dot on the numbers which can be divided by 3 and a blue dot on the numbers which can divided by 4.

Which are the boxes which have dots of all three colours?

What are the letters on the top of those boxes?

Write those letters below in order.

Meow Game

To play this game, everyone stands in a circle. One player calls out 'one'. The next player says 'two' and so on. A player who has a call out 3 or a number which can be divided by 3 has to say 'Meow' instead of the number. One who forgets to say 'Meow' is out of the game. The last player left is the winner.

Which numbers did you replace with 'Meow'?

3, 6, 9 .....

We say these numbers are the **multiples** of 3.

Play the game by changing the number to 4.

Now, which number did you replace with 'Meow'?

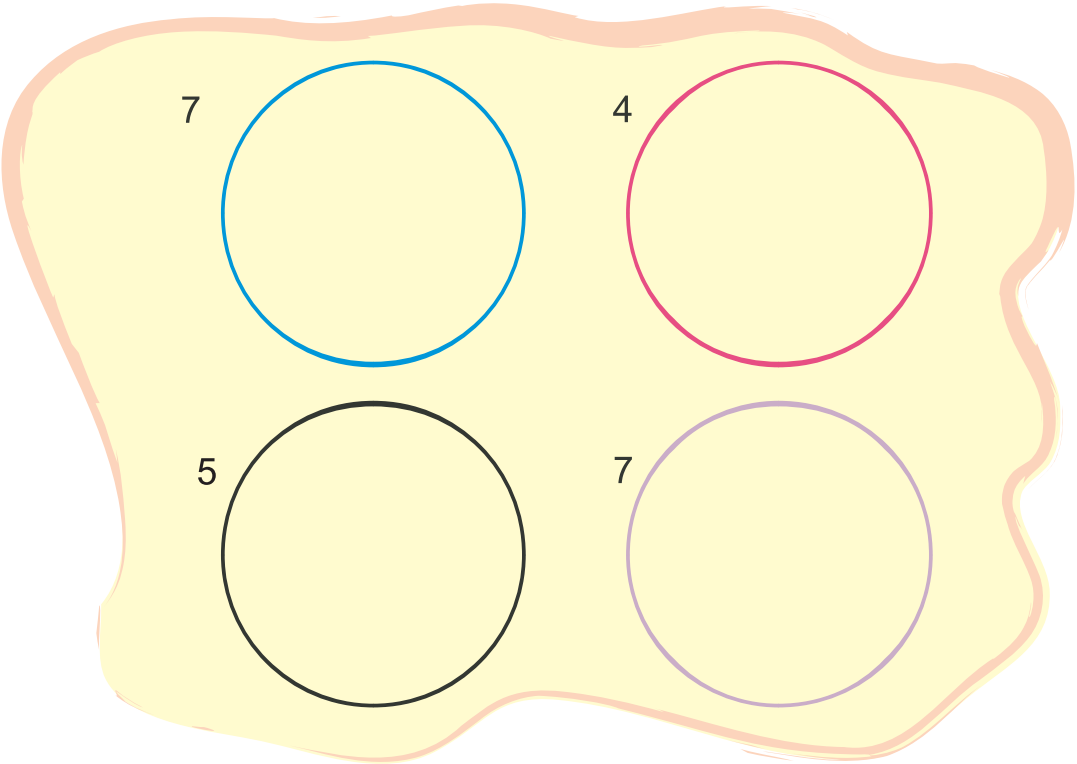
These numbers are the multiples of 4.

❖ Write any ten multiples of 5.

Dice Game

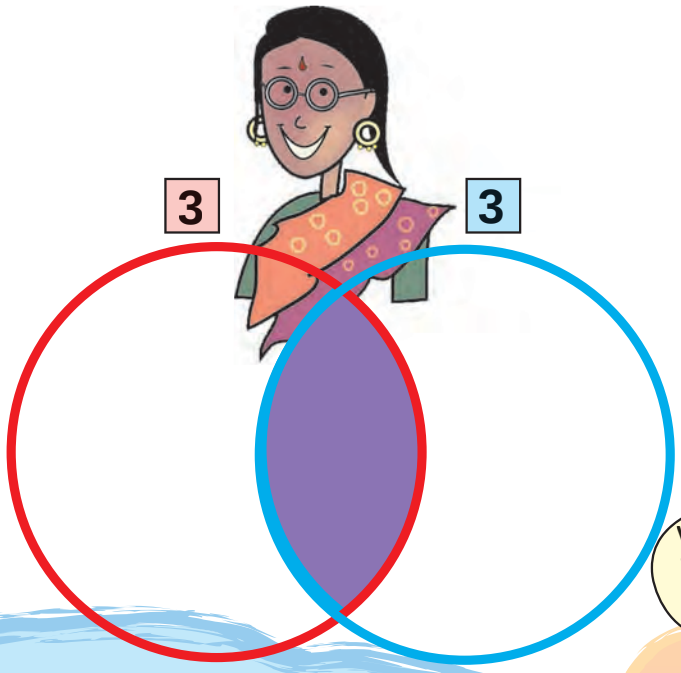
Throw two dice together. What are the numbers that turn up on the faces of the dice?

Mark a two-digit number using them .If it is a multiple of the numbers written next to the circles, you can write it in that circle. Then it is your friend's turn. The one who can write more numbers in 10 rounds is the winner.



Common Multiples

Think of a number .If it is multiple of 3 write it in the red circle. If it is a multiple of 5 write it in the blue circle.



Some numbers are multiples of both 3 and 5.

So we can say that they are **common** to both 3 and 5.

Think! If you write the multiples common to 3 and 5 in the purple part, then will they still be in both the red and the blue circles?

- ❖ Which is the smallest among these **common multiples**? _____

Repeat the game using the numbers 2 and 7

- ❖ Write the common multiples of 2 and 7.

Repeat the game by putting the multiples of 4, 6 and 5 in the circle.

- ❖ What common multiples of 5 and 6 did you write in the green part?
- ❖ What common multiples of 4 and 6 are written in the orange part?
- ❖ In which coloured part did you write the common multiples of 4, 6 and 5?
- ❖ What are the smallest common multiples of 4, 6 and 5?

Puzzle

Tamarind seeds

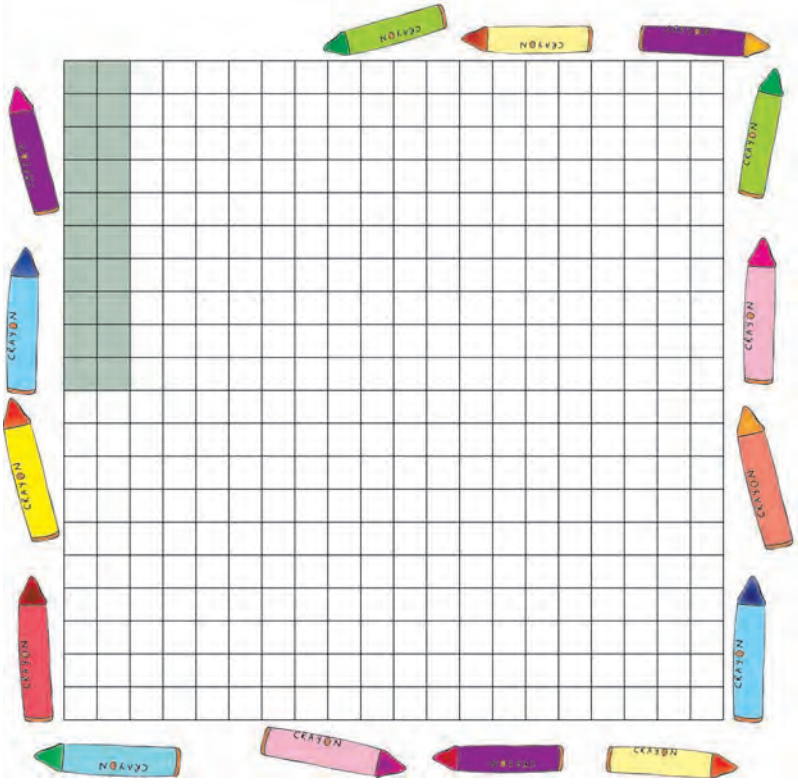
Sumiya took some tamarind (*imli*) seeds. She made groups of five with them, and found that one seed was left over. She tried making groups of six and groups of four. Each time one seed was left over. What is the smallest number of seeds that Sumiya had?

More Tamarind Seeds

Aamina is arranging 12 tamarind seeds in the form of different rectangles. Try to make more rectangles like using 12 tamarind seeds. How many different rectangles can you make?

If there are 15 tamarind seeds how many rectangles can you make?

Colouring the Grid



In the grid here, a rectangle made of 20 boxes is drawn.

The width of this rectangle is 2 boxes.

- ❖ What is its length?
- ❖ Colour a rectangle made of 20 boxes in some other way.
- ❖ What is the length and width of the rectangle of the rectangle you coloured?

❖ In how many ways can you colour a rectangle of 20 boxes?

Colour them all in the grid, and write the length and width of each rectangle you have coloured.

Bangles

There are 18 bangles on the rod. Ulfat is trying to group them. She can put them in 18 groups of 2,3,6, 9 and 18 – without any bangle being left.

❖ How many groups will she have if she makes groups of 1 bangle each?____

Now complete the table, for different number of bangles. For each number see what different groups can be made.

Number of bangles	Different groups we can make
18	1, 2, 3, 6, 9, 18
24	1, 2, ……..
5	
9	
7	
2	
10	
1	
20	
13	
21	

Fill the Chart

Complete the multiplication chart given here.

×	1	2	3	4	5	6	7	8	9	10	11	12
1												12
2						12						
3				12			21					
4			12							40		
5				20								
6		12										
7												
8									72			
9												
10												
11						66						
12	12											

Look at the green boxes in the chart. These show how we can get 12 by multiplying different numbers.

12= 4 × 3, so 12 is multiple of both 4 and 3. 12 is also a multiple of 6 and 2,as well as 12 and 1. We say 1, 2, 3, 4, 6, 12 are **factors** of 12.

12
4×3
6×2
1×12

- What are the factors of 10? _____
- Can you do this from the chart?
- What are the factors of 36? _____
- Find out the factors of 36 from the multiplication chart.

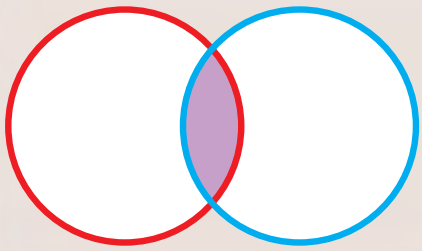
10
5×2

- What is the biggest number for which you can find the factors from this chart?

  What can you do for numbers bigger than that?

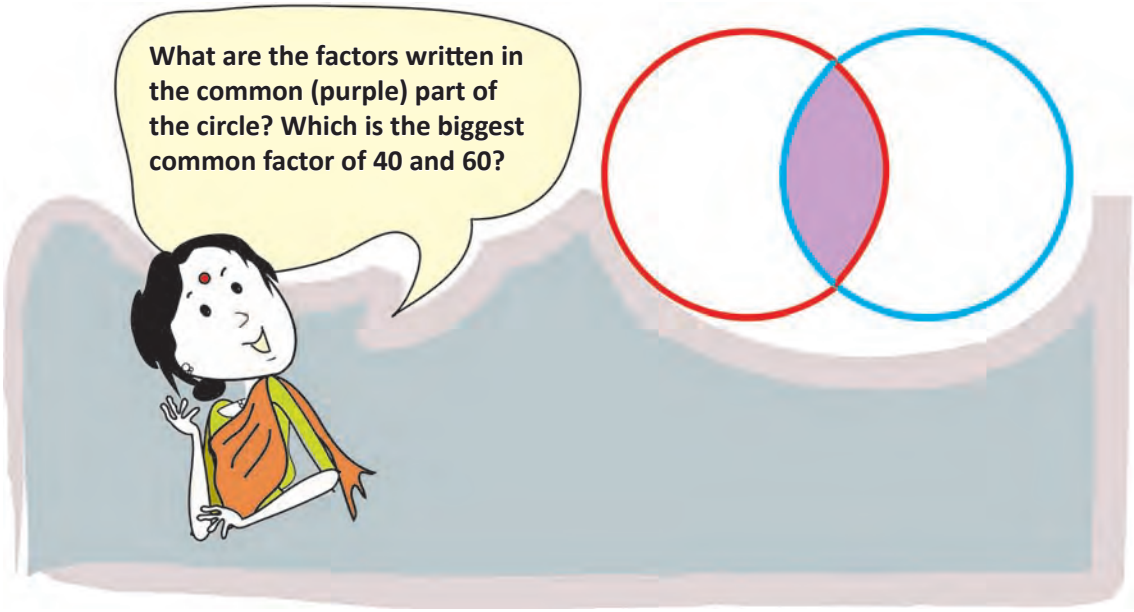
Common factors

Write the factors of 25 in the red circle and the factors of 35 in the blue circle



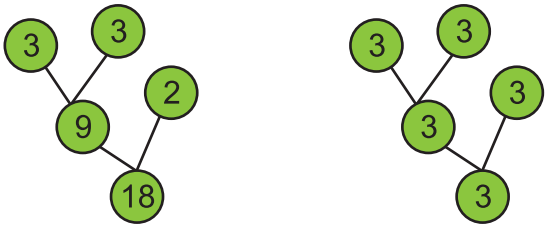
Which are the factors you have written in the common path (purple) of both circles? These are the common factors of 25 and 35.

Now write the factors of 40 in the red circle and 60 in the blue circle

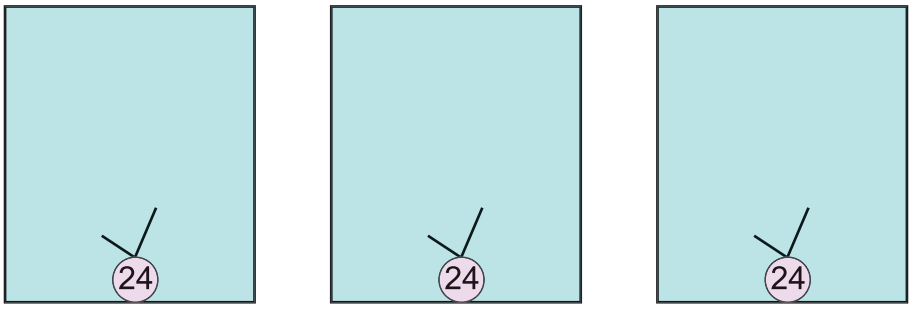


Factor Tree

Look at the factor tree. Now can you make another tree like this?

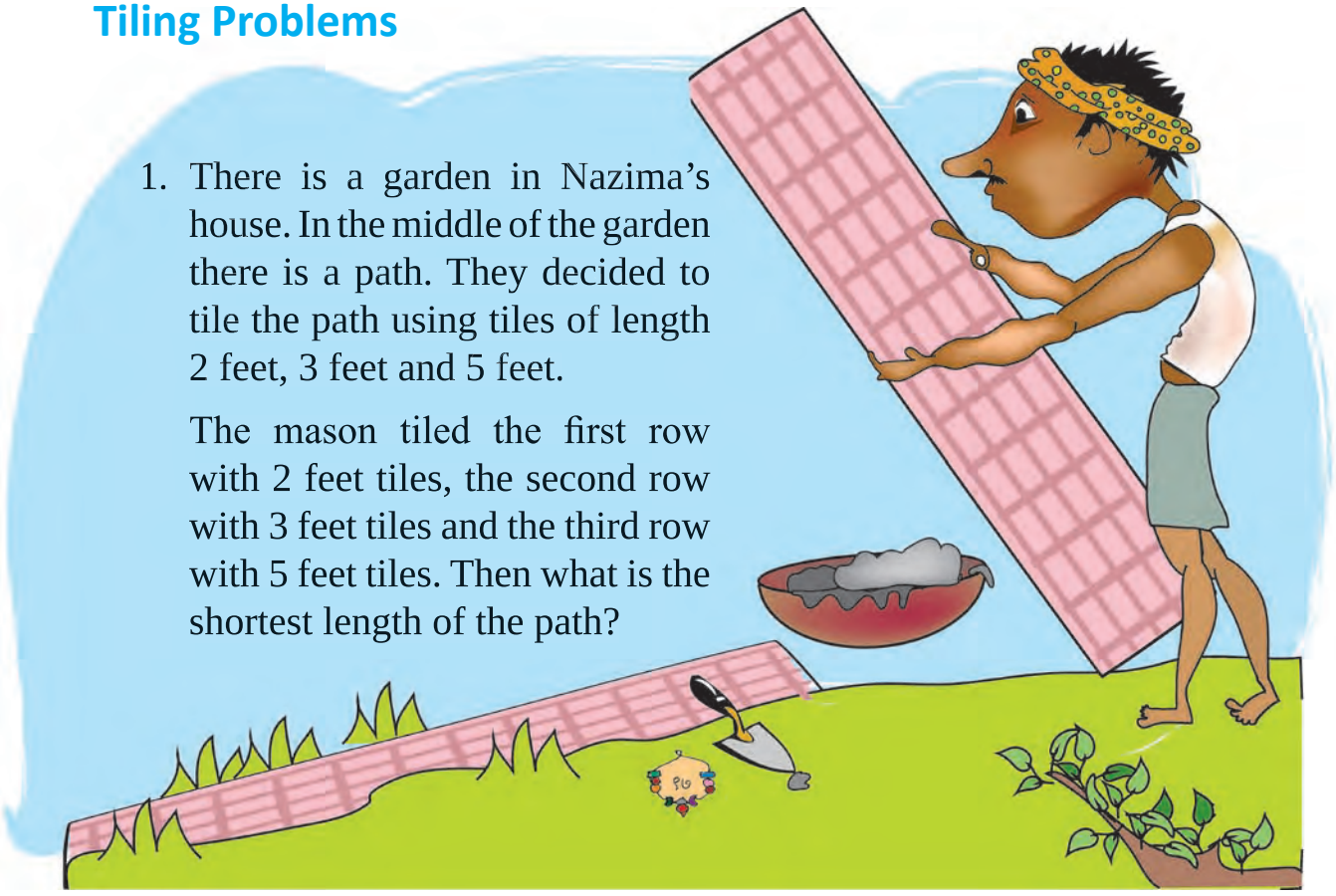


❖ In how many ways can you draw a factor tree for 24?
Draw three of them below?



Try drawing factors tree using another numbers also.

Tiling Problems

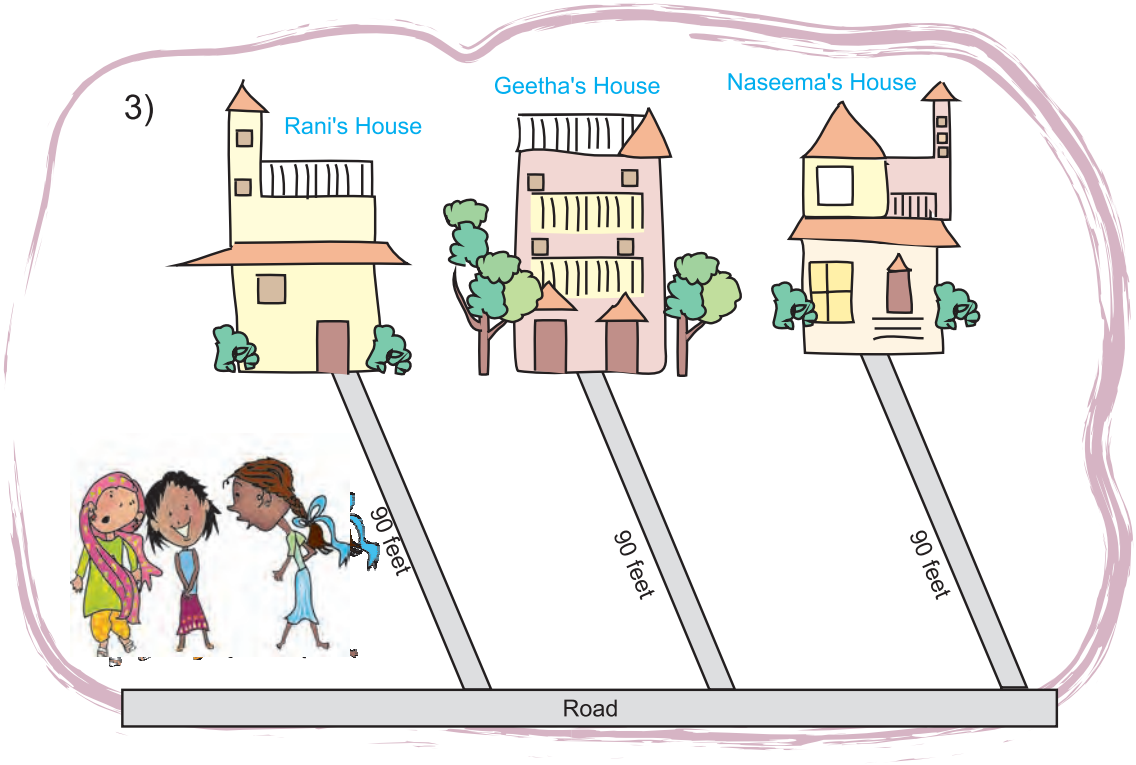


1. There is a garden in Nazima's house. In the middle of the garden there is a path. They decided to tile the path using tiles of length 2 feet, 3 feet and 5 feet.

   The mason tiled the first row with 2 feet tiles, the second row with 3 feet tiles and the third row with 5 feet tiles. Then what is the shortest length of the path?

2. Irfan has made a new house. He wants to lay tiles on the floor. The size of the room is 9 feet × 12 feet. In the market, there are three kinds of square tiles: 1 foot ×1 foot, 2 feet × 2 feet and 3 feet × 3 feet. Which size of tiles should he buy for his room, so that he can lay it without cutting?

3)



Asma, Sumaira, Rukaiya live near each other. The distance from their houses to the road is 90 feet. They decided to tile the path to the road .They all bought tiles of different designs and length. Asma bought the shortest tile, Sumaira bought the middle sized one and Rukaiya bought the longest one. If they could tile the path without cutting any of the tiles, what is the size of the tiles each has bought? Suggest 3 different solutions. Explain how you get this answer.

Now Let's Do These

Q.NO.1 Write the factors of:

(a) 16 (b) 28 (c) 54 (d) 80

Q.NO.2 Write the common factors of:

(a) 9 and 15 (b) 18 and 21 (c) 27 and 54

Q.NO.3 Write first five multiples of:

(a) 3 (b) 5 (c) 9 (d) 11

Q.NO.4 Write first two common multiples of:

(a) 5 and 6 (b) 4 and 3 (c) 4 and 8

(d) 3 and 5 (e) 3 and 7

Q.NO.5 Which of the following numbers are divisible:

(a) By 2 (b) By 4 (c) By 5

4940; 940; 25280; 562; 496; 3625

Q.NO.6 Find the H.C.F of:

(a) 12 and 16 (b) 45 and 36 (c) 28 and 40

(d) 40 and 75 (e) 49 and 36

Q.NO.7 Find the L.C.M of:

(a) 3, 4 (b) 6, 9 (c) 12, 18 (d) 9, 15 (e) 7, 8

ANSWERS

Q.NO.1 (a) 1, 2, 4, 8, 16
(b) 1, 2, 4, 7, 14, 28
(c) 1, 2, 3, 6, 9, 18, 27, 54
(d) 1, 2, 4, 8, 10, 16, 20, 40, 80.

Q.NO.2
(a) 1, 3 (b) 1, 3 (c) 1, 3, 9, 27.

Q.NO.3
(a) 3, 6, 9, 12, 25, _ _ _ _ _ _ _ _ _
(b) 5, 10, 15, 20, 25, _ _ _ _ _ _ _ _ _ _
(c) 9, 18, 27, 36, 45 _ _ _ _ _ _ _
(d) 11, 22, 33, 44, 55, _ _ _ _ _ _ _ _ _ _

Q.NO.4
(a) 30, 60 (b) 12, 24 (c) 8, 16 (d) 15, 30 (e) 21, 42

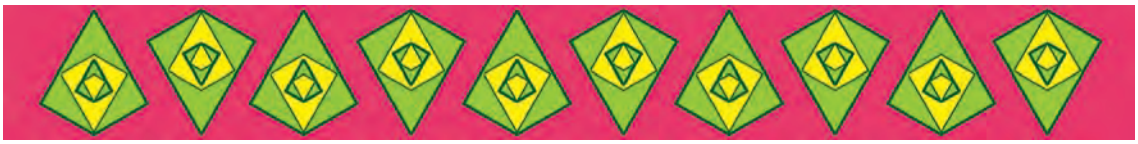
Q.NO.5
(a) 4940; 940, 25280, 562, 496
(b) 4940; 940, 25280, 496
(d) 4940; 940, 25280, 3625

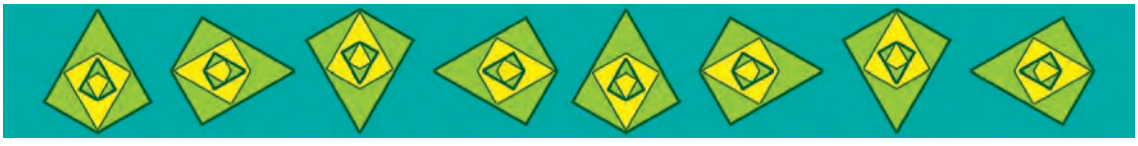
Q.NO.6
(a) 4 (b) 9 (c) 4 (d) 5 (e) 1

Q.NO.7
(a) 12 (b) 18 (c) 36 (d) 45 (e) 56

Can You See The Pattern?

