Parts and Wholes

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 $\frac{1}{3}$ 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 $\frac{1}{2}$? 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.
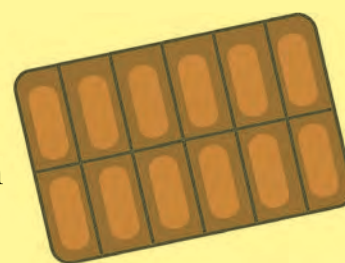
Your magic top is ready. Spin it fast!

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

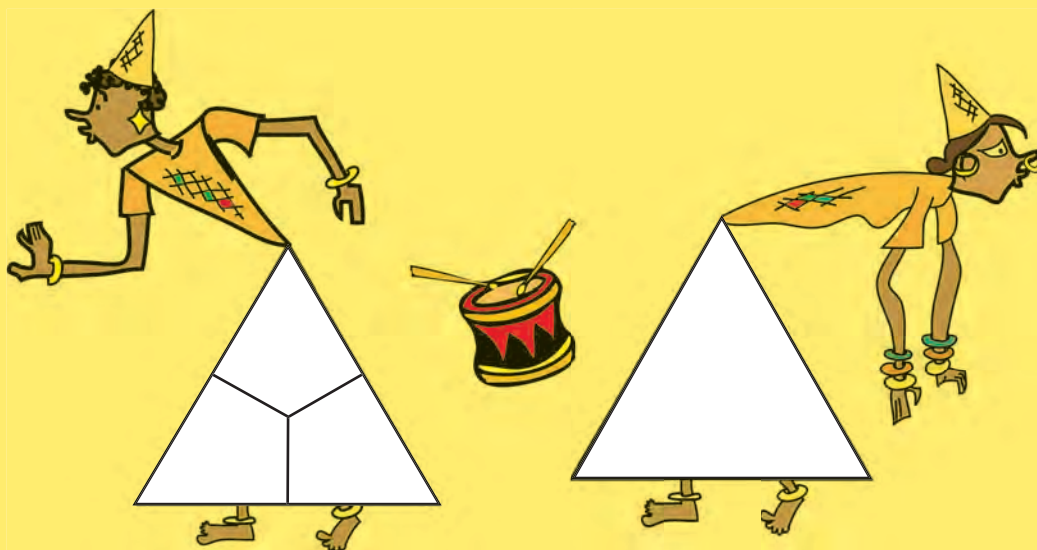What part of the chocolate did Ulfat eat?

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