Chapter 6





Now you use these two rules to make patterns with this  block, Also make your own rule.

Turns and Patterns

Look at this block  . We make three different rules to turn it clockwise and see the patterns.

Rule 1: Repeat it with a one- fourth turn.

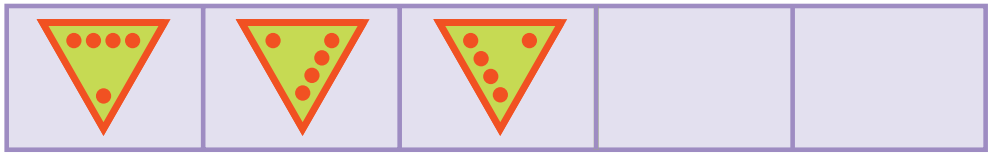
Rule 2: Repeat it with a half turn.

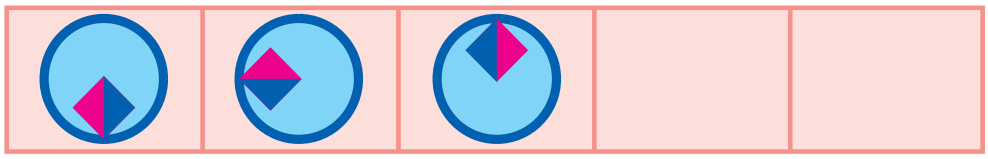
Rule 3: Repeat it with a three- fourth turn.

Practice Time

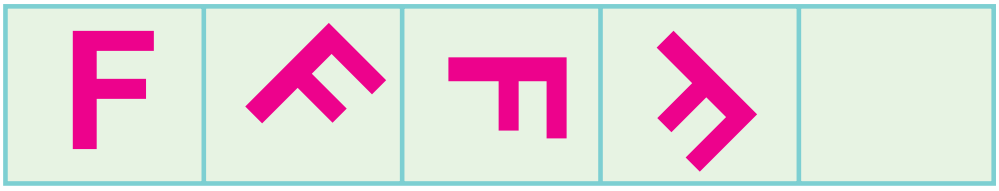
1. What should come next?

a) 

b) 

c) 

2. See this pattern

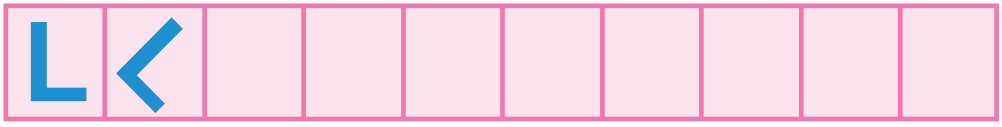
a) 

The **rule** of the pattern is – turning by 45° each time. Which will be the next?

Tick (✓) the right one.

 ( )  ( )  ( )

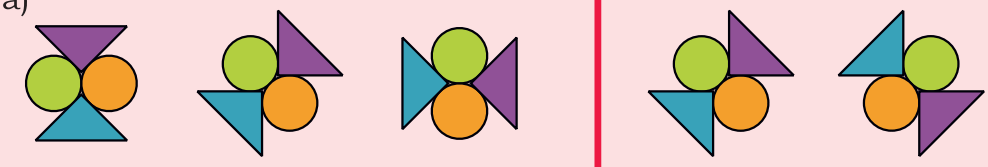
Using the same rule take it forward till you get back to what you started with.

b) 

c) 

3. Some patterns are given below on the left side of the red line. For each pattern, write the rule. Then choose what comes next from the right side of the line and tick (✓) it.

a)

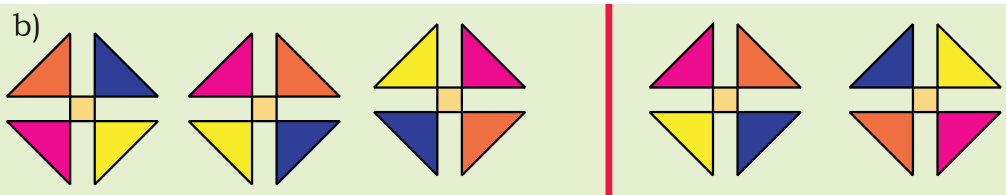


Rule: _____

_____

( ) ( )

b)

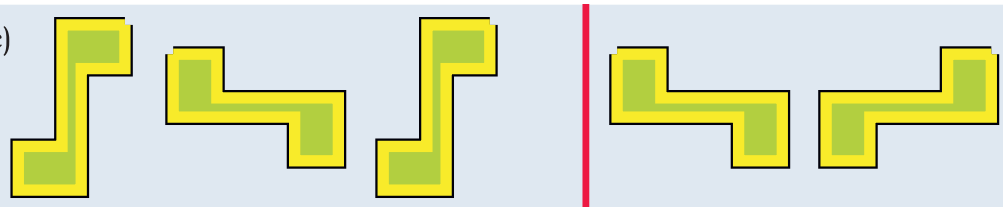


Rule: _____

_____

( ) ( )

c)



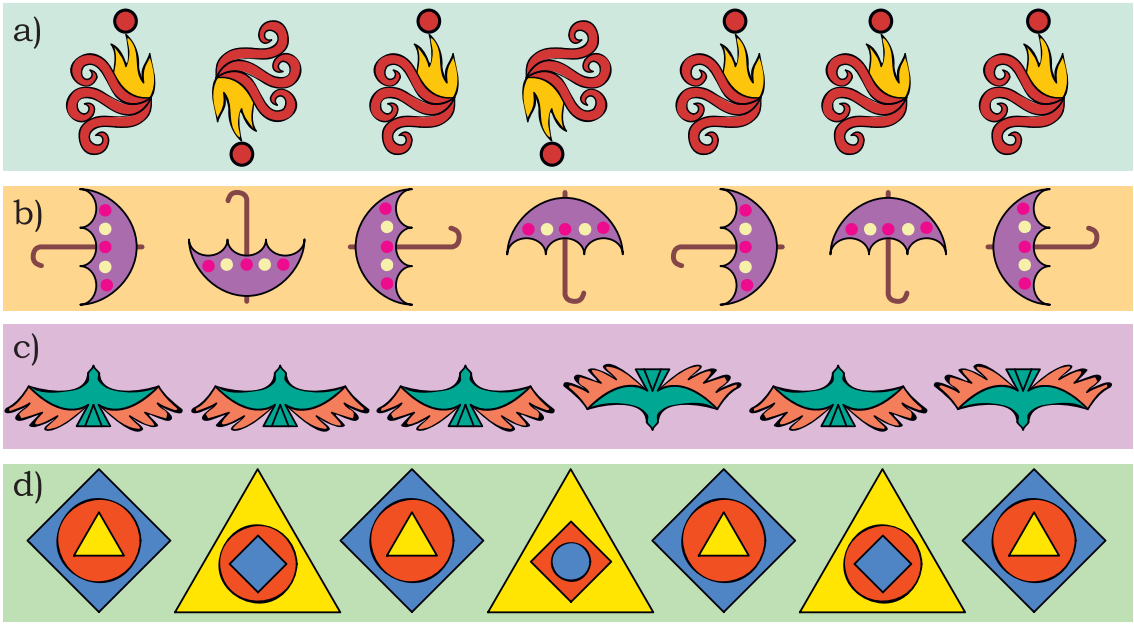
Rule: _____

_____

( ) ( )

Look For a Pattern

Mark that picture which is breaking the rule. Also correct it.



Magic Squares

Do you remember magic triangles? Come now, let's make some magic squares.

❖ Fill this square using all the numbers from 46 to 54.

		49
46		
	52	47

Rule: The total of each line is 150

	25	

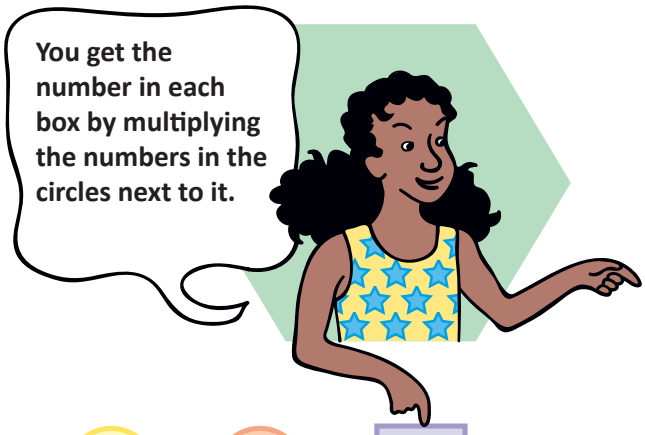
❖ Fill this square using all the numbers from 21 to 29.

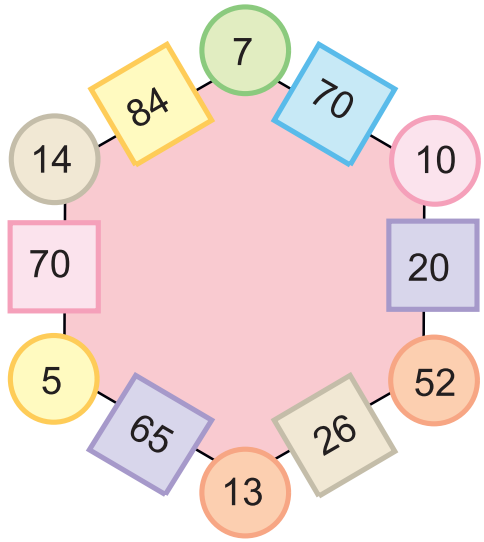
Rule: The total of each side is 75.

Magic Hexagons

Look at the pattern of numbers in the Hexagons.

Each side has 2 circles and 1 box.





5 × 13 = 65

× = 70

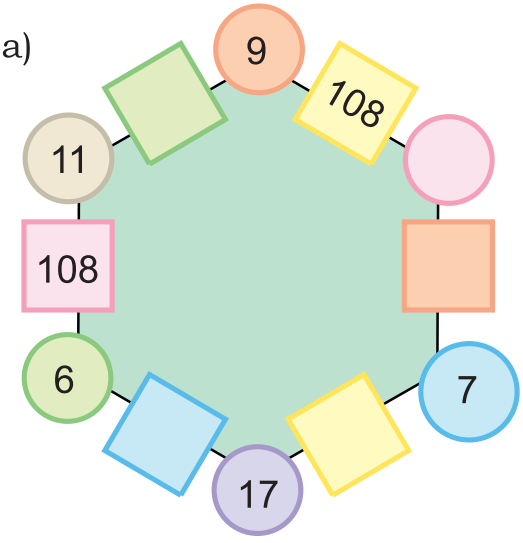
Look at the number 65 in the box.

Which are the circles next to it?

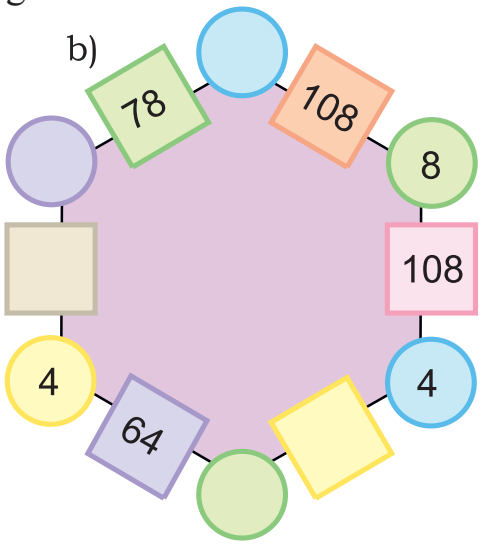
Can you see how the rule works?

❖ Use the same rule to fill the hexagons below.

a)



b)



Now you also make your own hexagon.

Numbers and Numbers

24 + 19 + 37 = 37 + 24 + 19

215 + 120 + 600 = 600 + 120 + 215

❖ Are they equal?

❖ Fill in the blank spaces in the same way.

a) 14 + + = 34 + 14 + 20

b) + 42 + = 65 + + 80

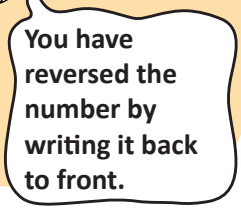
c) 200 + 300 + = + 400 +

❖ Now, look at this____ 48 × 13 = 13 × 48

Check if it is true or not.

Left Right – Same to Same

Take a number, say 43
Now turn it back to front 34
Then add them together 77
77 is one such special number.
There are many such numbers.



Take another number 48
Now turn it back to front 84
Then add them together 132
Is this a special number? No! Why not?
OK, carry on with the number 132
Again turn it front to back 231
Then add the two together 363
Ah! 363 is a special number.

So we see that to get a special numbers we sometimes need more steps.

❖ Now try and change these numbers into special numbers –

a) 28 b) 132 c) 273

Now let's use words in a special way,

N O L E M O N S N O M E L O N

S T E P N O T O N P E T S

Did you notice that it reads the same from both sides – right to left and left to right?

Now try and use words in a special way.

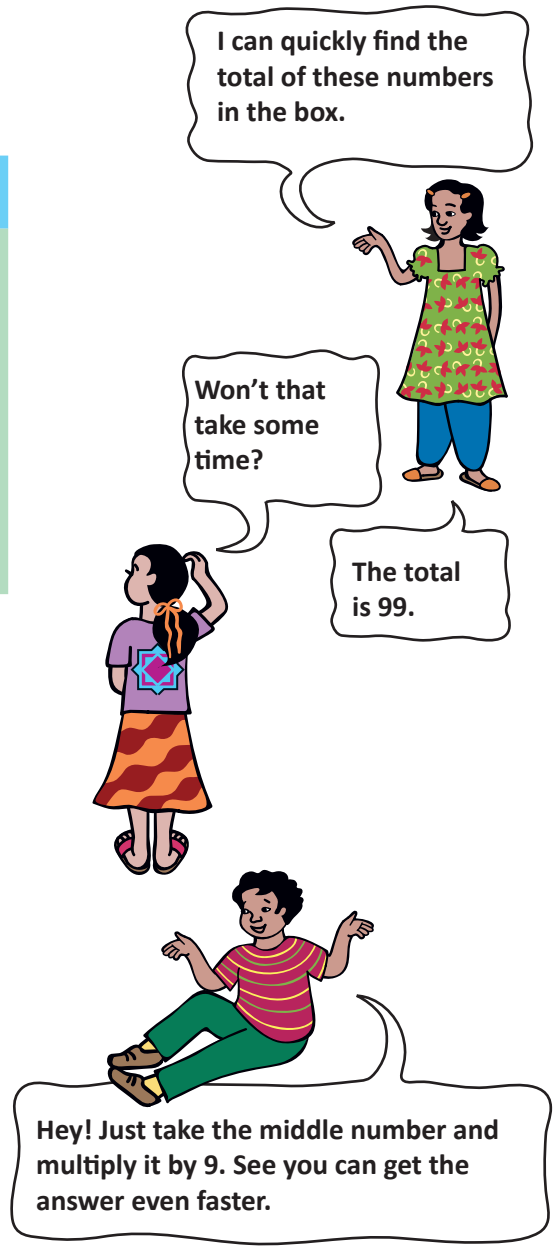
Calendar Magic

Look at the calendar below.

Let us mark 3 × 3 [9 dates] on the calendar and see some magic.

s	m	t	w	th	f	s
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	20
22	23	24	25	26	27	28
29	30	31				

Take the smallest number	3
Add 8 to it	+8
=	11
Multiply it by 9	×9
Total	99



Now you choose any 3×3 box from a calendar and find the total in the same way. Play this game with your family.

Some More Number Patterns

❖ Take any number. Now multiply it by 2, 3, 4…… at every step. Also add 3 to it at each step. Look at the difference in the answer. Is it the same at every step?

12	×	2	+	3	=	27
12	×	3	+	3	=	39
12	×	4	+	3	=	51
12	×	5	+	3	=	63
12	×		+	3	=	
	×	7	+	3	=	
	×		+	3	=	
	×		+		=	

Now try doing it with some other number and also take a different number to add at each step.

❖ Look at the numbers below. Look for the pattern. Can you take it forward?

(9 – 1) ÷ 8 = 1

(98 – 2) ÷ 8 = 12

(987 – 3) ÷ 8 = 123

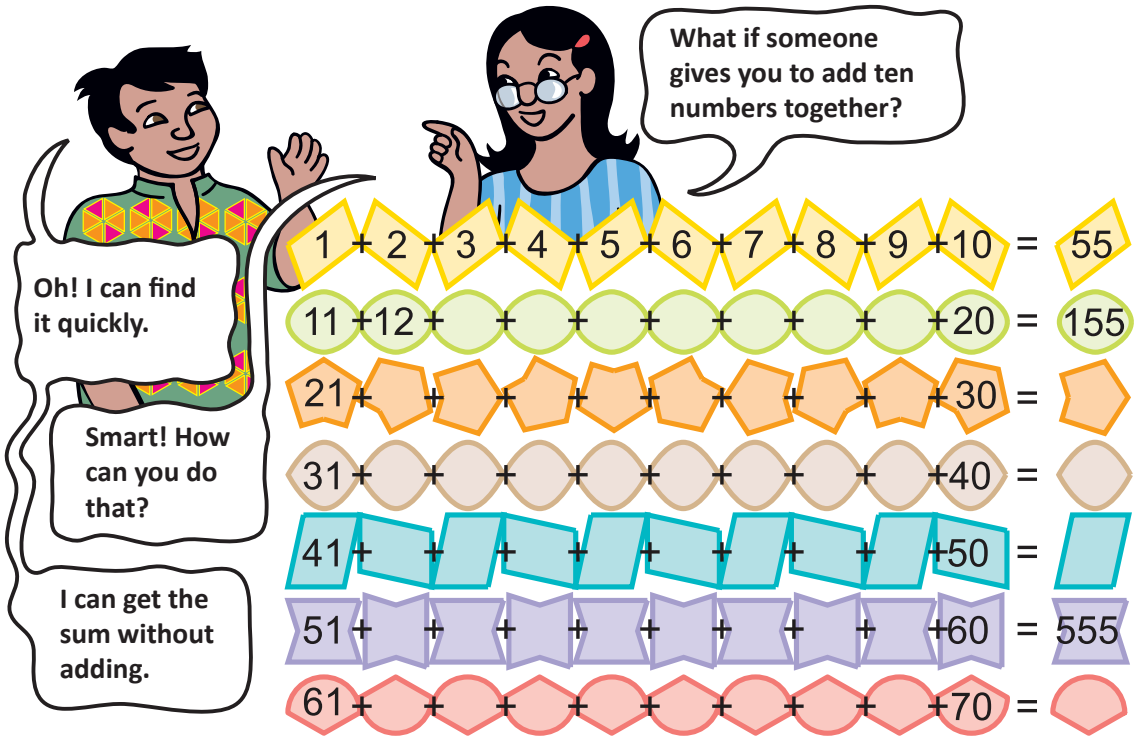
(9876 – 4) ÷ 8 = ____

(98765 – 5) ÷ 8 = ____

(_____ – ___) ÷ 8 = ____

(_____ – ___) ÷ 8 = ____

Smart Adding



❖ Did you notice some patterns in the answers?

Fun with Odd Numbers

Take the first two numbers. Now add them, see what you get.

Now, at every step, add the next odd number.

1 + 3 = 4 = 2 × 2

1 + 3 + 5 = 9 = 3 × 3

1 + 3 + 5 + 7 = 16 = 4 × 4

1 + 3 + 5 + 7 + 9 = ___ = ___ × ___

1 + 3 + 5 + 7 + 9 + 11 = ___ = ___ × ___

1 + 3 + 5 + 7 + 9 + 11 + 13 = ___ = ___ × ___

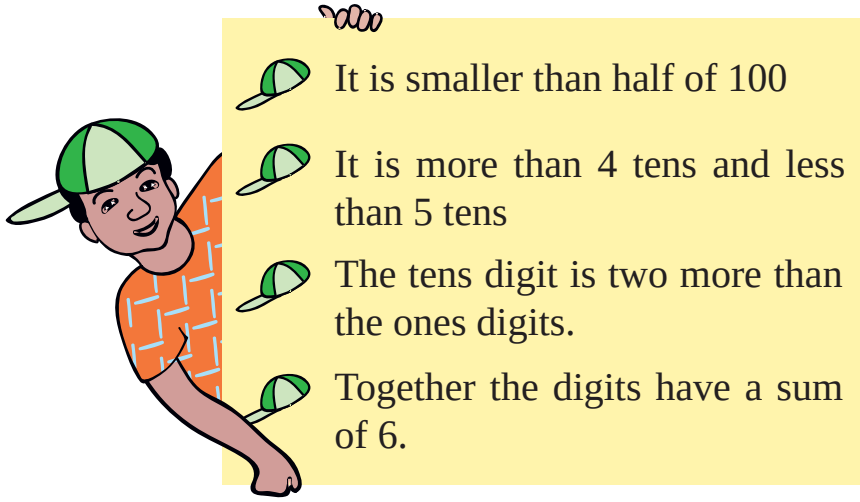
How far can you go on?

Secret Numbers

Jaffar and Asiya were playing a guessing game by writing clues about a secret number. Each tried to guess the other's secret number from the clues.

Can you guess their secret numbers?

- It is larger than half of 100
- It is more than 6 tens and less than 7 tens
- The tens digit is one more than the ones digit
- Together the digits have a sum of 11



❖ Write a set of clues for a secret number of your own. Then give it to a friend to guess your secret number.

Number Surprises

a. Ask your friend - Write down your age. Add 5 to it. Multiply the sum by 2 . Subtract 10 from it. Next divide it by 2. What do you get?

Is your friend surprised?

b.

☆ Take a number ☐

☆ Double it ☐ × 2 = ☐

☆ Multiply by 5 ☐ × 5 = ☐

☆ Divide your answer by 10 ☐ ÷ 10 = ☐

c) Look at the pattern of numbers and take it forward.

$$1 = 1 \times 1$$
$$121 = 11 \times 11$$
$$12321 = 111 \times 111$$
$$1234321 = ?$$

d) ☆ Take a number ☐

☆ Double it ☐ × 2 = ☐

☆ Again double it ☐ × 2 = ☐

☆ Add the number you took first to the number. = ☐ × ☐ = ☐

☆ Now again double it. ☐ × 2 = ☐

☆ Divide by 10 ☐ × 10 = ☐

❖ Now make your own number surprises.

Now Let Us Do These

Q.NO. 1 Fill the 3 × 3 square using all the number from 1 to 9 so that total of each row, column and diagonal is 15.

	5	

Q.NO. 2 Write the next number in the pattern:

a. 1, 2, 4, 8, 16, _____

b. 1, 2, 3, 4, 9, 16, _____

c. ⌊, ⌋, ⌉, ⌈, _____

d. 1, 2, 2, 4, 8, 32, _____

Q.NO. 3 Complete the pattern:

$$1 = 1 = 1 \times 1$$

$$1 + 2 + 1 = 4 = 2 \times 2$$

$$1 + 2 + 3 + 2 + 1 = 9 = 3 \times 3$$

___ + ___ + ___ + 4 + ___ + ___ + ___ = 16 = 4 × 4

1 +2 + 3 + 4 + 5 + 4 + 3 + 2 +1 = ___ = ___ × ___

__ +__ + __ + __ + __ + __ + __ + __+ __ + __ + __ = 36 = __ × __

Q.NO. 4 Fill in the blanks:

a) 4 + 7 + 9 = 7 + ___ + 9

b) 17 + 24 + 36 = 36 + 24 + ___

c) 9 + 11 + 21 = ___ + ___ + 9

d) 45 × 35 = 35 × ___

e) 45 + 35 = ___ + 45

Q.NO. 5 Fill in the blanks:

0×1 ×2 +1 = 1 = 1 × 1 × 1

1 ×2 × 3 + 2 = 8 = 2 × 2 × 2

2 × 3 × 4 + 3 = 27 = 3 × 3 × 3

3 × 4 × 5 + 4 = 64 = 4 × 4 × 4

4 × 5 × 6 + 5 = 125 = __ × __ × __

__ × __ × __ + 6 = 216 = 6 × 6 × 6

__ × __ × __ + __ = 343 = __ × __ × __

Answers

Q.NO.1

6	7	2
1	5	9
8	3	4

Q.NO. 2 (a) 32 (b) 27 (c) ∟ (d) 256 (Product of previous 2 terms)

Q.NO.3 $1 + 2 + 3 + 4 + 3 + 2 + 1 = 16 = 4 \times 4$

$1 + 2 + 3 + 4 + 5 + 4 + 3 + 2 + 1 = 25 = 5 \times 5$

$1 + 2 + 3 + 4 + 5 + 6 + 5 + 4 + 3 + 2 + 1 = 36 = 6 \times 6$

Q.NO.4 (a) $4 + 7 + 9 = 7 + 4 + 9$

(b) $17 + 24 + 36 = 36 + 24 + 17$

(c) $9 + 11 + 21 = 21 + 11 + 9$

(d) $45 \times 35 = 35 \times 45$

(e) $45 + 35 = 35 + 45$

Q.NO.5 $4 \times 5 \times 6 + 5 = 125 = 5 \times 5 \times 5$

$5 \times 6 \times 7 + 6 = 216 = 6 \times 6 \times 6$

$6 \times 7 \times 8 + 7 = 343 = 7 \times 7 \times 7$

Boxes and Sketches

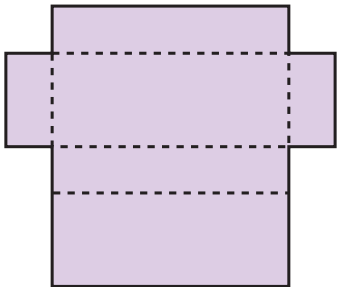
Chapter 7

Sweet Box

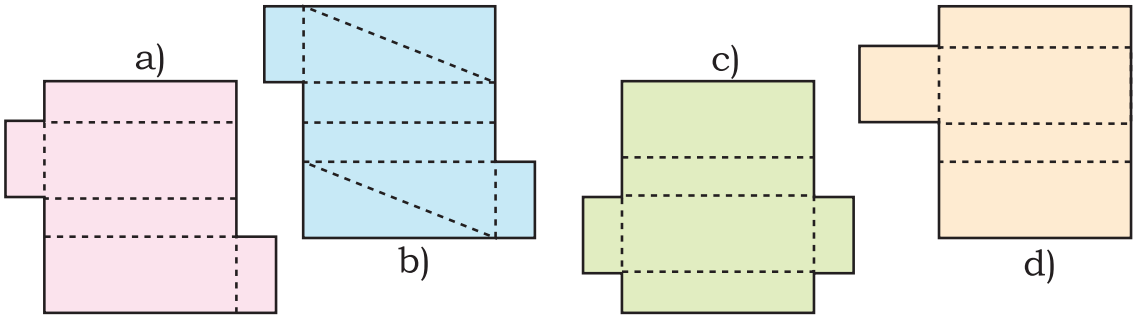
Ulfat went to buy sweets. The shopkeeper took a paper cut-out and quickly made a lovely pink for the sweets!

❖ Look at the photo ad make your own box. Use the cut –out on page. How fast can you fold it?

After coming home Ulfat unfolded the box. She removed the extra flaps so the cut –out looked like this.



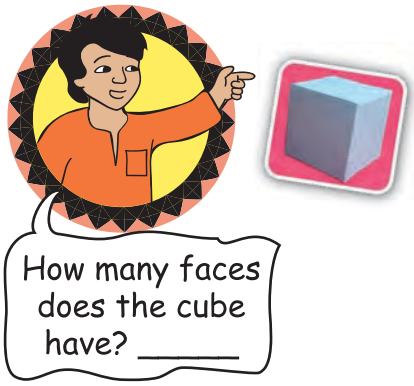
❖ She made four shapes. Each is to be folded along the dotted lines. You have to find out which of these can be made into a box.

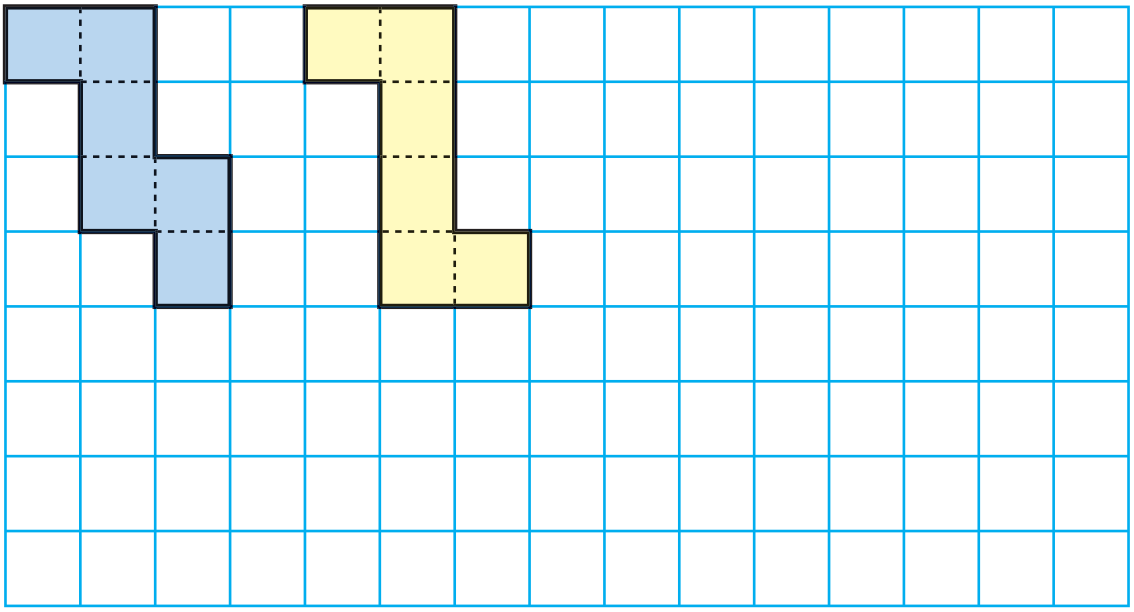


Shapes that Fold into a Cube

a. Javaid wants to make a paper cube using a squared sheet. He knows that all the faces of a cube are squares.

He draws two different shapes.



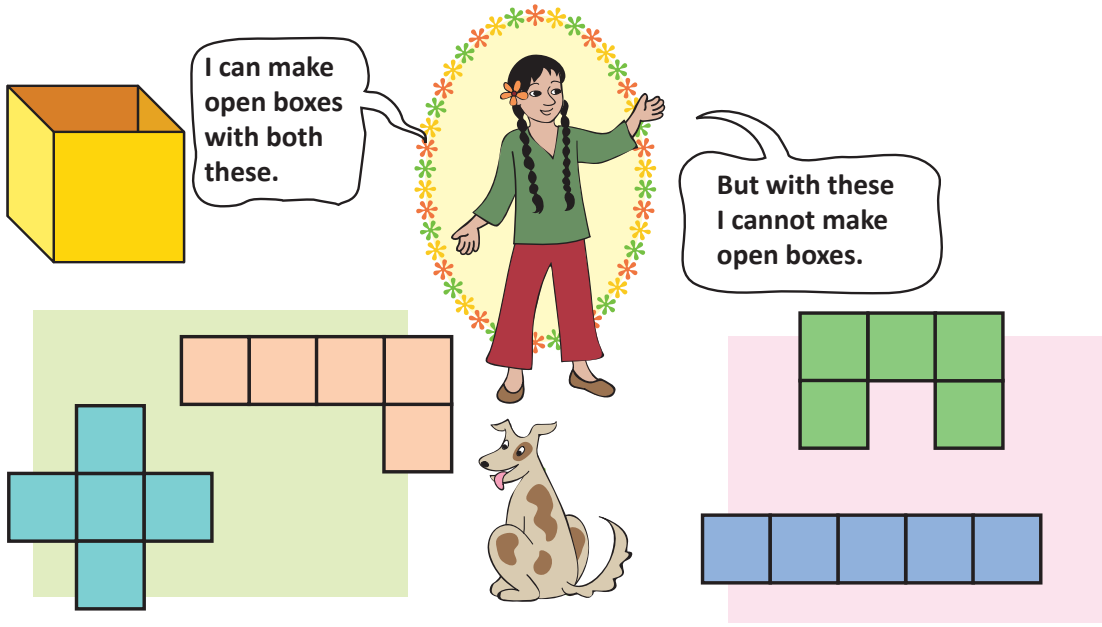


- Will both these shapes fold into a cube?
- Draw at least one more shape which can fold into a cube.
- What will be the area of each face of the cube?
- Draw one shape which will not fold into a cube.
- Look around and discuss which things around you look like a cube. List a few.

Shapes for an Open Box

Remember the puzzles with five squares in chapter 2? You saw 12 different shapes made with five squares. (Page 33)

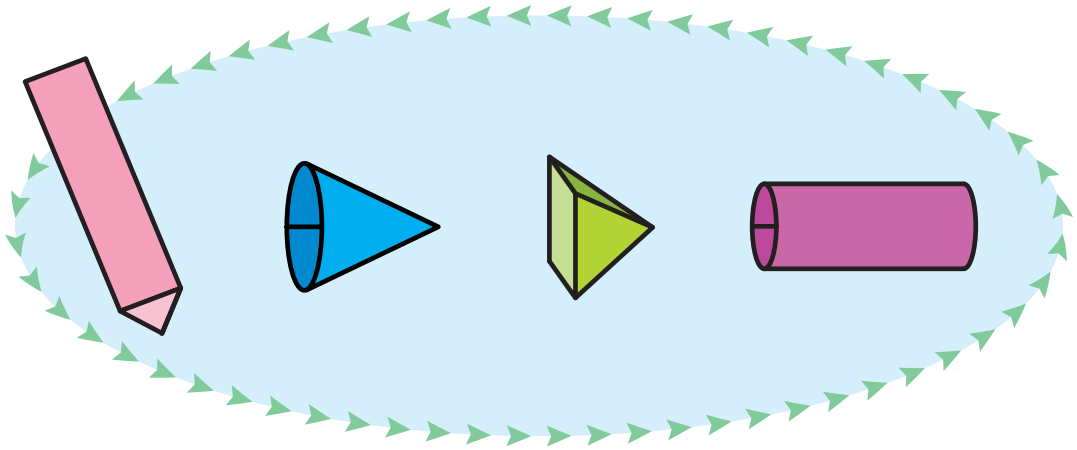
If you cut those shapes and fold them, some of those fold into an open box (box without a top)

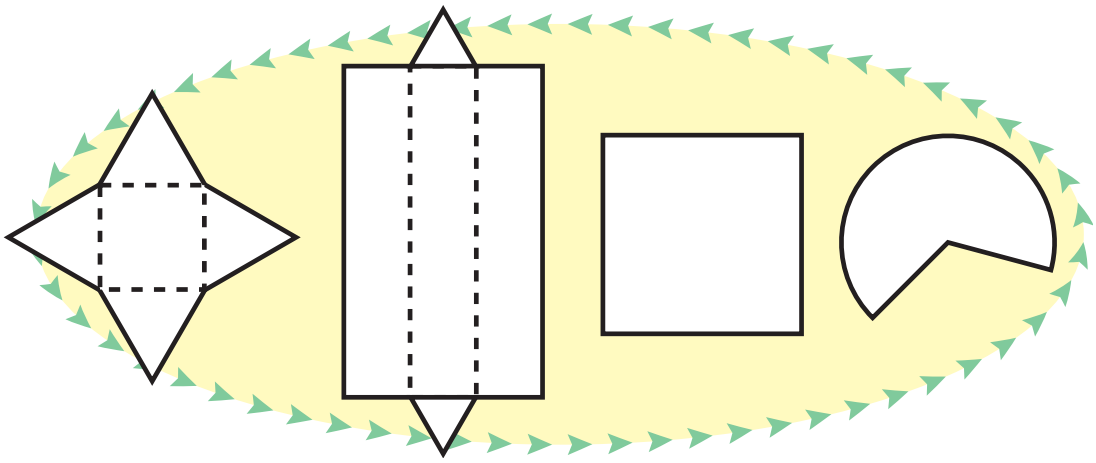


- Find out which off the other 8 shapes (on page 33) can be folded to make an open box.
- Draw more shapes which will not fold to make an open box.

Boxes and Shapes

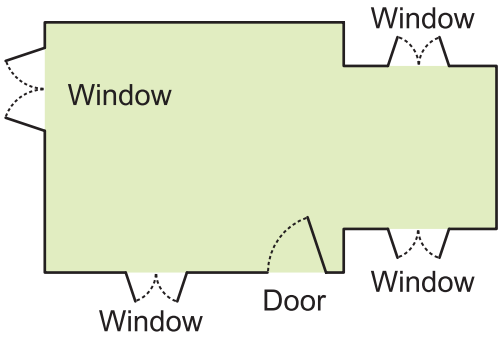
All boxes are not cubes. Here are some different kinds of boxes. Match each shape below with a box into which it will fold.





Floor Maps

For making a house a floor map is first made. Have you ever seen a floor map? Here is a floor map of Ahmad's house. It shows where the windows and the doors are in the house.

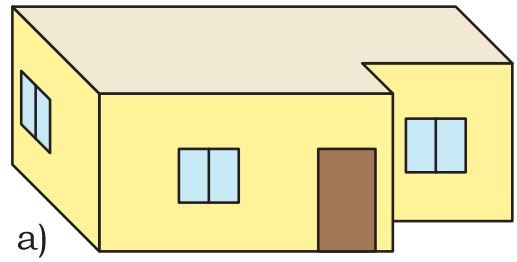


❖ Which is the front side of her house? How many windows are there on the front side?

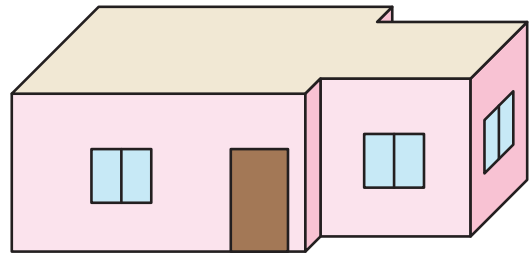
From the floor map we cannot make out what her house really looks like or how high the windows are. So we look for a special way of drawing the house which is deep – to show the length, width and height.

Here are four **deep drawings** of houses.

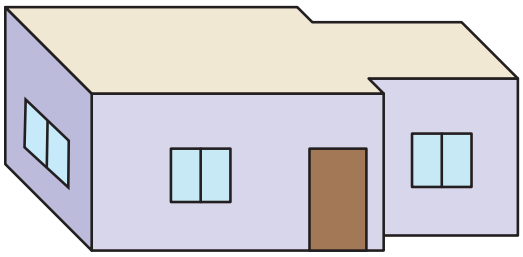
❖ Which one is Ahmad's house?



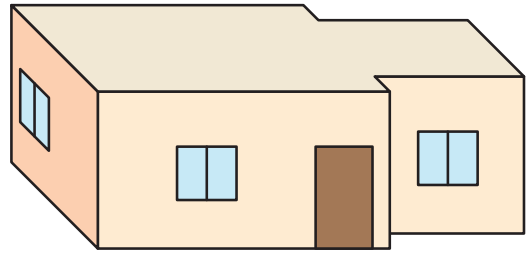
a)



b)



d)

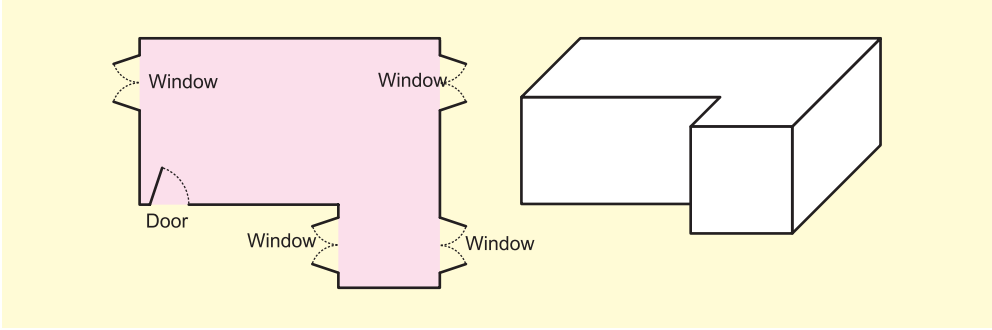


c)

❖ Why do the other three deep drawings not match the floor map? Discuss.

Practice Time

1. Look at this map of a house. Make doors and windows on the deep drawings of this house.



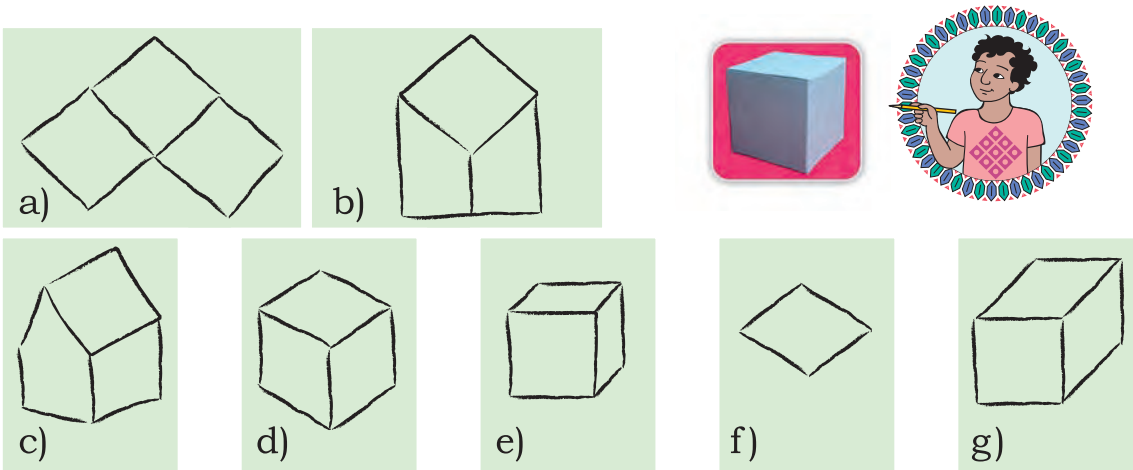
- ❖ Are there any windows you couldn't show on the deep drawings? Circle them on the floor map.

2. Try to make a floor map of your own house.

A Deep Drawing of a Cube

Altaf and his friends made deep drawings of a cube.

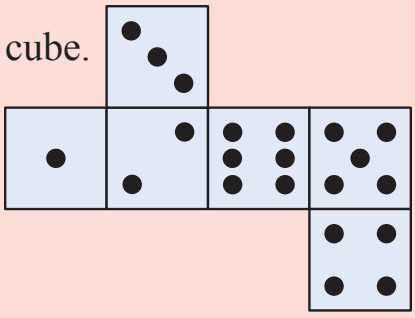
These are their drawings.



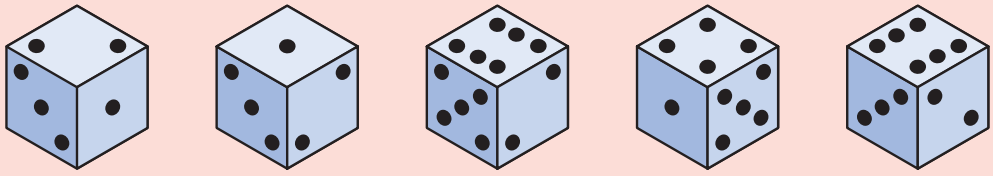
- ❖ Which of the drawings look correct to you? Discuss.
- ❖ Can you add some lines to make drawing f) in to a deep drawing of the cube?

Puzzle

This cut – out is folded to make a cube.



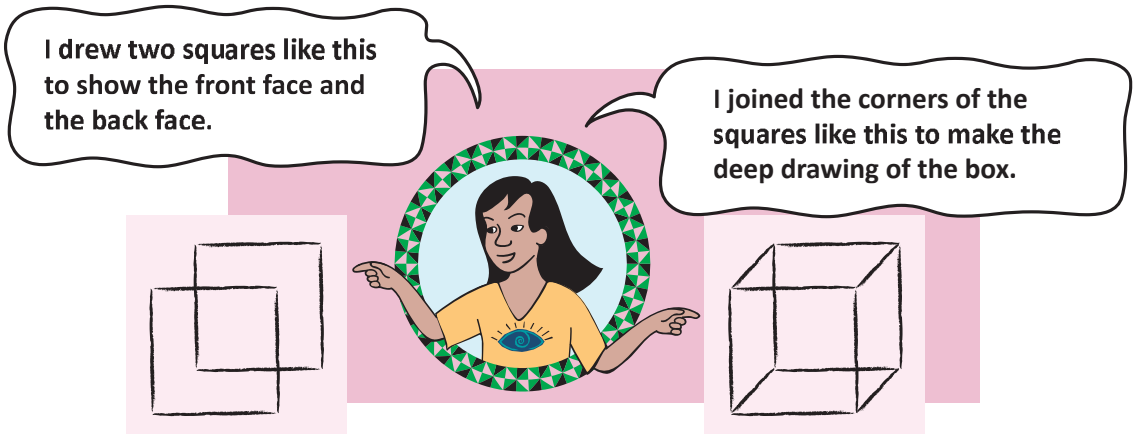
Which of these are the correct deep drawings of that cube?



A Simple Way to Draw a Cube

Asifa wants to make a deep drawing of this cube.

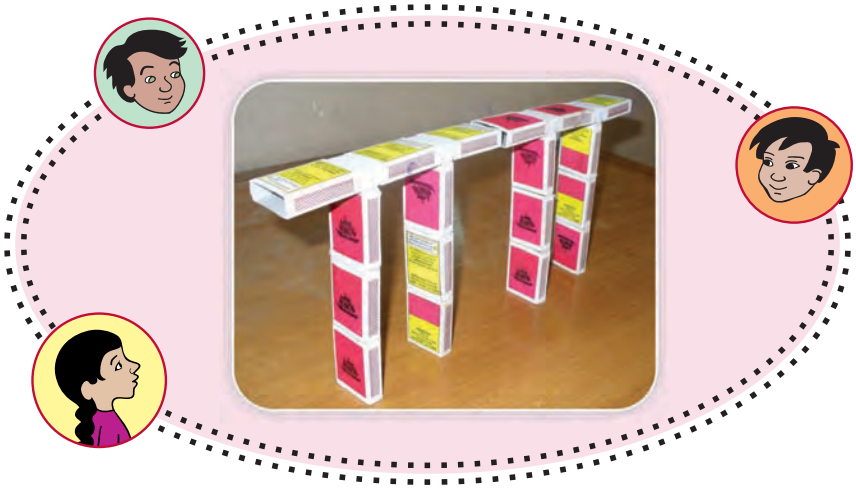
She draws the cube like this.



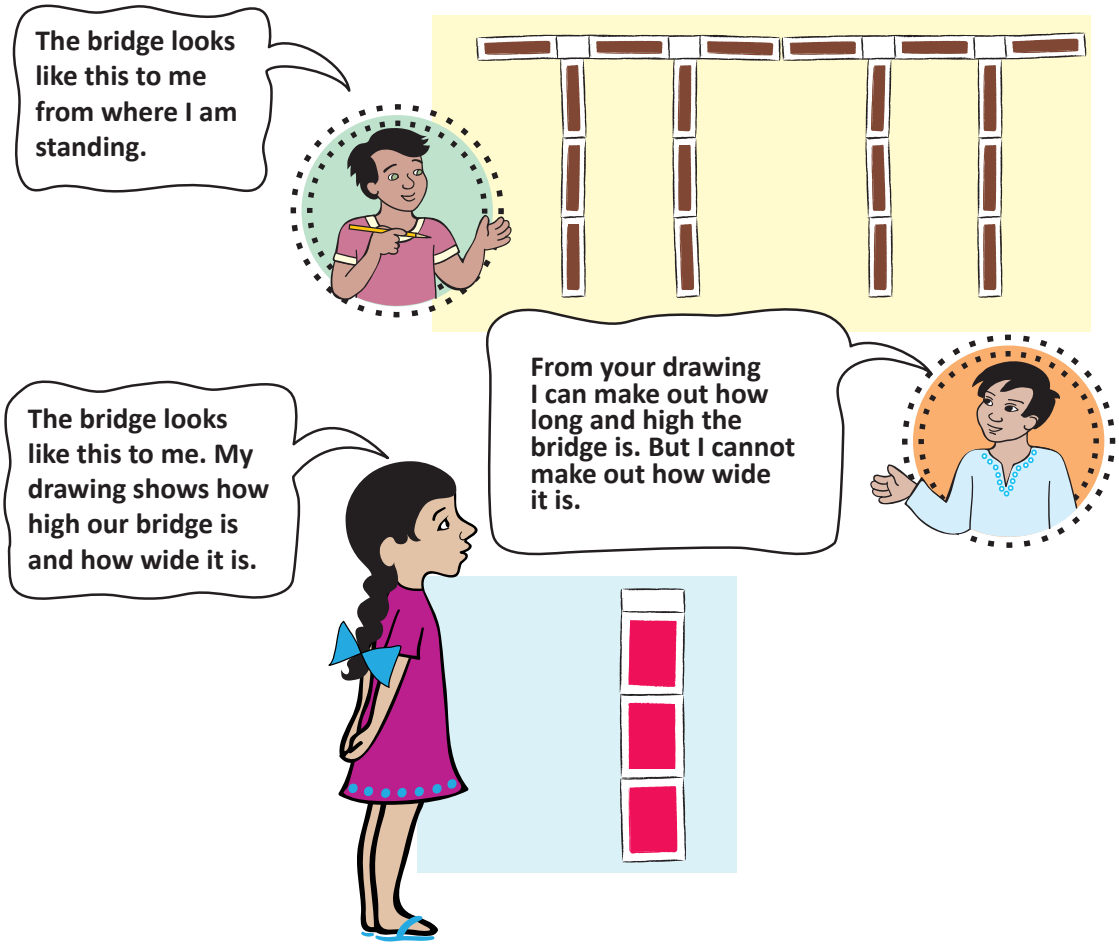
❖ In the same way make a deep drawing of a box which looks like this.

Matchbox Play

Irfan, Zubair and Sheeba make this bridge using matchboxes.

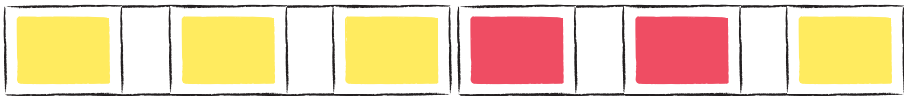


Irfan and Sheeba made drawings of the bridge.



❖ If you look at the bridge from the top, how will it look? Choose the right drawing below:

a) 

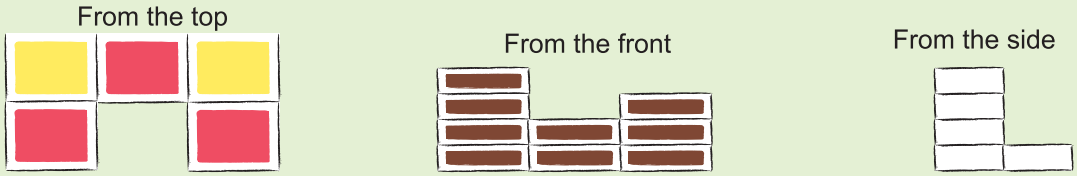
b) 

❖ Look at the photo and try to make a deep drawing of this bridge.

Practice Time

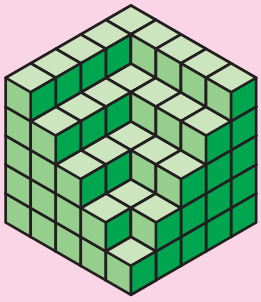
1. Make drawings to show how the bridge will look
   - ❖ From the top
   - ❖ From the front
   - ❖ From the side

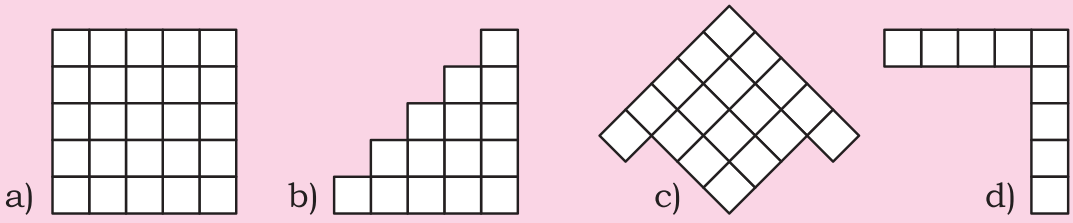
2. Make a matchbox model which looks like this.



❖ Also make a deep drawing of the model in your notebook.

3. How many cubes are needed to make this interesting model?
   - ❖ Here are some drawings of the model. Mark the correct top view drawing with 'T' and the correct side view drawing with 'S'.





Now Let us Do These

Q.NO 4 Make a paper cube and answers the following questions

a. How many faces a cube has?

b. How man faces of a cube are squares?

c. How many corners does a cube have?

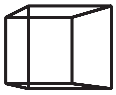
d. How many edges does a cube have?

Q.NO 5 Give three examples of a cube in our daily life.

Q.NO.6 Boxes have different names. So fill in the blanks the suitable name.

a. An ice-cream _____ 

b. A gas _____ 

c. A _____ sweet box. 

d. A _____ of Egypt. 

Answers

Q. NO. 4	(a) 6 (b) 6 (c) 8 (d) 12
Q.NO. 5	Dice, Chalk box, Sweet box etc
Q.NO.6	(a) Cone (b) Cylinder
	(c) Cubical (d) Pyramid

Tenths and Hundredths

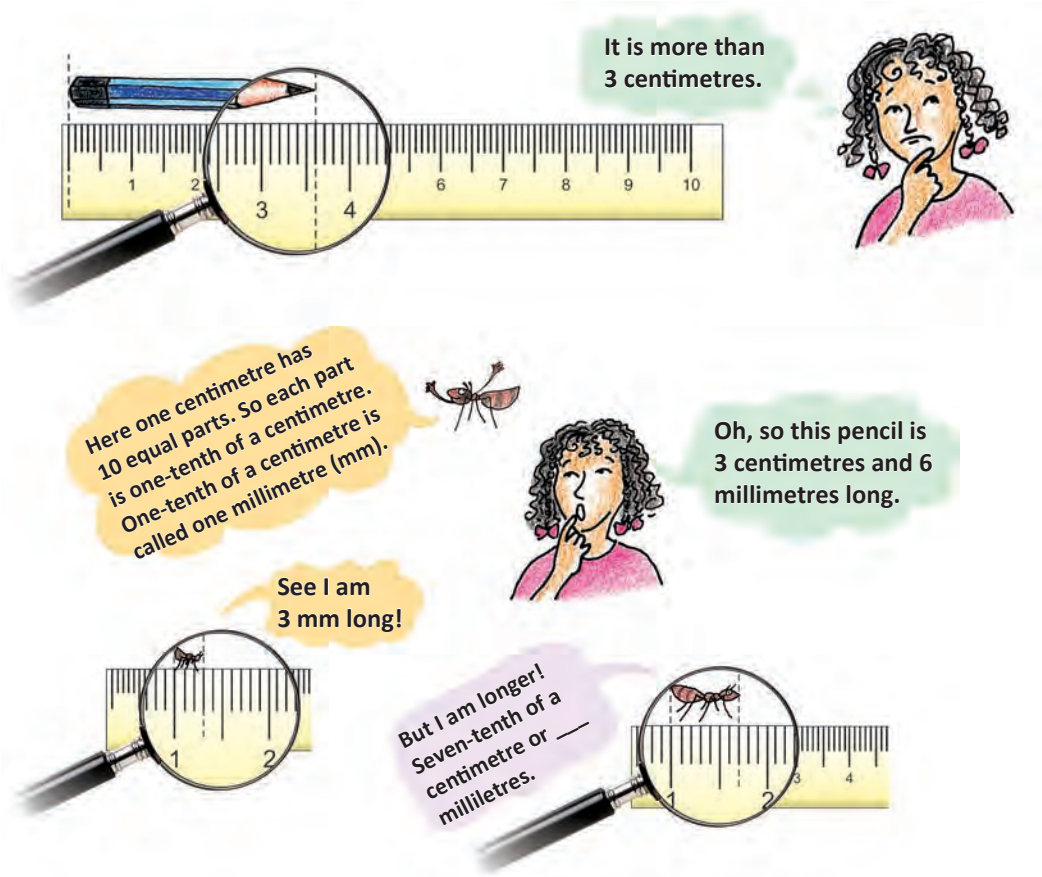
Chapter 8

What was the length of the smallest pencil you have used?

How long is the pencil? Guess _____ cm 

Measure it using a scale .how good is your guess?

We can see that Sahil used a lens to make it look bigger.



We also call one – tenth of a centimeter as 0.1 centimetre. We read it as ‘zero point one centimetre ’.

So one **millimetre** is the same as 0.1 cm.

❖ What is the length of this pencil? _____ mm.

What is its length in centimetres?

Frogs

Have you seen frogs? Where? How many different types of frogs have you seen? Are all the frogs of the same length? Here are two interesting examples.

Gold Frogs

This kind of frog is among smallest in the world. Its length as only 0.9 cm!

Bull Frog

But this is among the frogs, It is as long as 30.5 cm!

Guess how many such frogs can sit on your little finger!

What does 0.9 cm mean? It is the same as _____ millimetres. We can also say this is nine – tenths of a cm. Right?

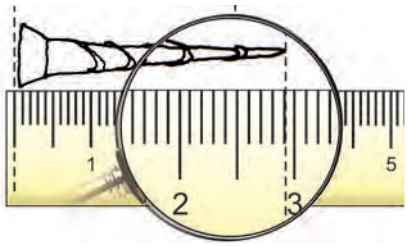
So 30.5 cm is the same as ____ cm and millimetre.

About how many of the big frogs will fit on the 1 cm scale?

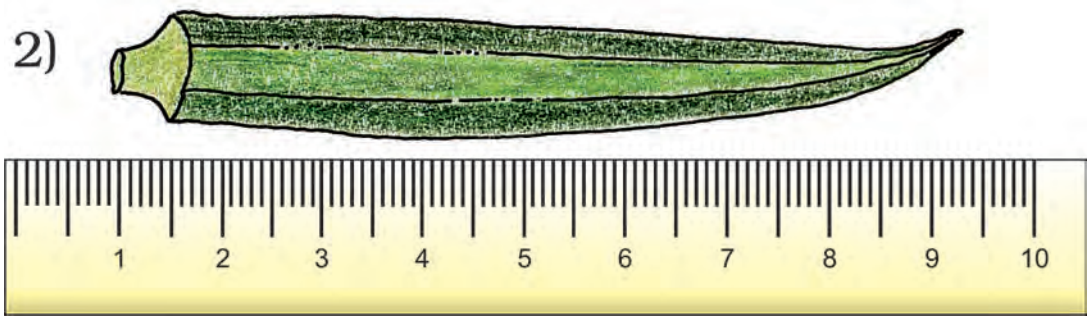
If they sit in a straight line about how many of the small frogs will cover 1 cm?

Practice Time

Length of the nail _____ 2 cm and _____mm or 2.____cm



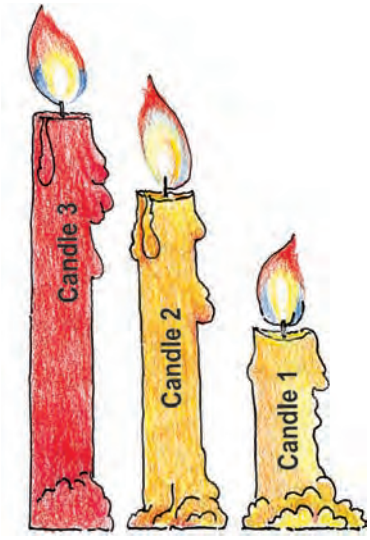
2)



The length of this lady's finger (*bhindi)* is _____ cm and _____mm.

We can also write it as _____ cm.

3) Using the scale on this page find the difference in length between candle 1 and candle 3.

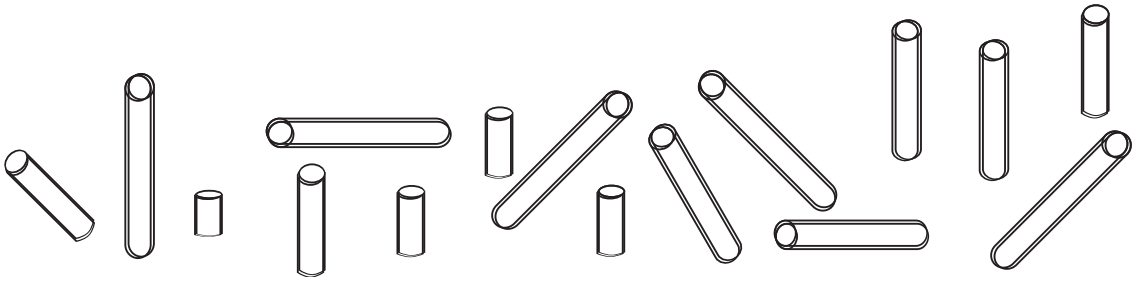


Length of	Length in cm and mm	Length in cm
Candle 1		
Flame 1		
Candle 2		
Flame 2		
Candle 3		
Flame 3		

Guess and Colour

First colour the rods as shown, without measuring! Then check.

Rods of length less than 1 cm	**Red**
Rods of length between 1 cm and 2 cm	**Blue**
Rods of length between 2 cm and 3 cm	**Green**
Rods of length between 3 cm and 4 cm	**Orange**



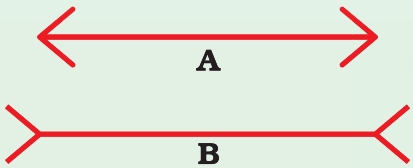
Guess, Draw and Measure

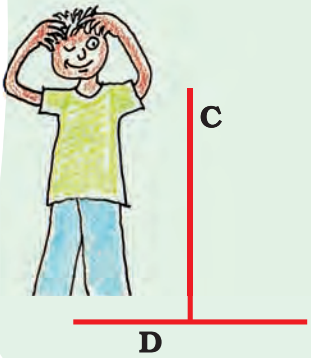
Guess the lengths to draw these things. Ask your friend to draw the same. After you make the drawing use a scale to measure the length. Whose drawing showed a better guess?

Guess its length and draw	Measure of your drawing	Measure of your friend's drawing
An ant of length less than 1 cm		
Pencil of length about 7 cm		
A glass 11 cm high with water up to 5 cm		
A bangle of perimeter 20 cm		
A curly hair of length 16 cm		

Our Eyes Get Confused?

Which line is longer? A or B? Measure each line and write how long it is in centimetres. How good is your guess?





Which line is longer? C or D? Measure each line.

How good is your guess?

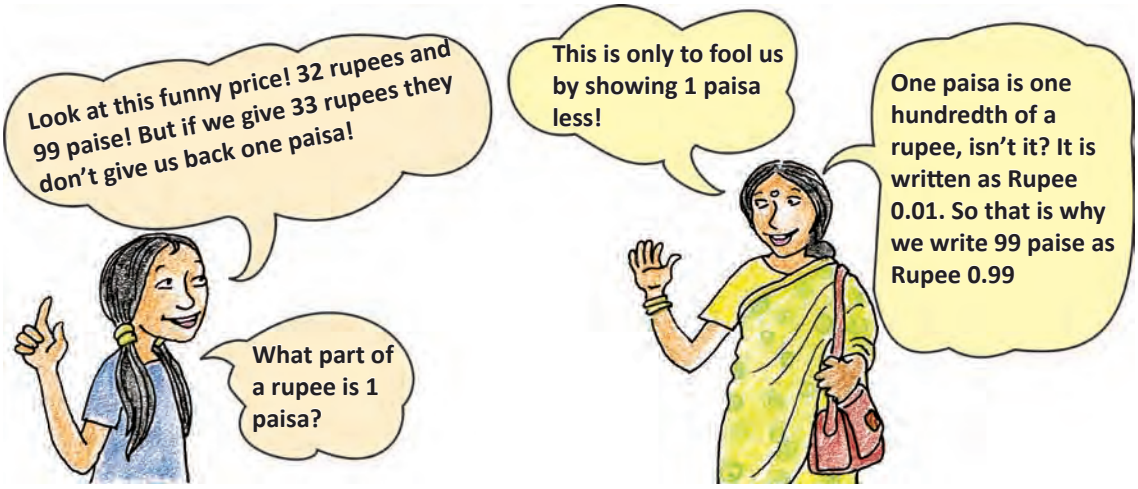
The Longest Rupee Notes?

What is the length of a 100 rupee note? Guess. Now measure it by using a scale.

Now guess the length and width of many other things. Measure and find the difference between your measure and your guess.

Size of	Your Guess in cm		Your measure in cm	
	Length	Width	Length	Width
100 Rupee note				
10 Rupee note				
20 Rupee note				
5 Rupee note				
Post Card				
Merry Math Book				

At the Market



1. How many does a matchbox cost? _____
2. How many matchboxes can be got for Rs. 2.50? _____
3. How many rupees soap cost? _____
4. Aslam wanted to buy a soap. He has a five rupee coin, 2 one-rupee coins and 4 half-rupee coins. Write in rupees want money will he get back.

5. a) An egg costs two and half- rupees. How much will one and a half dozen cost?

   b) How many pens can Mannan buy? How much money is left?

6. The price of two pens is Rs ____. Can she buy two pens?

Practice time – Match these

Match each yellow box with one green and one pink box.

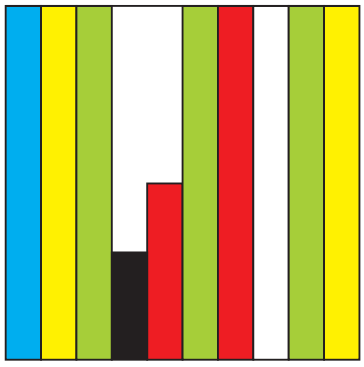
Rupee $\frac{1}{2}$	5 paise	Rupee 0.75
Rupee $\frac{1}{10}$	25 paise	Rupee 0.50
Rupee $\frac{5}{100}$	99 paise	Rupee 0.05
Rupee $\frac{3}{4}$	50 paise	Rupee 0.10
Rupee $\frac{99}{100}$	75 paise	Rupee 0.25
Rupee $\frac{1}{4}$	10 paise	Rupee 0.99

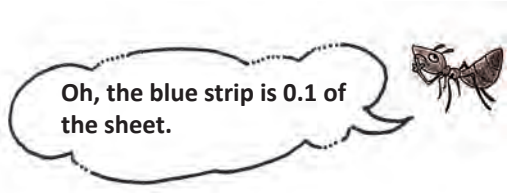
Colourful Design

What part of the sheet is coloured blue? ___/ 10

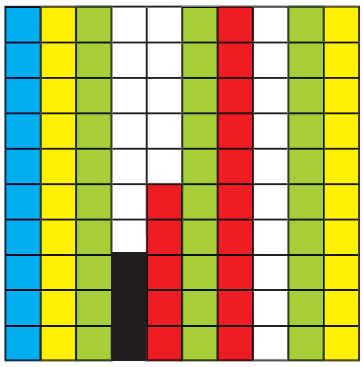
What part of the sheet is green? ____

Which colour covers 0.2 of the sheet?





Now look at the second sheet. Each strip is divided into ten equal boxes. How many boxes are there in all?



Is each box 1 / 100 part of the sheet?

How many blue boxes are there? _____

Is Blue equal to 10 / 100 of the sheet? We saw that blue is equal to 1 / 10 of the sheet. We wrote it as 0.1 of the sheet.

Can we say 10 / 100 = 1 / 10 = 0.10 =0.1?

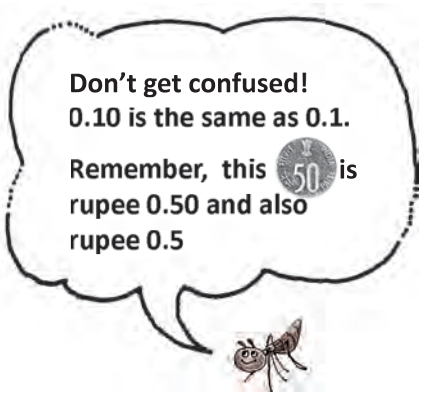
Think: Can we write 10 paise as 0.1 of a rupee?

How many boxes are red? What part of this sheet is this? 15 / _____

Can we also write it as 0.15 of the sheet?

[**Hint:** *Remember we wrote 99 paise as 0.99 rupee!*]

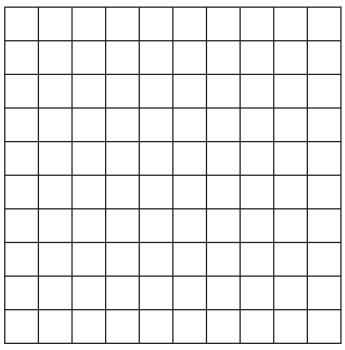
Now 3 / 100 of the sheet is black. We can say 0. ___ sheet is black.



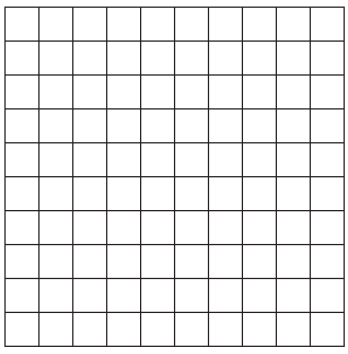
How many white boxes are there in the sheet?

What part of the second sheet is white? _____

❖ Make your designs.



Make a nice design by colouring 0.45 part of this square red

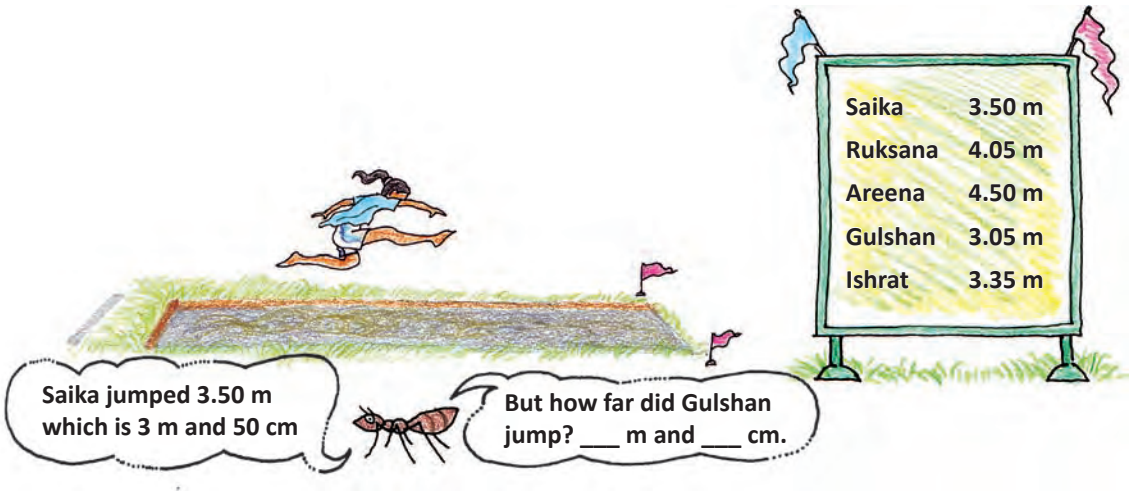


Use four colours. Each colour should cover 0.05 of this square.

Sports Day

The school at Anantnag has its sports day.

The first five children in long Jump are:



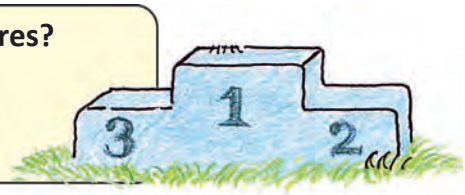
Who is the winner in the long jump? _____

Write the names of the I, II and III winners on this stand.

Do you remember that 1 metre = 100 centimetres?

So one centimetre is 1/100 0f a metre.

We also write 1 cm as _____m.



Write in Metres

3 metre 45 centimetre ☐ metres

99 centimetre ☐ metres

1 metre and 5 centimetre ☐ metres

How Big Can You Get

A

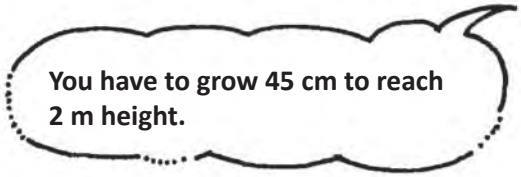
After breathing out 1.52 m

One taking deep breath 1.82 m

Different in size

Do this for yourself and find the difference

B



What is Javiad's height in meters?

_____ m _____cm

Practice Time

1. Money from different countries

Have you seen any notes or coins used in any other country?

State Bank has a chart to show us how many Indian rupees we can get when we change the money of different countries.

Country	Money	Changed into Indian Rupees
Korea	Won	0.04
Sri Lanka	Rupee (SL)	0.37
Nepal	Rupee	0.63
Honk Kong	Dollar (HK)	5.10
South Africa	Rand	5.18
China	Yuan	5.50
U.A.E.	Dirham	10.80
U.S.A.	Dollar	39.70
Germany	Euro	58.30
England	Pound	77.76

(This is the rate on 15-2-2008)

a. The money of which country will cost the most in Indian Rupees?

b. Basit's uncle in America had sent him 10 USA dollars as a gift. Basit used 350 rupees for a school trip. How much money was left with him?

c. Majeed's father is working in Saudi Arabia. He gets 1000 Saudi Riyals as salary. Imtiyaz's father who is working in Sri Lanka gets 2000 Sri Lankan rupees. Who gets more Indian rupees as salary?

d. Sabreena's aunty brought a present for her from China. It costs 30 Yuan. Find what it costs in Indian Rupees.

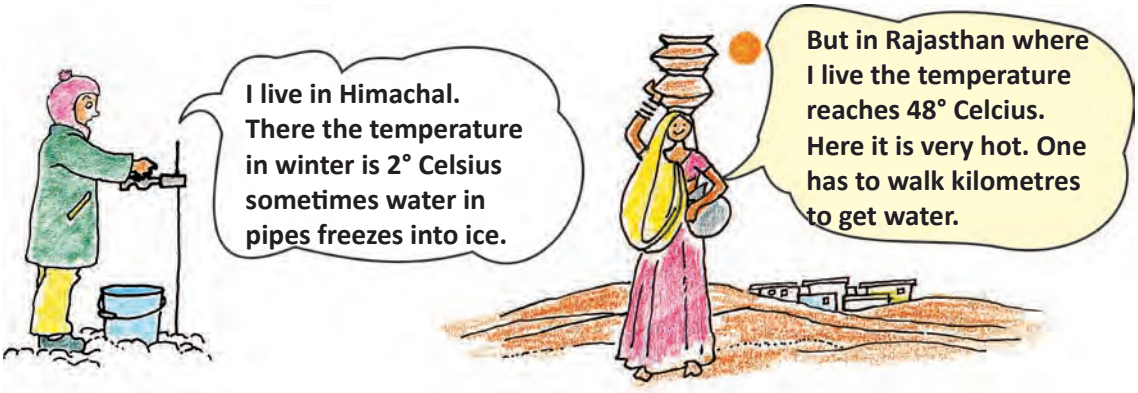
e. Nayeema wants some Hong Kong Dollars and Won.

1. How many Won can she change for Rs 4? For Rs 400?
2. How many Honk Kong Dollars can she change for Rs 508?

2) Deeba went shopping with Rs 200. Look at the bill. The shopkeeper forgot to put the point correctly in the prices. Put the point in the correct place and find out the total amount of the bill.

Item	Quantity	Price (Rupees)
Soap	1	1250
Green gram	1kg	5025
Tea	250 gm	2725
Coconut oil	1 litre	6000
	Total	

3) Which City is cool?



The temperature in each city was noted at 3 pm on 16 January 2008.

1. Which place had the highest temperature at 3 pm? Which place is the coolest at that time?
2. How much higher is the temperature in Mumbai from that in Srinagar?

3. How many degrees will the temperature need to rise for it to reach 40° C in Thiruvananthapuram?
4. How much lower is the temperature of Kolkata from that in Chennai?
5. The temperature in these cities was also noted at 3 am on the same day. Look at the table and answer the questions.

City	*Temperature at 3 am*
Chennai	21.1
Mumbai	19.0
Th'puram	21.6
Kolkata	13.1
Bhopal	9.8
Srinagar	1.3
Guwahati	12.8
Jaipur	10.2

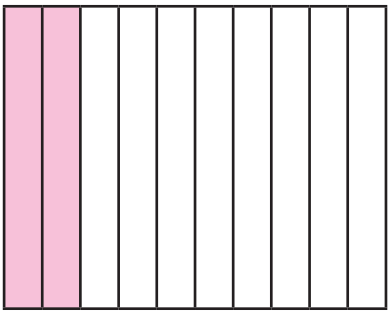
a. Which place had the lowest temperature at 3 am? Imagine yourself to be there and describe how it would feel.

b. What is the difference between the temperatures at 3 pm and 3 am in Chennai? In Bhopal?

Now Let Us Do These

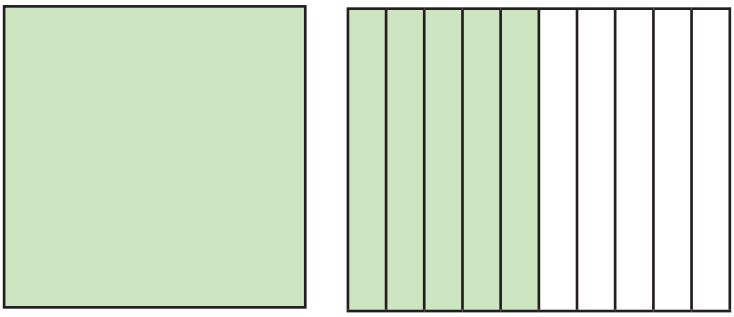
Q.NO.1 Which part is shaded? Give answer in decimals.

a)



=_____.

b)



= _____

c)

= _____

Q.NO.2 Match the following:

a) 4.1 (I) Two and three Tenths

b) 2.3 (II) One and one Tenths

c) 1.1 (III) Five tenths

d) 0.5 (IV) Four and one tenths

Q.NO. 3 Write in decimal form:

a) 4 ones and 7 tenths

b) 8 ones, 9 tenths and 6 hundredths

c) 5 ones , 7 tenths and 8 hundredths

Q.NO. 4 Give the next three terms:

(a) 1.2, 1.3, 1.4, ___, ___, ___

(b) 5.92, 5.93, 5.94, ___, ___, ___

(c) 11.8, 11.9, 12.0, ___, ___, ___

(d) 8.01, 8.02, 8.03, ___, ___, ___

(e) 6.07, 6.08, 6.09, ___, ___, ___

Q.NO.5 Match the following

(a) $\frac{3}{10}$ (I) 1.53

(b) $\frac{24}{10}$ (II) 0.03

(c) $\frac{3}{100}$ (III) 0.3

(d) $\frac{24}{100}$ (IV) 2.4

(e) $\frac{153}{100}$ (V) 0.24

Q.NO. 6 Express as a decimal:

(a) $\frac{72}{100}$ (b) $\frac{8}{10}$ (c) $\frac{137}{100}$

Express as a fraction:

(a) 0.04 (b) 15.63 (c) 1.31

Q.NO. 7 Fill in the blanks with equivalent decimals or fractions.

(a) 0.6 = 0.60 = 0.___

(b) 1.7 = 1.70 = ___

(c) 2.4 = ___ = 2.400

(d) $\frac{3}{10} = \frac{30}{100} =$ ___

(e) $\frac{15}{10} = \frac{150}{100} =$ ___

Answers

Q.NO.1

(a) 0.2 (b) 1.5 (c) 2.4

Q.NO.2

(a) ↔ IV (b) ↔ I (c) ↔ II ; (d) ↔ III

Q.NO.3

(a) 4.7 (b) 8.96 (c) 5.78

Q.NO. 4

(a) 1.5, 1.6, 1.7 (b) 5.95, 5.96, 5.97 (c) 12.1, 12.2, 12.3

(d) 8.04, 8.05, 8.06 (e) 6.10, 6.11, 6.12

Q.NO. 5

(a) ↔ III, (b) ↔ IV, (c) ↔ II, (d) ↔ V, (e) ↔ I

Q.NO. 6

(a) 0.72 (b) 0.8 (c) 1.37 and

(a) $\frac{4}{100}$ (b) $\frac{1563}{100}$ (c) $\frac{131}{100}$

Q.NO. 7

(a) 0.600 (b) 1.700 (c) 2.40 (d) $\frac{300}{1000}$ (e) $\frac{1500}{1000}$

Area and its Boundary

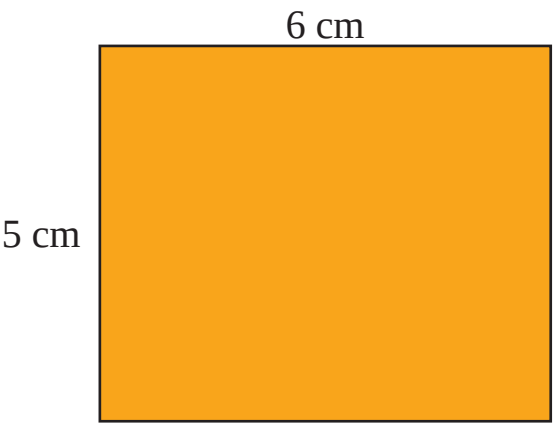
Chapter 9

Whose Slice is Bigger?

Salim and Rukaiya bought *aam paapad* [dried mango slice] from a shop.

Their pieces looked like these.

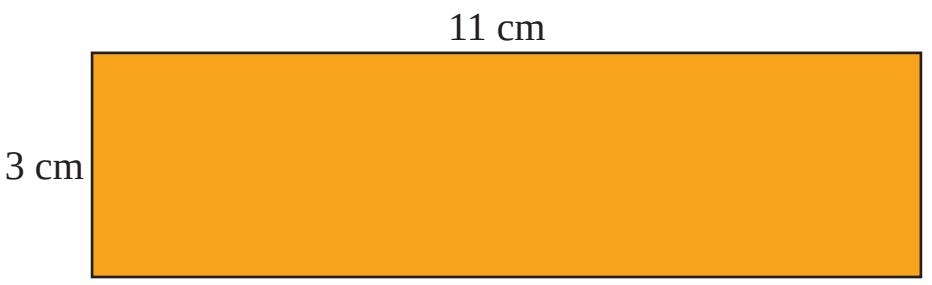
Both could not make out whose piece was bigger.



Piece A

❖ Suggest some ways to find out whose piece is bigger. Discuss.

A friend of Salim and Rukaija showed one way, using small squares.



Piece B

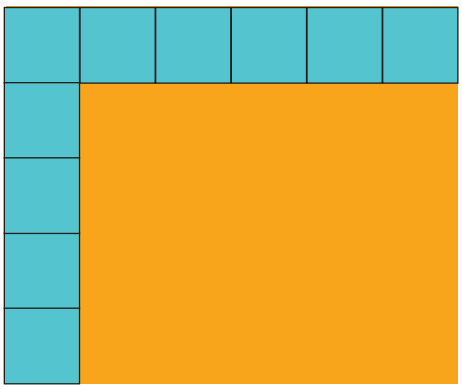
The length of piece A is 6 cm.

So 6 squares of side 1 cm can be arranged along its length.

The width of piece A is 5 cm.

So 5 square can be arranged along with its width.

- ❖ Altogether how many squares can be arranged on it? _____
- ❖ So the area of piece A = _____ square cm.



Piece A

- ❖ In the same way find the area of piece B.
- ❖ Who had the bigger piece? How much bigger?

Cover with Stamps

This stamp has an area of 4 square cm. Guess how many stamps will cover this big rectangle.

Check your guess

a. Measure the yellow rectangle. It is _____ cm long.

b. How many stamps can be placed along its length? _____

c. How wide is the rectangle? _____ cm

d. How many stamps can be placed along its width? _____

e. How many stamps are needed to cover the rectangle? _____

f. How close was your earlier guess? Discuss.

g. What is the area of the rectangle? _____ square cm.

h. What is the perimeter of the rectangle? _____ cm.

Practice Time

a. Adnan plans to tile his kitchen floor with green square tiles. Each side of the tile is 10 cm. His kitchen is 220 cm in length and 180 cm wide. How many tiles will he need?

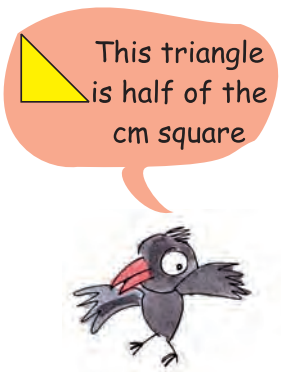
b. The fencing of a square garden is 20 m in length. How long is one side of the garden?

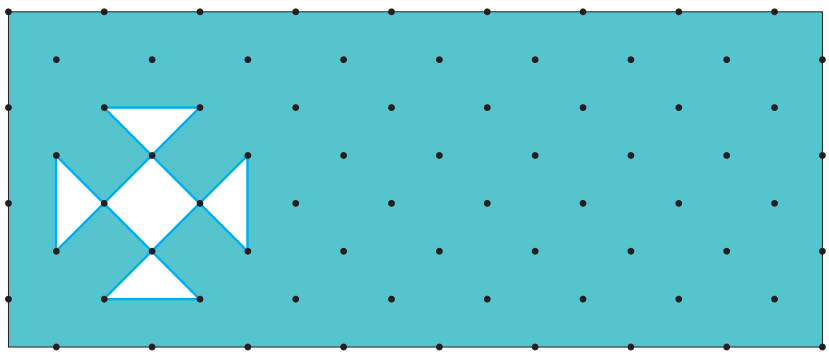
c. A thin wire 20 cm long is formed into a rectangle. If the width of this rectangle is 4 cm, what is its length?

d. A square carom board has a perimeter of 320 cm. How much is its area?

e. How many tiles like the triangle given here will fit in the white design?

Area of design = _____ square cm.





f. Ambreen, Ulfat, Mudasir and Kabir made greeting cards. Complete the table for their cards:

Whose card	Length	Width	Perimeter	Area
Ambreen	10 cm	8 cm		
Mudasir	11 cm		44 cm	
Ulfat		8 cm		80 square cm
Kabir			40 cm	100 square cm

My Belt is Longest!

Take a thick paper sheet of length 14 cm and width 9 cm. You can also use an old postcard.

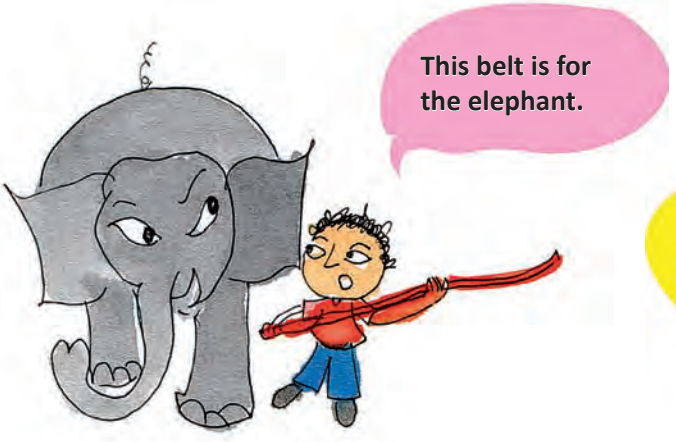
- What is its area? What is its perimeter?
- Now cut strips of equal sizes out of it.

Using tape join the strips, end to end, to make a belt.

- How long is your belt? _____
- What is its perimeter ____
- Whose belt is the longest in the class? ____

Discuss

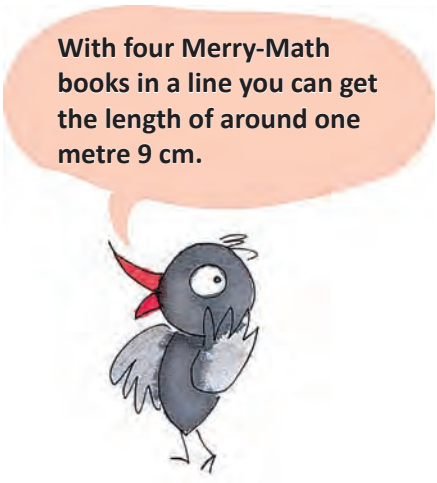
- Why did some of your friends get longer belts than others?
- Is the area of your belt the same as the area of the postcard? Why or why not?
- What will you do to get a longer belt next time?



Puzzle: Pass through a Postcard

Can you think of how to cut a postcard so that you can pass through it? (See photo.) If you have tried hard enough and still not got it… look for the answer somewhere ahead.

People People Everywhere



A) You can play this game in a ground.

Make two squares of one square metre each.

Divide your class in two teams. Ready to play!

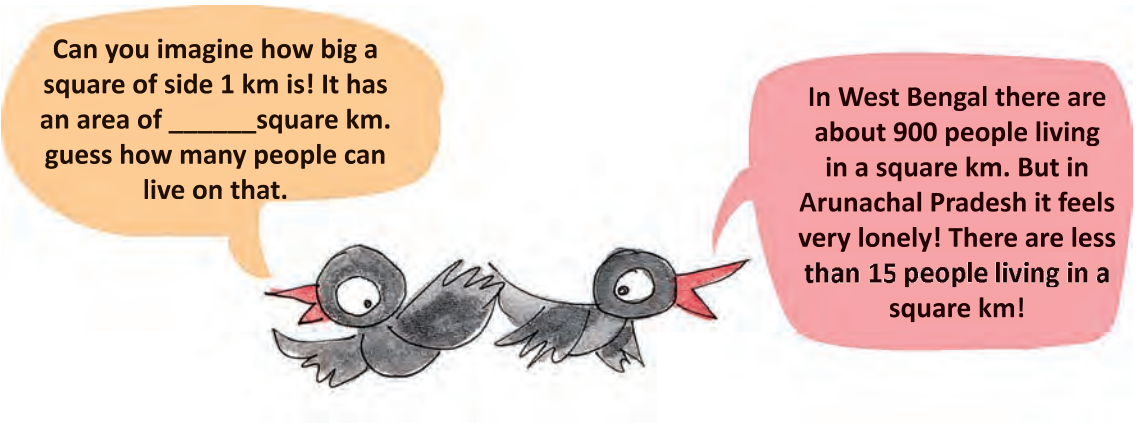
Try these in your teams –

- ❖ How many of you can sit in one square metre? _____
- ❖ How many of you can stand in it? _____
- ❖ Which team could make more children stand in their square?

  How many? _____
- ❖ Which team could make more children sit in their square? How many?

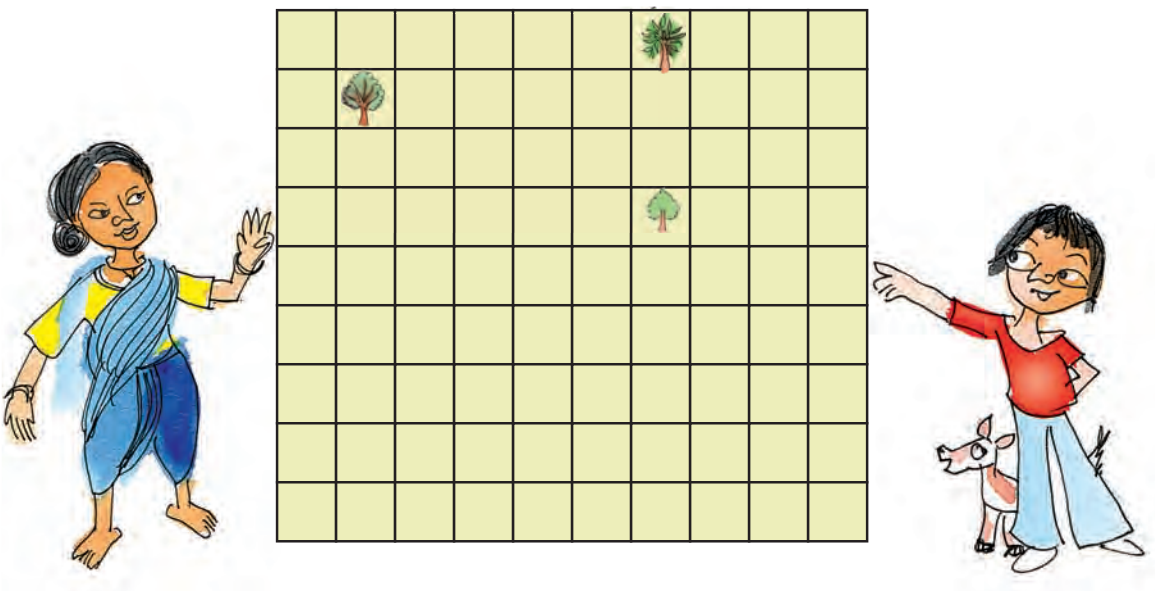
Measure the length of the floor of your classroom in metres. Also measure the width.

- ❖ What is the area of the floor of your classroom in square metres? _____
- ❖ How many children are there in your classroom? _____
- ❖ So how many children can sit in one square metre? _____
- ❖ If you want to move around easily then how many children do you think should be there in one square metre? _____



Share the Land

Mubeena is a farmer who wants to divide her land equally among her three children – Asmat, Iram and Altaf. She wants to divide the land so that each piece of land has one tree. Her land looks like this.

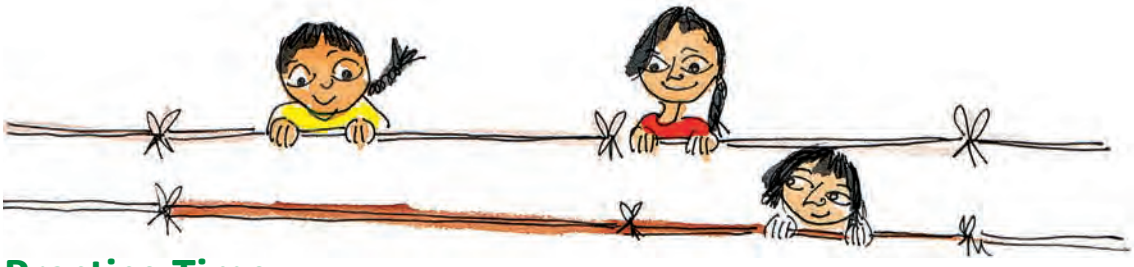


❖ Can you divide the land equally? Show how you will divide it. Remember each person has to get a tree. Colour each person's piece of land differently.

- If each square on this page is equal to 1 square metre of land, how much land will each of her children get? _____ square m

  Asmat, Iram and Altaf need wire to make a fence.

- Who will need the longest wire for fencing? _____
- How much wire in all will the tree need? _____



Practice Time

A. Look at the table. If you were to write the area of each of these which colomn would you choose? Mark a (✓)

	Square cm	Square metre	Square km
Handkerchief	✔		
Sari			
Page of your book			
School Land			
Total land of a city			
Door of your classroom			
Chair seat			
Blackboard			
Indian flag			
Land over which a river flows			

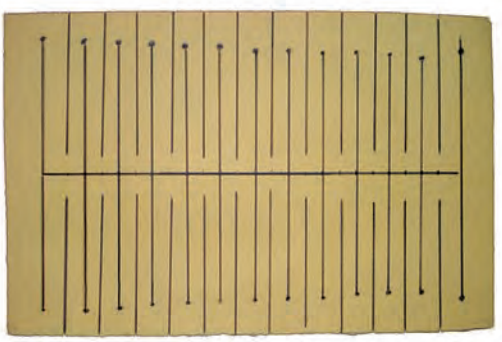
B. Draw a square of 9 cm. write A on it.
Draw another square with double the side.
Write B on it.

Answer these –

1. The perimeter of square A is _____ cm.
2. The side of square B is _____ cm.
3. The area of square B is _____ square cm.
4. The area of square B is _____ times the area of square A.
5. The perimeter of square B is _____ cm.
6. The perimeter of square B is _____ times the perimeter of square A.

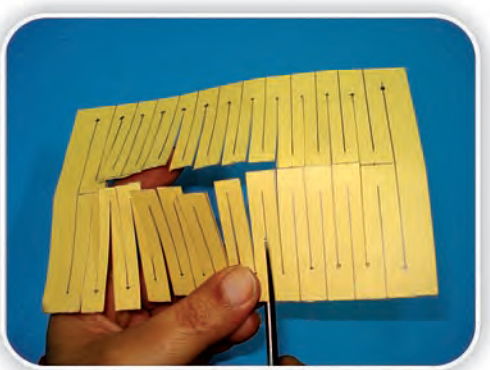
Answer – Pass Through a Postcard (page 142)

1.



Make lines on a postcard like this.

2.



Cut the postcard only on the lines.

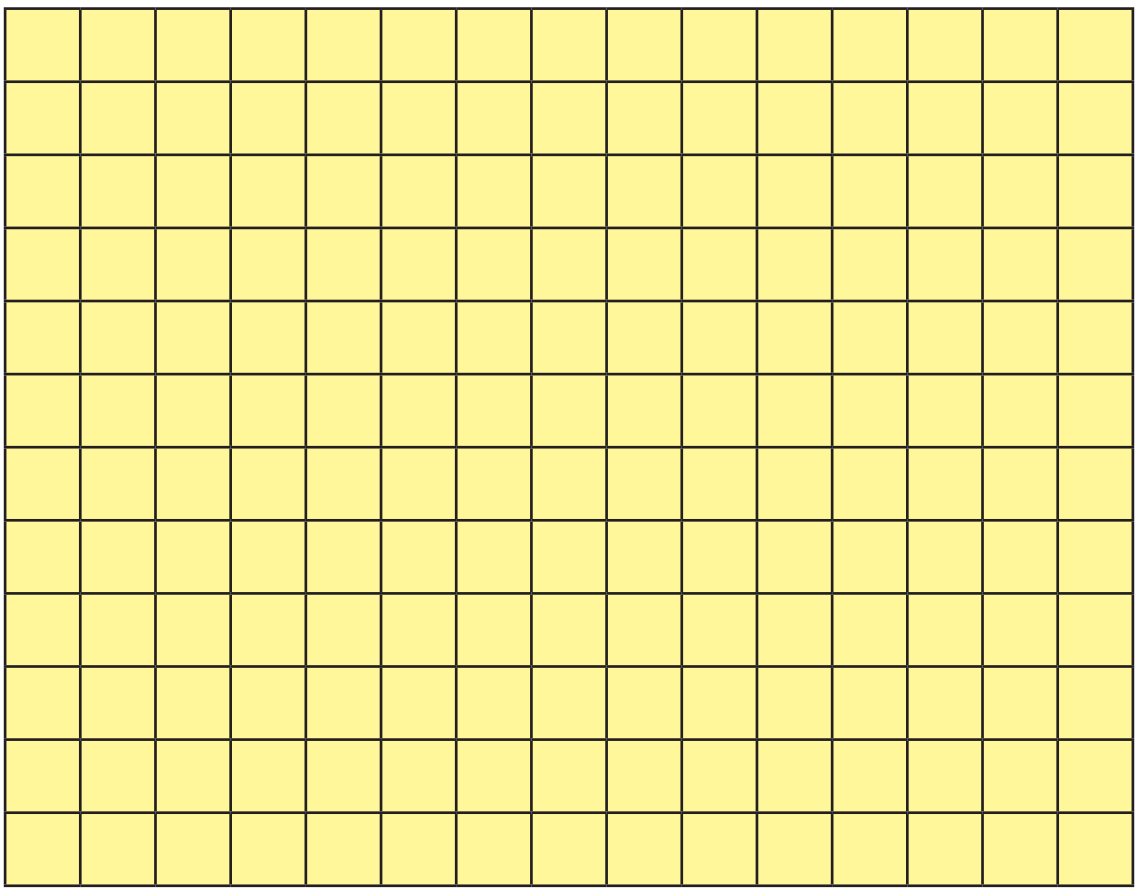
3.

So, can you pass through it!

❖ You know the area of the loop, don't you? It is _____

Thread Play

Take a 15 cm long thread. Make different shapes by joining its ends on this sheet.



A) Which shape has the biggest area? How much? _____

What is the perimeter of this shape? _____

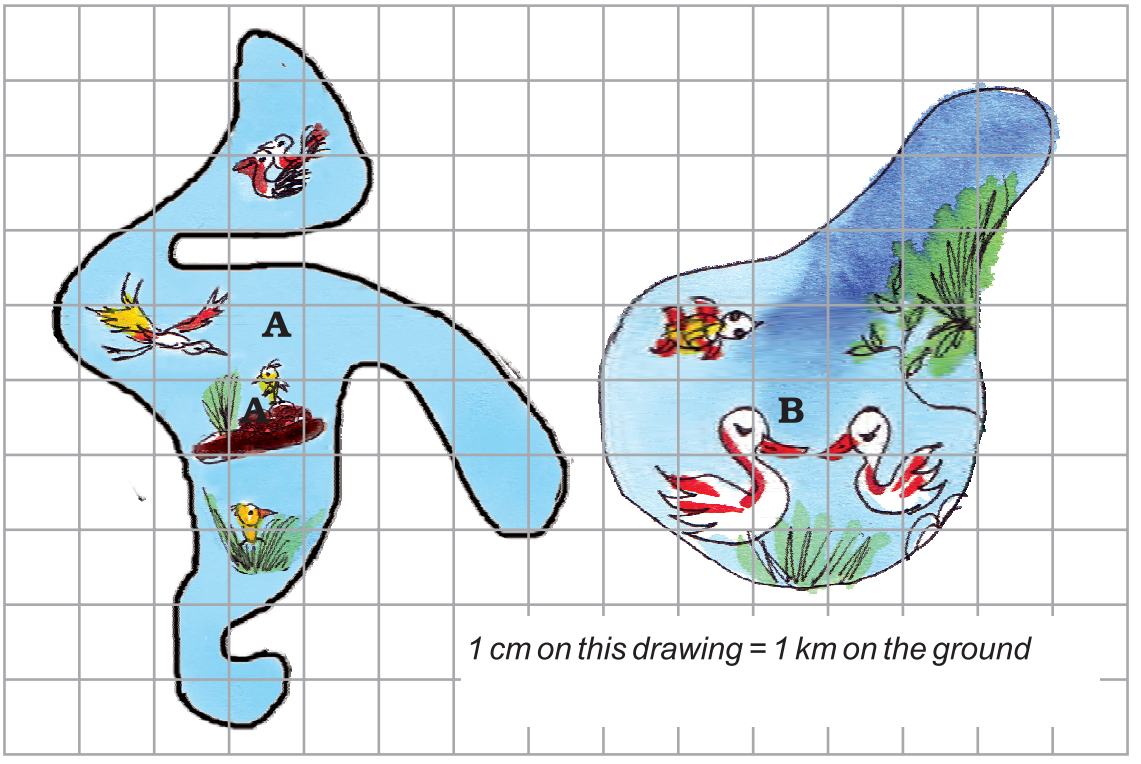
B) Which shape has the smallest area? How much? _____

What is the perimeter of this shape? _____

Also make a triangle, a square, a rectangle and a circle. Find which shape has the biggest area and which has the smallest.

Save the Birds

There are two beautiful lakes near a village. People come for boating and picnics in both the lakes. The village Panchayat is worried that with the noise of the boats the birds will stop coming. The Panchayat wants motor boats in only one lake. The other lake will be saved for the birds to make their nests.



a. How many cm is the length of the boundary of Lake A. in the drawing? _____ (use thread to find out)

b. What is the length of the boundary of Lake B in the drawing?

c. How many kilometers long is the actual boundary of Lake A?

d. How many kilometers long is the actual boundary of Lake B?

e. A longer boundary around the lake will help more birds to lay their eggs. So which lake should be kept for birds? Which lake should be used for boats?

f. Find the area of lake B on the drawing in square cm. what is its actual area in square km?

King's Story

The king was very happy with the carpenters. Balbir and Kuldeep. They had made a very big and beautiful bed for him. So as gifts the king wanted to give some land to Balbir, and some gold to Kuldeep.

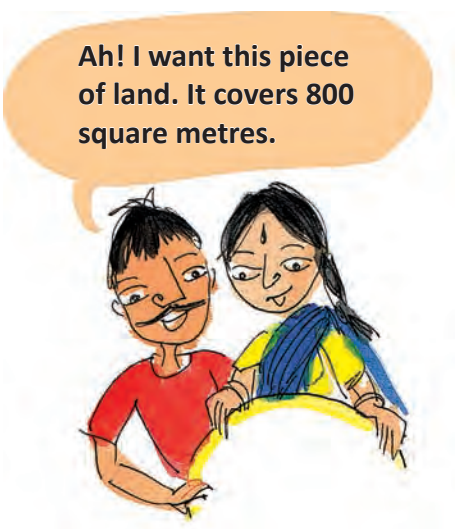
Balbir was happy. He took 100 meters of wire and tried to make different rectangles.

He made a 10 m × 40 m rectangle.

Its area was 400 square meters.

So he next made a 30 m × 20 m rectangle.

- ❖ What is its area? Is it more than the first rectangle?
- ❖ What other rectangles can he make with 100 m of wire? Discuss which of these rectangles will have the biggest area?



Balbir's wife asked him to make a circle with a wire. She knew it had a area of 800 square meters.

❖ Why did Balbir not choose a rectangle? Explain.

So Kuldeep also tried many different ways to make a boundary for 800 square metres of land.

❖ He made rectangles A, B, and C of different sizes. Find out the length of the boundary of each. How much gold wire will he get for these rectangles?

40 m × 20 m

Gold wire for A = _____ meters

80 m × 10 m

Gold wire for B = __meters

800 m × 1 m

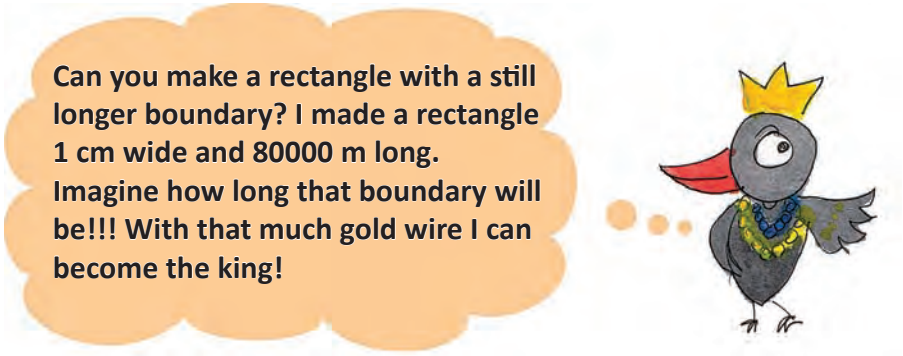
Gold wire for C = _____ meters

But then Kuldeep made an even longer rectangle …… See how longer!

8000 m × 0.1 m

So he will get ____ metres of gold wire!!

Now do you understand why the king fainted!!!



Now Lets Us Do These

Q.NO.1 Find the area of the rectangle with sides 30 cm and 50 cm.

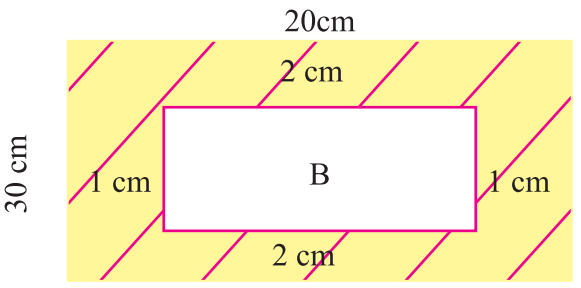
Q.NO.2 if the area of a square 'A' is 1600 sq. cm and if the area of a square B is 40sq.cm then find the number of squares of type B obtained from square A.

Q.No.3 If the area of a rectangle is 250 sq. cm and the length of rectangle is 25 cm then find the width of the rectangle.

Q.No.4 If the dimensions of a rectangle are 20 cm and 10 cm, then find the parameter of a rectangle.

Q.No.5 If the perimeter of a rectangle is 60 cm and it is 10 cm wide. Find its Length.

Q.No.6 From figure find the area of region B.

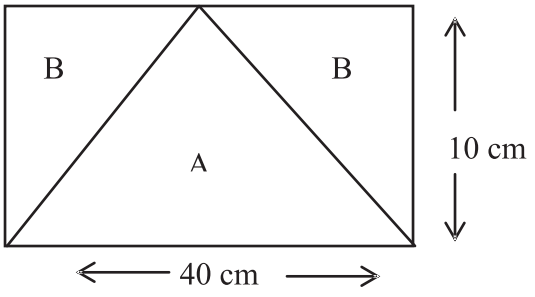


Q.NO. 7 In a rectangular plot of land:

A: Plot of land

B: Wet land

Find the area of B when area of A = 200 Sq. mts.

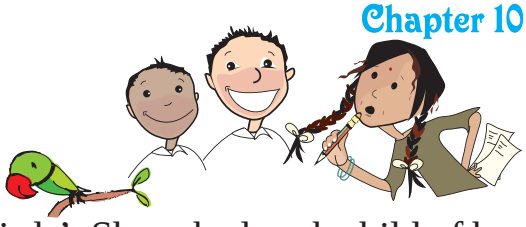


Answers

Q.No.1	1500 sq cm	Q.No.2	40
Q.No.3	10 cm	Q.No.4	60 cm
Q.No.5	40 cm	Q.No.6	200sq.cm
Q.N0.7	558 sqm		

Smart Charts

Chapter 10



Chi – Chi, Meow – Meow

Rumaisa did a project 'Animals and Birds'. She asked each child of her class about one favourite pet animal.

She used **tally marks** to record each answer. For example if someone said 'cat' she put one line | in front of 'cats'. When some one said 'cat' again, she added a line. So ⌐ means two cats and ⧄ means 5 cats. In all 24 children said 'cat' was their favourite animal. Help Rumaisa complete the table.

Animal	*Tally Marks*	*Number*
Cats	⧄ ⧄ ⧄ ⧄ ▭	24
Dogs	⧄ ⧄ ⧄ ⧄ ⧄ ⧄ ⌐	
Rabbits	⧄ ⧄	
Cows	⧄ ⧄ ⧄ ⧄ ⌐	
Parrots	⧄ ⌐⌐	
Goats	⧄ ⧄ ⧄ ⧄	
Squirrel	⧄ ⧄ ⧄	

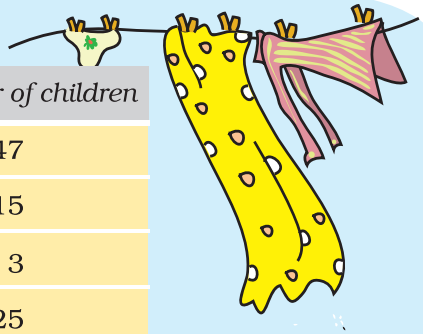
- ❖ Look at the tally marks and write the number for each animal in the table. How many children in all did Rumaisa talk to?
- ❖ Which is the most favourite pet animal in this table?
- ❖ Which pet animal you like to have? What will you name it? Which other animals can be kept at home? Discuss.

Try yourself

❖ Take a round in your colony. Find out how many types of trees you can see there. Do you know their names? You can make drawings. Use tally marks to note the number of different trees.

Helping Hands

In the EVS period, the teacher asked children whether they help their parents at home. They were different answers. Children named the work in which they help their parents the most. The teacher collected their answers and made a table.



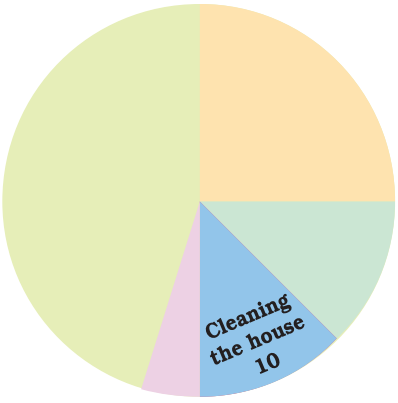
Help most in house work	*Number of children*
Going to the market	47
Washing utensils	15
Washing clothes	3
Making, serving food	25
Cleaning the house	10
Total children who said they help their parents	

Now you can fill the chapatti chart to show the numbers given in the table.

1. *Look and find out*

Children who help in making or serving food are

a. One-third of the total children.
b. Half of the total children
c. One-fourth of the total children



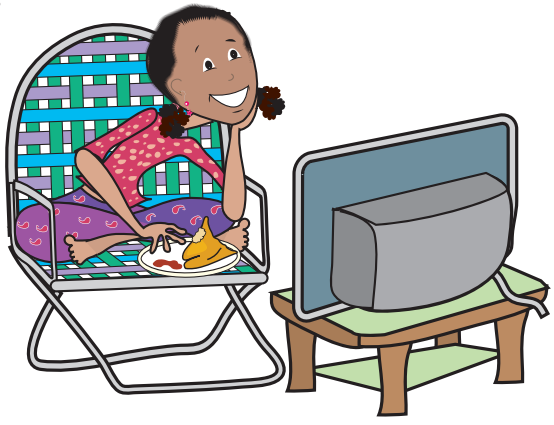
2. *Practice time: After School*

Ask 10 of your friends about what they like to do most after school

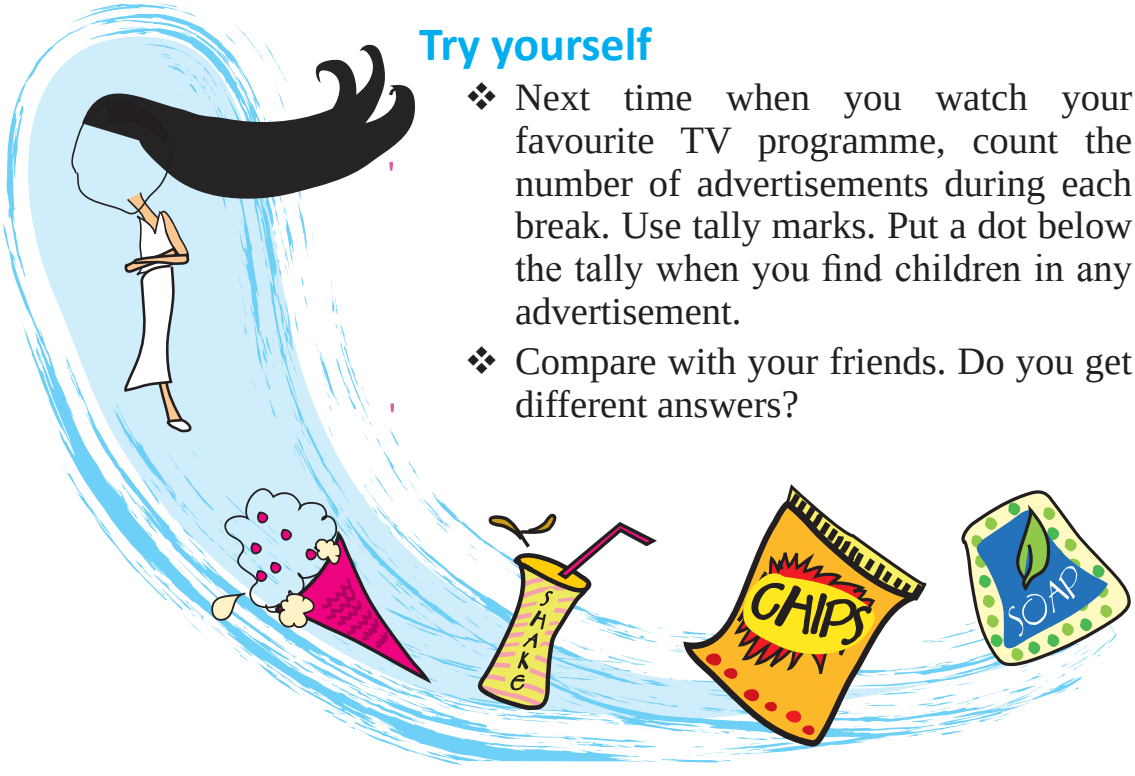
What they like to do after school	Number of children
Watching TV	
Playing	
Reading storybooks	

Ad Mad!!

Nazima loves to watch cartoons on television. One day she thought of counting the number of ads during the breaks. She found that in each break there were 14 advertisements. In 10 of those ads there were children as actors.



- Why do you think that children are used in so many ads?
- Use tally marks to count the number of ads during a short break in a programme?
- Were there ads during the news programme?



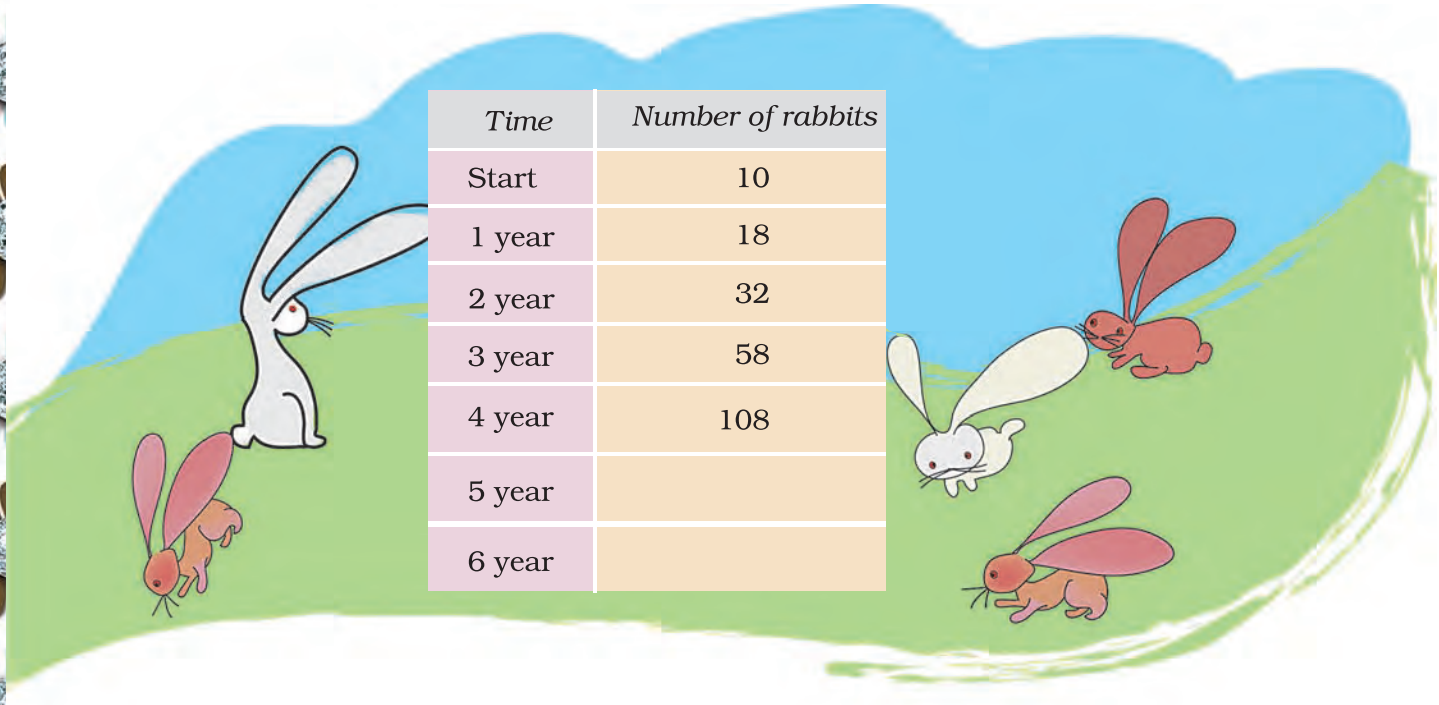
Try yourself

- Next time when you watch your favourite TV programme, count the number of advertisements during each break. Use tally marks. Put a dot below the tally when you find children in any advertisement.
- Compare with your friends. Do you get different answers?

Rabbits in Australia

Earlier there were no rabbits in Australia. Rabbits were brought to Australia around the year 1780.At that time there were no animals in Australia which ate rabbits. So the rabbits became to multiply at a very fast rate. Imagine what they did to the crops!

The table shows how rabbits grew every year.



Time	*Number of rabbits*
Start	10
1 year	18
2 year	32
3 year	58
4 year	108
5 year	
6 year	

1. After each year the number of rabbits was-

a. a little less than double the number of rabbits in the last year.

b. double the number in the last year

c. 8 more than the number in the last year.

d. more than double the number of rabbits in the last year.

2. At the end of year 6, the number of rabbits was close to

☐ 400 ☐ 600 ☐ 800

3. After which year did the number of rabbits cross 1000?

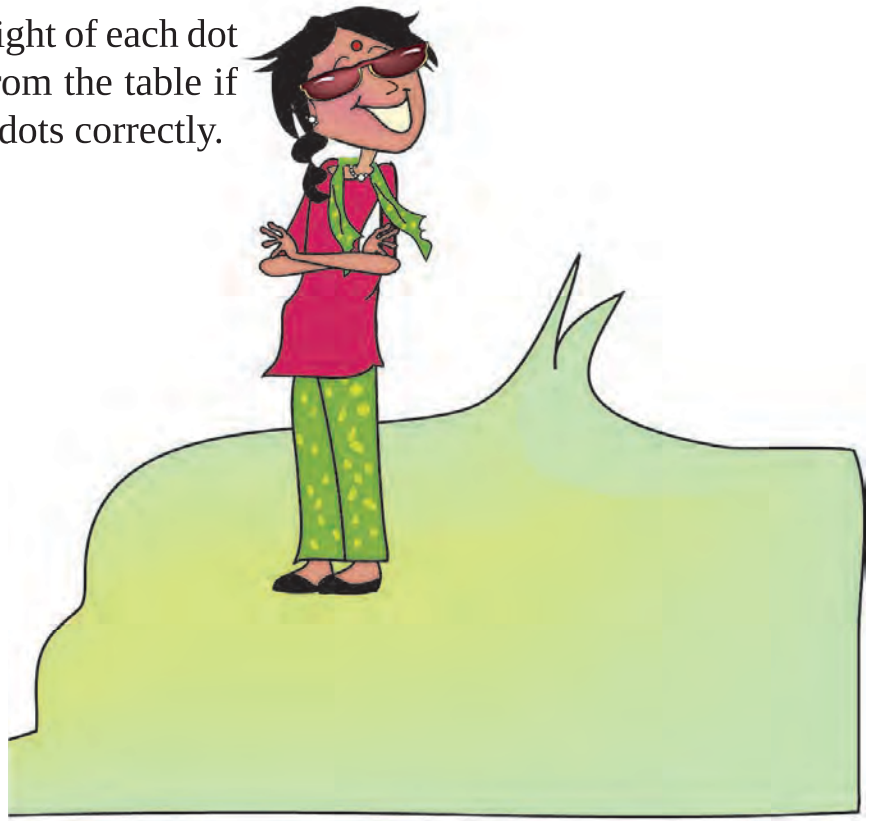
Growth Chart of a Plant

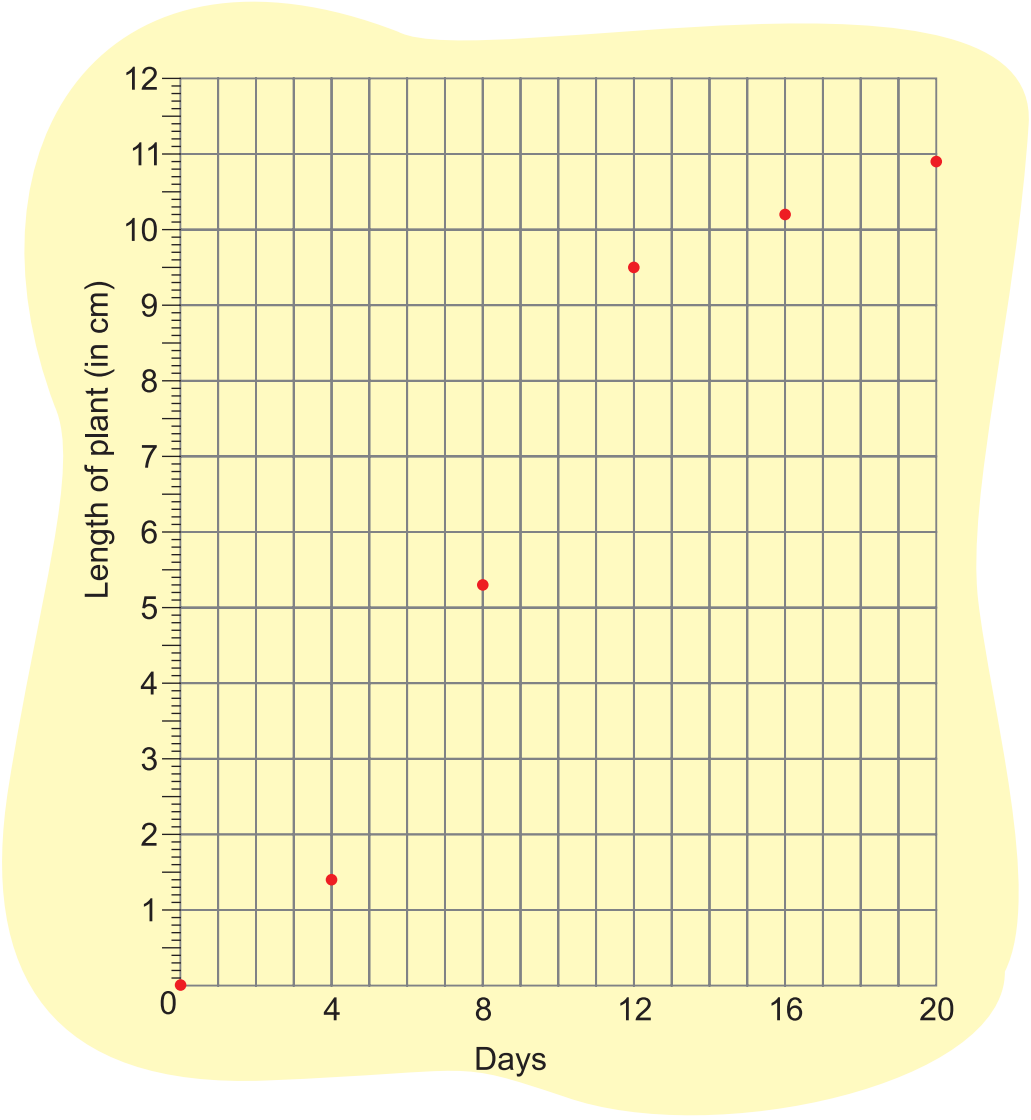
Amir sowed a few seeds of *moong dal* in the ground. The height of the plant grew to 1.4 cm in the first four days. After that it started growing faster.

Amir measured the height of the plant after every four days and put a dot on the chart. For example if you look at the dot marked on the fourth day, you can see on the left side scale than it is 1.4 cm length.

Now look at the height of each dot in cm and check from the table if he has marked the dots correctly.

Day	Length of the plant (in cm)
0	0
4	1.4
8	5.3
12	9.5
16	10.2
20	10.9





Find out from the growth chart

a. Between which days did the length of the plant change the most?

i) 0-4 ii) 4-8 iii) 8- 12 iv) 12-16 v) 16-20

b. What could be the length of this plant on the 14th day? Guess.

i) 8.7 cm ii) 9.9 cm iii) 10.2 cm iv) 10.5 cm

c. Will the plant keep growing all the time? What will be its length on the 100th? day? Make a guess!

Now Let Us Do these

Q.NO.1 Name three charts used to represent the data.

Q.NO.2 Draw a pictograph showing following information.

Class	I	II	III	IV	V
Number of boys	40	50	30	30	20

Q.NO.3 In a village number of people using different modes of transport to go their offices are as follows. Draw bar graphs for the given data:

Bicycle	50%
Bus	30%
Car	5%
Autorikshaw	10%
Others	5%

Q.NO.4 In a city numbers of people speaking different languages (percent wise) is given as:

Kashmiri –	40%
Urdu -	30%
Hindi -	10%
English -	10%
Dogri -	5%
Others-	5%

Draw a chapatti chart (Pie chart) for the data given.

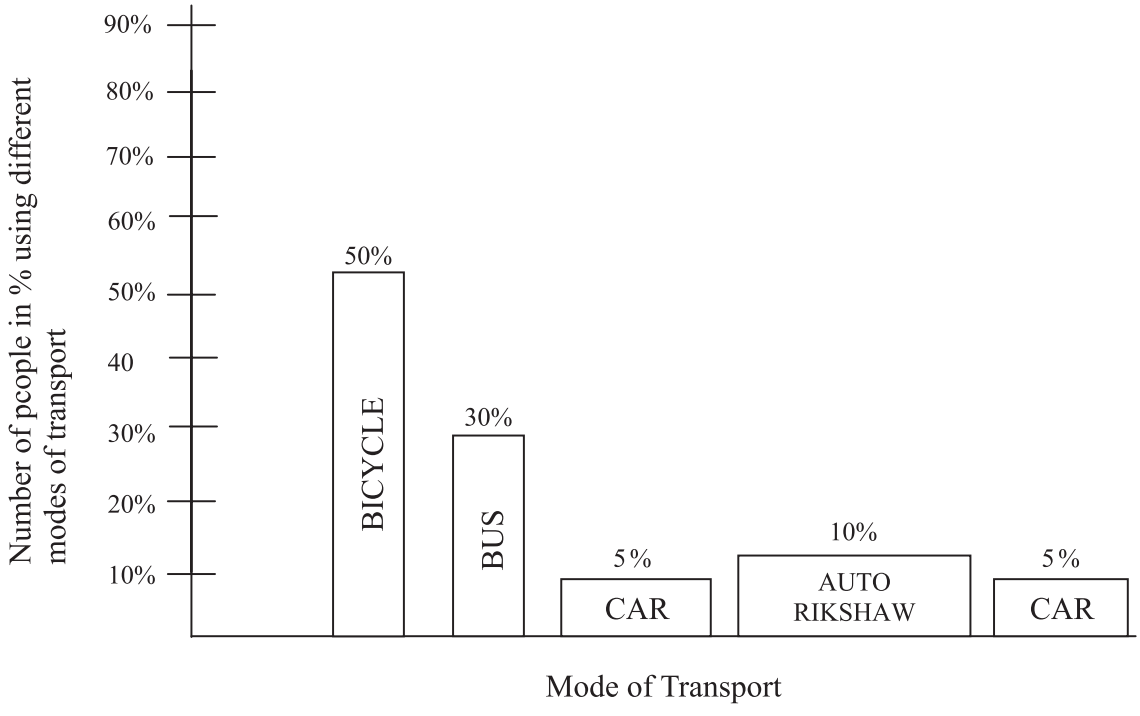
Answers

Q.NO.1 Pictographs, Bar graphs, Chapatti charts

Q.NO.2

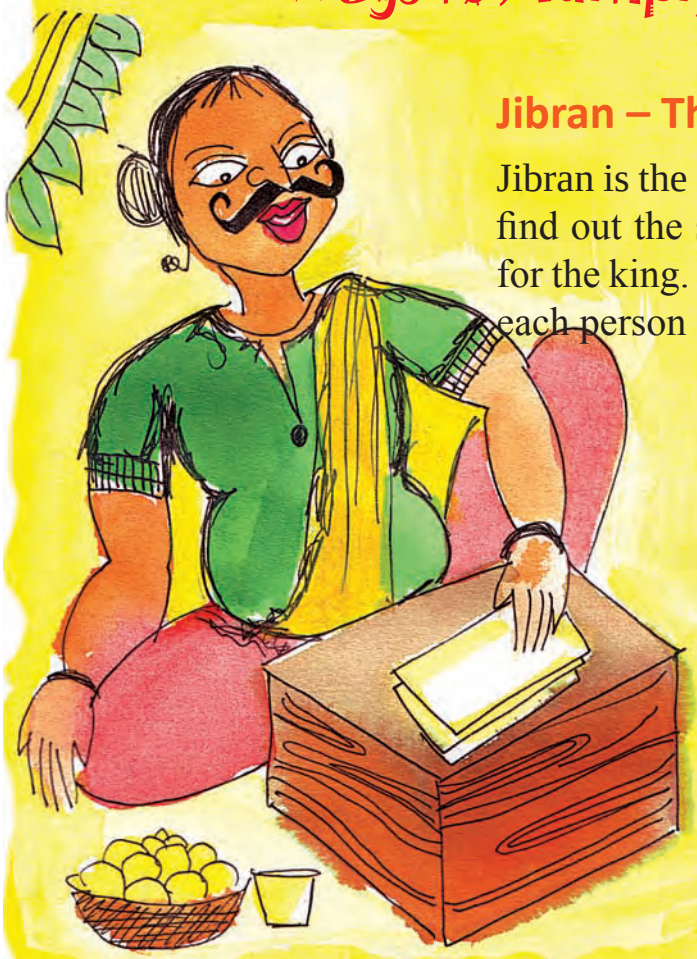
Class	Tally Marks	Number
I	⧄ ⧄ ⧄ ⧄	40
II	⧄ ⧄ ⧄ ⧄ ⧄	50
III	⧄ ⧄ ⧄	30
IV	⧄ ⧄ ⧄	30
V	⧄ ⧄	20

Q.NO.3



Ways to Multiply and Divide

Chapter 11



Jibran – The Cashier

Jibran is the cahier of King Ahsan. His job is to find out the salary of all the people who work for the king. This chart shows how much salary each person gets in a day.

Person		*Salary in a day*
Minister	—	Rs 195
Horse rider	—	Rs 76
Cook	—	Rs 65

Jibran wanted to calculate the salary of the cook for the month of January. He wrote-

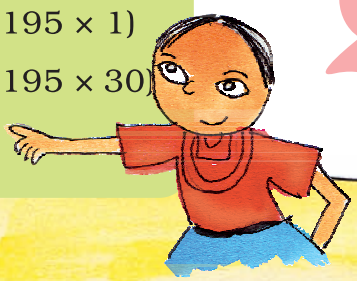
	60	5
30	60 × 30 **1800**	5 × 30 **150**
1	60 × 1 **60**	5 × 1 **5**

Rupees 1800 + 150+60 + 5 = Rs _____

Jibran's daughter Iram has learnt method to multiply. She wrote this and showed it to Basit, her brother.

Now Basit tried to find the salary of a minister from the month of January. He wanted to multiply 195 ×31.

```
    195
    ×31
   ----
    195     (195 × 1)
+   ___0    (195 × 30)
   ------
   ------
```



To multiply by 30
I first write a zero
here. Then I only have
to multiply by 3.

Practice Time

1. Use Iram method to multiply these numbers.
   a. 32 × 46
   b. 67 × 46

```
    32
   ×46
   ----
   192      (32 × 6)
+  ____     (32 × 40)
   ------
   ------
```

```
    67
   ×46
   ----
   ___      (67 × 6)
+ 2680      (67 × __)
   ------
   ------
```

2. Do these in your notebook using Iram's method.
   (a) 47 × 19 (b) 188 × 91
   (c) 63 × 57 (d) 225 × 22
   (e) 360 × 12 (f) 163 × 42

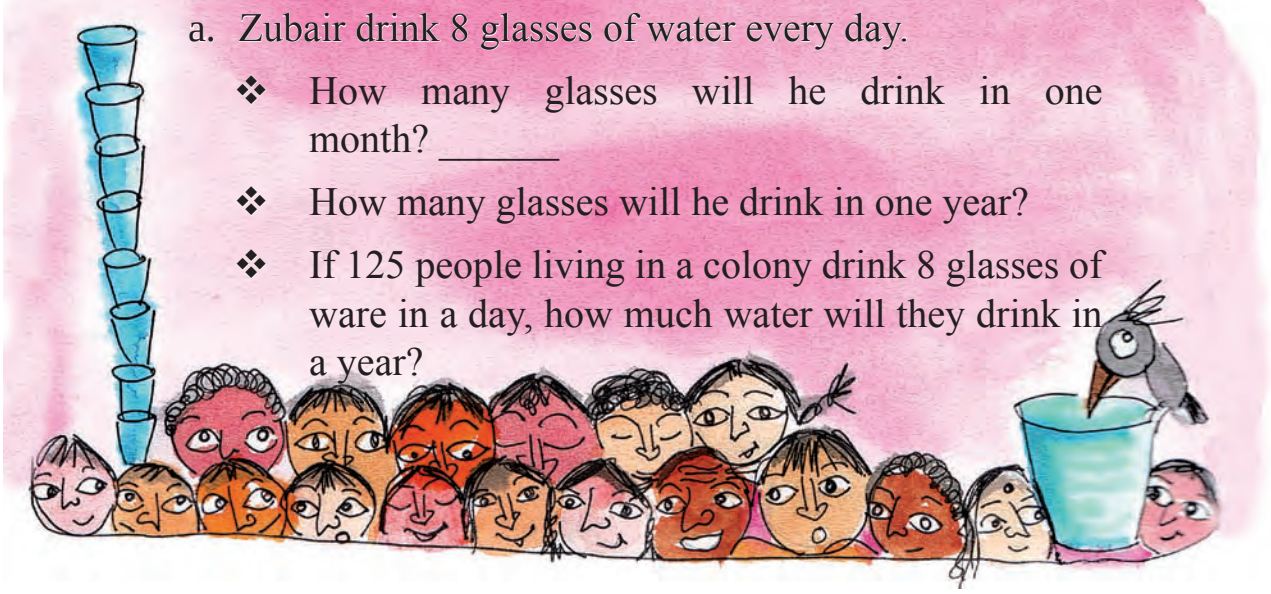
Jagdeep a Special Cook

- Jagdeep is a special cook who comes only on party days. Last year he was called for only 28 days .For each day he has to be paid Rs 165. Find out how many money he will get in all.
- If he is called for all days of the year, how much salary will he gat?

```
 165
× 365
_____
_ _ _        { 165 × 5 }
_ _ _        {165 × 60}
+ 49500      {165 × 300}
_______
_______
```

- Now find the salaries of the minister and horse rider for 1 year.

Years and Years



a. Zubair drink 8 glasses of water every day.

- How many glasses will he drink in one month? _____
- How many glasses will he drink in one year?
- If 125 people living in a colony drink 8 glasses of ware in a day, how much water will they drink in a year?

b. If Iqra's heart beats 72 times in one minute, how many times does it beat in one hour?

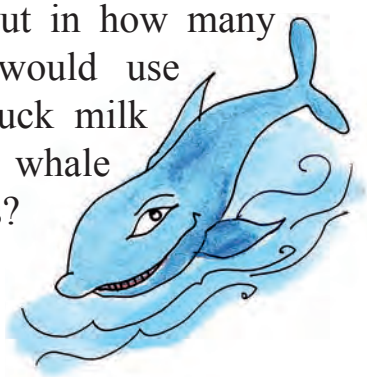
❖ Now find out how many times it beats in one day.

❖ Count your own heart beats in one day.

❖ Count your own heart beats to find out how many times your heart beats in one week.

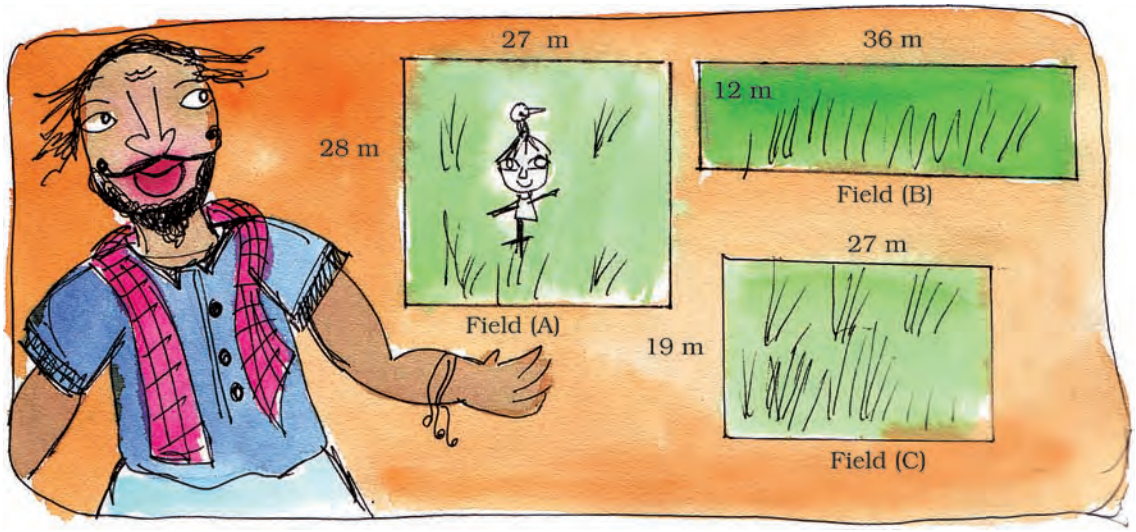
c. A baby elephant drinks around 12 L of milk every day. How much milk will it drink in two years?

d. A baby blue whale drinks around 200 L of milk in one day. Just imagine how much milk that is! Find out in how many days your family would use 22 L milk. How muck milk would the baby blue whale drink in eight months?



Muzamil- The Landlord

Muzamil bought three fields.

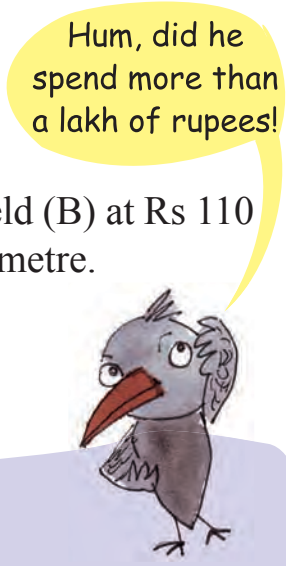


❖ Find the area of all the three fields.

Field (A) _____ square metre.

Field (B) _____ square metre.

Field (C) _____ square metre.



He bought field (A) at the rate of Rs 95 for a square, field (B) at Rs 110 for a square metre and field (C) at Rs 120 for a square metre.

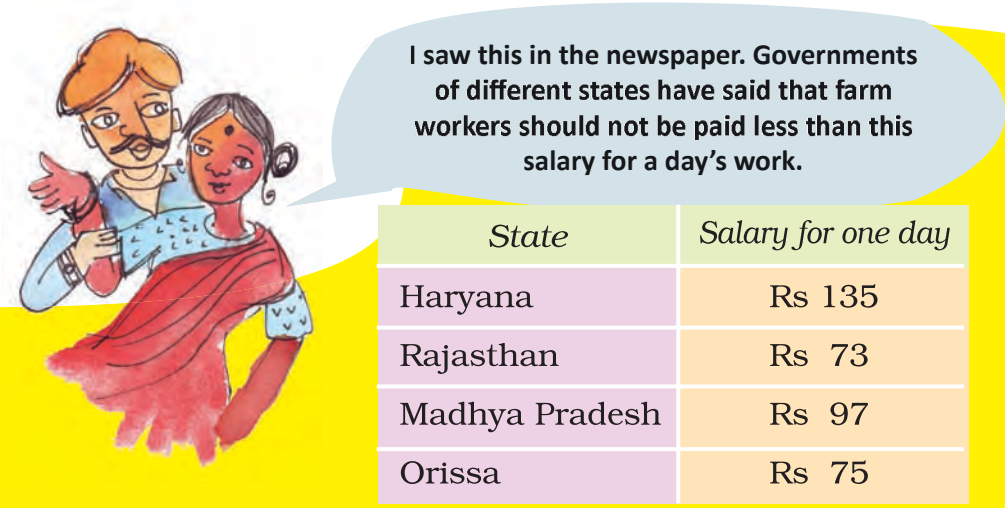
❖ Find the cost of all three fields.

Nusrat and her husband work on Muzamil's farm. The government has said that farm workers should be paid at least Rs 71 for one day's work. But he pays Rs 55 to Nusrat and Rs 58 to her husband.

If Nusrat works for Rs 49 days, how much money does she get?____

If her husband works for 42 days, how much money does she get?_____

Find the money they earn together._____



State	*Salary for one day*
Haryana	Rs 135
Rajasthan	Rs 73
Madhya Pradesh	Rs 97
Orissa	Rs 75

The table shows the amounts fixed by four states.

a. For farm work which state has fixed the highest amount? Which state has fixed the lowest?

b. Farooq is a worker in Rajasthan. If he works for 8 weeks on the farm, how much will he earn?

c. Nayeema is a worker in Haryana. If she works for $2\frac{1}{2}$ months on the farm, how much will she earn?

d. How much more will a farm worker in Madhya Pradesh get than a worker in Orissa after working for 9 weeks?

Ahmad's Story

Ahmad is a 13 year old boy. His father had taken a loan for farming. But the crops failed. Ahmad's mother has to pay Rs 5000 every month for the loan.

Ahmad started working __ he worked after 17 goats of the village.

He earns Rupee 1 everyday for one goat.

- ❖ How much will he earn in one month?
- ❖ Does he earn enough to help pay the loan every month?
- ❖ How much will he earn in one month?

Zamrooda's story

To help farmers the state Government gave cows. Zamrooda also got a cow. The cost of the cow was Rs 17,500. She has to pay Rs 5,500 and the government spent the rest of the money.

- ❖ How much did the government spend on the cow?

- ❖ If 9 people from her village got cows, how much did the government spend in all?

But Zamrooda was not happy. She had to spend Rs 85 everyday on the cow. She made some money by selling the milk. But still she wanted to sell the cow.

- ❖ If Zamrooda spends Rs 85 a day. Find out how much she will spend in one month.

The cow gives 8 litres of milk everyday. How much will it give in one month?

❖ If the milk is sold at Rs 9 per litre, how much money will Zamrooda make in one month? _____

So the money spent on keeping the cow was Rs _____

Money earned by selling the milk Rs _____

Which is more ___ spent on the cow or money earned from it? How much?

❖ Explain why she wanted to sell the cow.

Practice time

a. Farooq works on a farm. He is paid Rs 98 for one day.

If he works for 52 days, how much will he earn?

b Ishfaq took a loan to build his house. He has to pay back Rs 2,750 every month for two years. How much will he pay back in 2 years?

c. Athar is a milk seller in the city. He sells 13 litres of milk everyday at Rs 23 per litre. How much does he earn?

d. A farmer sells 1 litre of milk for Rs 11. In one month he sells 210 litres of milk. How much does he earn in a month?

e. A company sells 1 litre of packed water for Rs 12. A shopkeeper buys 240 litres of packed water. How much does he pay?

Fun with multiplication

A) Look for the pattern and take this forward

(0 × 9)	+ 1	=	1
(1 ×9)	+ 2	=	2
(12 × 9)	+ 3	=	111
(123 × 9)	+ 4	=	_____
(1234 × 9)	+ 5	=	_____
(12345 × 9)	+ 6	=	_____

B) Each letter a, b, c stands for a number.

```
   a a a
 × a a a
   a a a
 ---------
   a a a 0
   a a a 0 0
 ---------
   a b c b a
 ---------
```

C) Tricks with your age.

Write your age _____

Multiply it by 7 _____

Again multiply the answer by 13 _____

Multiply again that answer by 11 _____

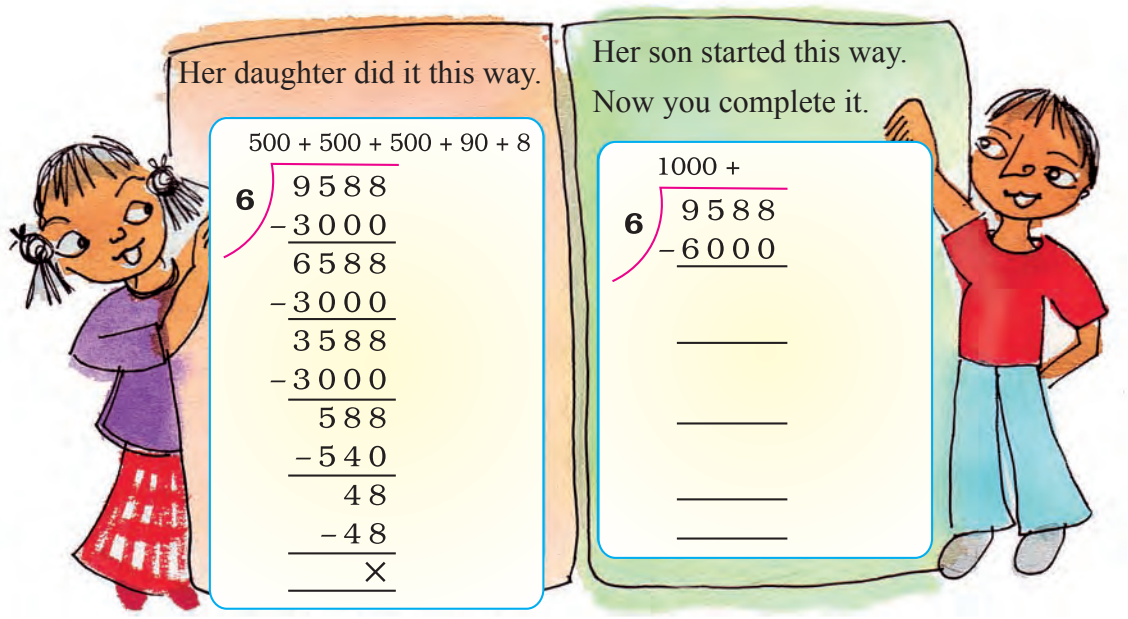
Now look at your last answer. Can you find your age in that answer? How many times does your age show in the answer?

Now try this trick with other people.

Division

Sheemu took a loan from a friend to buy a moped for Rs 9,588. She has to pay it back in equal amounts every month for six months.

❖ How much will she have to pay every month? She asked her children to calculate.



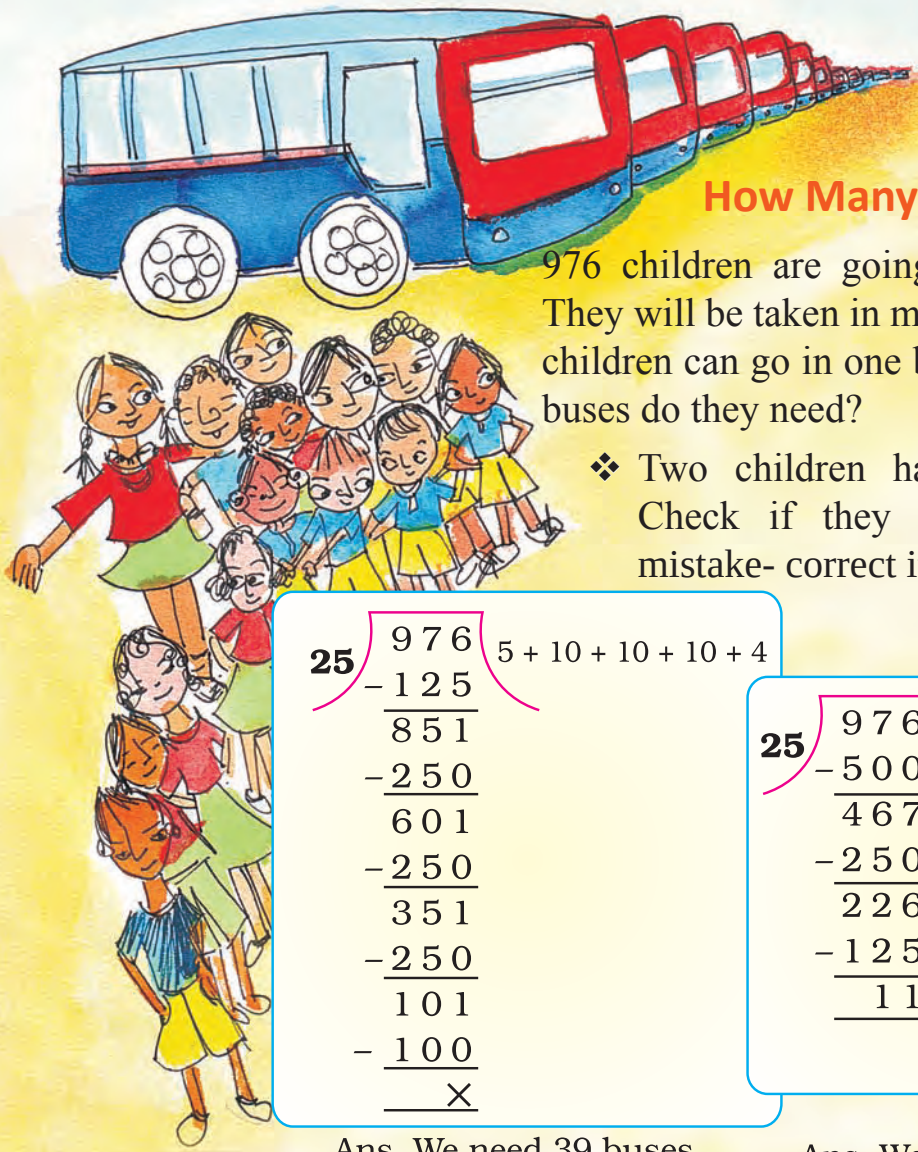
Will both of them get the same answer? Discuss.

Practice Time

Try to solve these using as few steps as you can.

a) 4228 ÷ 4 b) 770 ÷ 22 c) 9872 ÷ 8

d) 672 ÷ 21 e) 772 ÷ 7 f) 639 ÷ 13



How Many Times?

976 children are going on a picnic. They will be taken in mini buses. If 25 children can go in one bus, how many buses do they need?

❖ Two children have solved it. Check if they have made a mistake- correct it. Discuss.

```
25 ) 976 ( 5 + 10 + 10 + 10 + 4
    -125
     851
    -250
     601
    -250
     351
    -250
     101
    - 100
       ×
```

Ans. We need 39 buses.

```
25 ) 976 ( 20 + 10 + 9 + 1
    -500
     467
    -250
     226
    -125
      11
```

Ans. We need 40 buses.

How much petrol?

Afroza has Rs 1000 with her. She wants to buy petrol. One litre of petrol costs Rs 47.How many litres can she buy?

Money with Afroza = Rs 1000

Cost of 1 litre = Rs 47

Litres of petrol she can buy = Rs 1000 ÷ Rs 47 =?

Afroza can buy_____ litres of petrol.

Find out

If Afroza comes to your city, how much petrol can she buy with the same money?

Children's Day

Children are happy today. They are celebrating children's day. Each child will be given 4 coloured pencils from school. The school has got 969 pencils. To find out how many children can get the teacher asks them to divide.

Maria's Way

4) 969 (100 +
- 400

Rukhsana's Way

4) 969 (200 +
-

Complete Maria's and Rukhsana's way of division. What is the answer you get?

Practice Time

- 526 books are to be packed in boxes. If one box has 24 books, how many boxes are needed?

- 836 people are watching a movie in a hall. If the hall has 44 rows, how many people can sit in 1 row?

- A gardener bought 458 apple trees. He wants to plant 15 trees in each row. How many rows can he plant?

  How many trees would be left over?

Brain Teaser

❖ Dilshada bought a battery. She read on it 'Life: 2000 hours'. She uses it throughout the day and the night. How many days will the battery run?

More with Multiplication and Division

❖ A tank is full of 300 L of water. How much water will be filled in 25 tanks? If 15 buckets can be filled with one tank, how many buckets in all can be filled with the water in 25 tanks?

❖ There are 28 laddoos in 1 kg. How many laddoos will be there in 12 kg? If 16 laddoos can be packed in 1 box, how many boxes are needed to pack all these laddoos?

❖ There are 26 rooms in a school. each room has 4 plants. If each plant needs 2 cups of water, how much water do we need for all the plants?

Make the Best Story Problem

Each line gives a story. You have to choose the question which makes the best story problem. The first one is already marked.

1. A shopkeeper has 50 boxes. There are 48 fruits in one box.

   Tick the one question which matches with the given problem.

   a. How much will the shopkeeper pay in all? ☐

   b. How many fruits are there in all? ✔

   c. How many more boxes will he needed? ☐

   Explain why (a) and (c) are not good choices.

2. 352 children from a school went on a camping trip. Each tent had a group of 4 children.

   a. How many children did each tent have? ☐

   b. How many tents do they need? ☐

   c. How many children in all are in the school? ☐

3. A shopkeeper has 204 eggs. He puts them in egg trays. Each tray has 12 eggs.

   a. How many more eggs will he need? ☐

   b. How many fresh eggs does he sell? ✓

   c. How many eggs trays does he need? ☐

4. The cost of one book is Rs 47. Sweety buys 23 books.

   a. How much money does she have?

   b. How much money does she pay for the books?

   c. What is the cost of 47 books?

Cross check for Ramzan

Ramzan wanted to divide Rs 2,456 amongst his 4 sons. He asked his eldest son to tell him how much money each one will get.

When Ramzan started giving Rs 624 to each son, he was left with less money for the youngest one.

Ramzan multiplied 624 with 4.

He got = Rs 2,469

The son did the division again 2456 ÷ = 614.

Before telling his father he checked on his own.

614 × 4 = 2456. Now, it is correct. Each one will get Rs 614.

Practice Time

1 Do these divisions. Check your results by multiplication.

a) 438 ÷ 9 b) 3480 ÷ 12 c) 450 ÷ 7

d) 900 ÷ 10 e) 678 ÷ 6 f) 2475 ÷ 11

2 Solve the given sums and colour the answers in the grid given below. See what you find.

21 × 6	15 × 7	93 × 2	17 × 5	10 × 10	
26 × 26	77 × 10	50 × 10	11 × 11	59 × 7	31 × 19
85 × 30	64 × 42	3200 × 40	19 × 3	248 × 8	
432 ÷ 18	729 ÷ 9	825 ÷ 5	221 ÷ 13	576 ÷ 12	
288 ÷ 4	869 ÷ 11	847 ÷ 7	981 ÷ 3	475 ÷ 19	

545	110	434	642	709	623	919	341	72	168
984	165	561	608	236	513	529	62	259	905
709	907	367	632	336	121	492	178	431	475
165	806	584	186	100	589	72	717	248	676
624	80	105	24	165	17	85	770	126	500
247	997	485	2688	81	80	48	901	327	121
742	427	756	531	79	2550	347	1001	314	57
945	1000	687	854	1200	999	24	3126	918	53
109	799	845	1999	864	955	123	1234	678	56
549	459	614	1864	834	559	900	1111	268	171

Now Let Us Do These!

Q.NO.1 Multiply

i) 5986 × 42 ii) 1348 × 42 iii) 9307 × 17 iv) 123 × 123

Q.NO. 2 Complete the pattern:

a) 1 × 9 – 1 = 08
21 × 9 – 1 = 188
321 × 9 – 1 = 2888
4321 × 9 – 1 = 3 _ _ _ _
_ _ _ _ _ × 9 – 1 = 48888
654321 × __ –1 = _ _ _ _ _ _
b) 37 × 3 = 111
37 × 6 = 222
37 × 9 = 333
37 × _ = 444
37 × 15 = ____
37 × 21 = ____

Q.NO.3 Kabir saved Rs.565 a month. How much did he save in 5 years?

Q.NO. 4 There are 560 children in a school. Rs.20 is spent on each child every day. What is the amount spent on all children in one day?

Q.NO. 5 Find the product of 888 and the sum of 2676 and 2004?

Answers

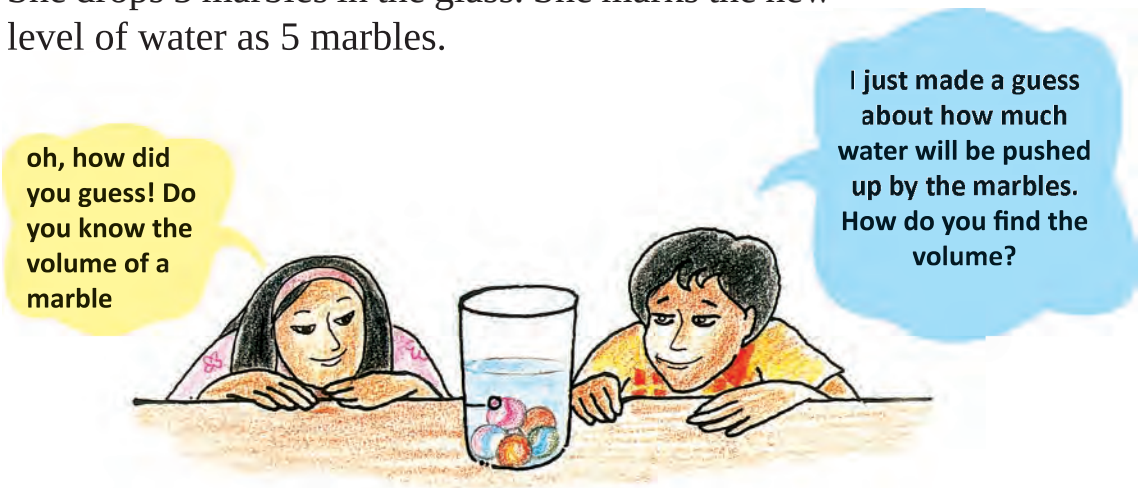
Q.NO. 1
i) 251412 ii) 640300
iii) 158219 iv) 15129
Q.NO. 2
Both a) and b) are self explanatory
Q.NO. 3
Rs.33900
Q.NO. 4
Rs. 11200
Q.NO. 5
4155840

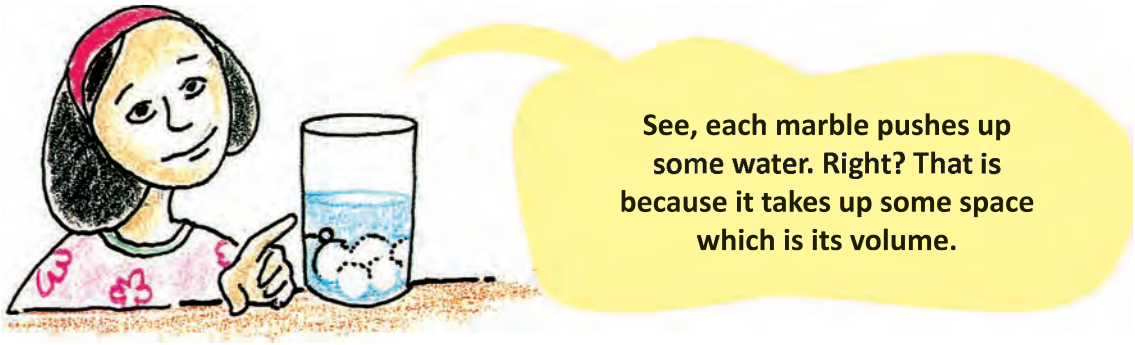
How Big? How Heavy?

Chapter 12

Saima collects things like marbles, coins, erasers etc. She takes some water in a glass and marks the level of water as 'O'.

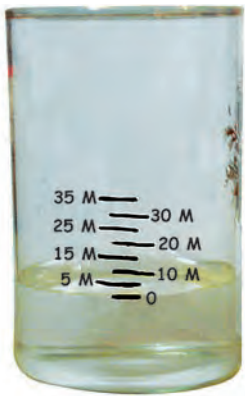
She drops 5 marbles in the glass. She marks the new level of water as 5 marbles.





Your Measuring Glass

Now make a guess. Do you think the volume of 10 five-rupee coins will be more than that of 10 marbles?



Guess the volume of each of these:

- A ball is nearly _____ marbles.
- An eraser is nearly _____ marbles.
- A lemon is nearly _____ marbles.
- A pencil is nearly _____ marbles.
- A potato is nearly _____ marbles.

Now make your own measuring glass using 35 marbles.

Take a glass of water and mark the level of water as 'O'. Then put in 5 marbles and mark the level of water as 5 M.

Again drop 5 marbles and mark the level of water as 10 M. Likewise make the markings for 15 M, 20 M, 25 M, 30 M and 35 M.

Now put each thing in the measuring glass and check your guess.

Try with different things like a matchbox, a stone, etc. and fill the table.

Name of the thing	Its volume (nearly how many marbles?)

Which has More Volume?

Can you think of ways for making a measuring bottle which can measure 10 ml, 20 ml, 30 ml, ……, 60 ml? Discuss with your friend.

Afzal and Sakeena made their measuring bottles.

Afzal had an injection. He used it to make a measuring bottle. Sakeena used an empty medicine bottle.

Sakeena used her measuring bottle to find the volume of five-rupee coins. She found that **9 five-rupee coins push up 10 ml of water.** So you can also use 9 five-rupee coins to make your measuring bottle! Go ahead!

Use your measuring bottle to find out:

a] What is the volume of 6 marbles? _____ ml.

b] What is the volume of 16 one-rupee coins? _____ ml.

Now solve these in your mind.

c] The volume of 24 marbles is _____ ml.

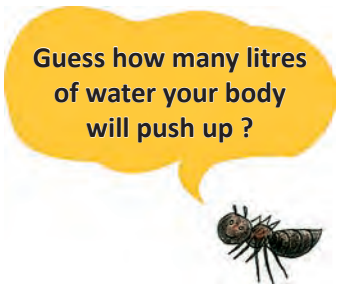
d] The volume of 32 one-rupee coins? _____ ml.

e] Mollie puts some five- rupee cons in the measuring bottle. How many coins has she put in it:

- ❖ If 30 ml water is pushed up? _____
- ❖ If 60 ml water is pushed up? _____

First guess and then use your measuring bottle to find out the volume in ml of some other things.

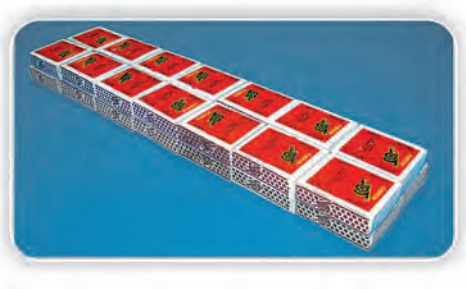
Thing	Its Volume (in ml)



Practice Time

1. A stage (platform) is made with Merry Math books. The volume of this stage is the same as _____ cm cubes.

2. Guess the volume of these things in cm cubes.



- ❖ A matchbox is about _____ cm cubes.
- ❖ A geometry box is about _____ cm cubes.
- ❖ An eraser is about _____ cm cubes.

How will you check your guess? Discuss.

Matchbox

Nusrat is making a stage with matchboxes.

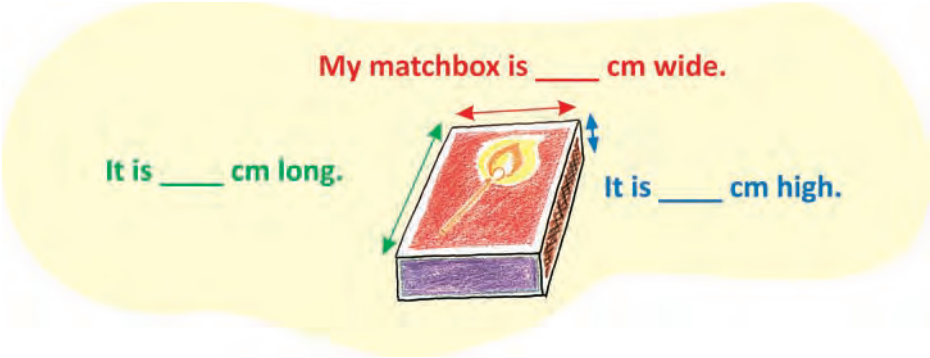
She first puts 14 matchboxes like this in the first layer.

She makes 4 such layers and her stage look like this.

- ❖ She used _____ matchboxes to make this stage.
- ❖ The volume of one matchbox is the same as 10 cm cubes.

  Then the volume of this stage is the same as _____cm cube
- ❖ If all these cubes are arranged in a line, how long will that line be? _____cm.
- ❖ Which has more volume____your Merry Math book or Nusrat's platform?

With your friends, collect many empty matchboxes of the same size. Measure the sides and write here.



❖ Use 56 matchboxes to make platforms of different heights.

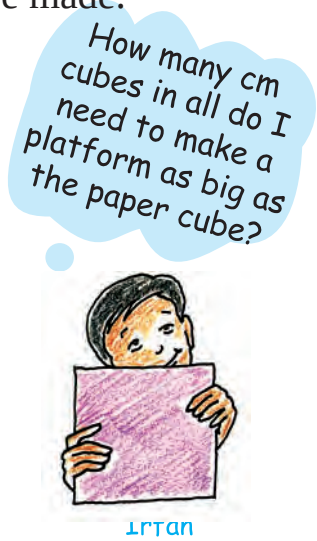
Fill this table.

	How high is it?	How long is it?	How wide is it?
Platform 1			
Platform 2			
Platform 3			

The volume of each platform is equal to _____ matchboxes.

❖ Make deep drawings of the platforms you have made.

How Big is your Cube?



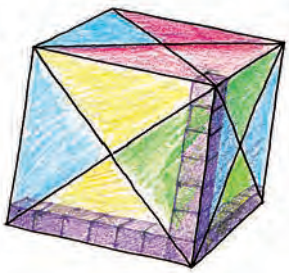
1. a) How long is the side of your cube? _____

   b) How many centimetre cubes can be arranged along its:

   ❖ Length? _____

   ❖ Width? _____

   ❖ Height? _____



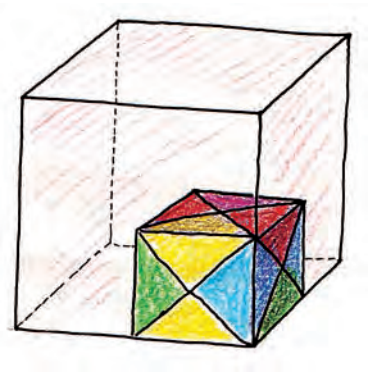
c) Answer Irfan's questions:

d) So the total cm cubes = _____

e) The volume of the paper cube is same as ____cm cubes.

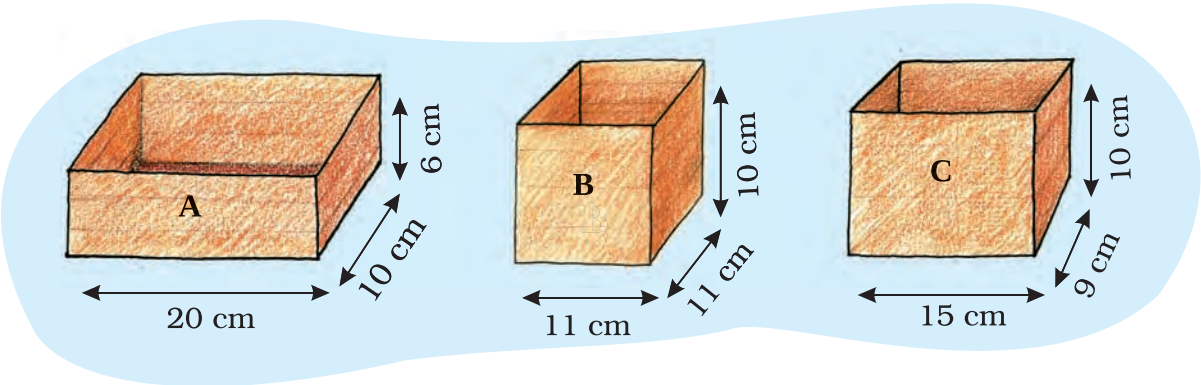
2. Arif made a big cube having double the side of your paper cube.

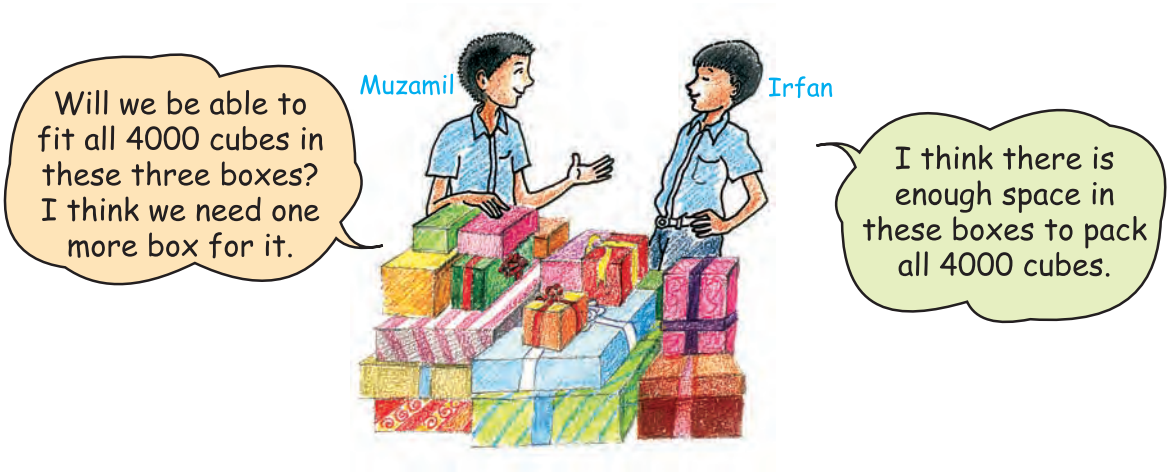
   How many of your paper cubes will fit in it? Try doing it by collecting all the cubes made in your class.



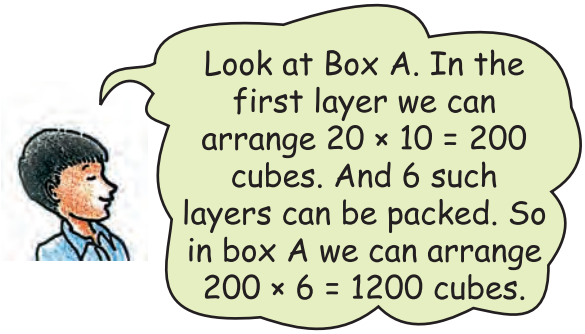
Packing cubes

Muzamil and Irfan want to pack 4000 centimetre cubes in boxes. These are to be sent to a school. There are three different boxes available for packing.





- What is your guess? Who is right?
- How can Muzamil and Irfan test their guesses before packing the cubes in the boxes? Discuss with your friend.



Use Muzamil's method and write.

- _____ centimetre can be arranged in box B.
- _____ centimetre cubes can be arranged in box C.
- So _____ centimetre cubes in all can be packed in the three boxes.

Find out and discuss

- How do people who cannot see make out different notes and coins? (Hint: Look for a shape ▲, ■, ●, ▬ etc. on notes of Rs 20,50,100,500 etc and feel it.)
- What should we look for to check if a 100-rupee note is real or fake?

Now Let Us Try These

Q.NO.1 1 litre = _____ ml

Q.NO.2 a) $\frac{25}{10}$ ☐ $\frac{15}{20}$ (use >, <, =)

b) $\frac{3.5}{10}$ ☐ $\frac{0.9}{100}$

Q.NO.3 Find the volume of a cube with edges 5 cm.

Q.NO.4 The chemistry book is having edges 2 cm, 5 cm, and 3 cm while as mathematics book is having edges 3 cm, 2 cm and 10 cm. Thus find out whose book is having more volume.

Answer

1. 1000ml
2. a) >
   b) >
3. 125 cm^3
4. Mathmatics book has more volume.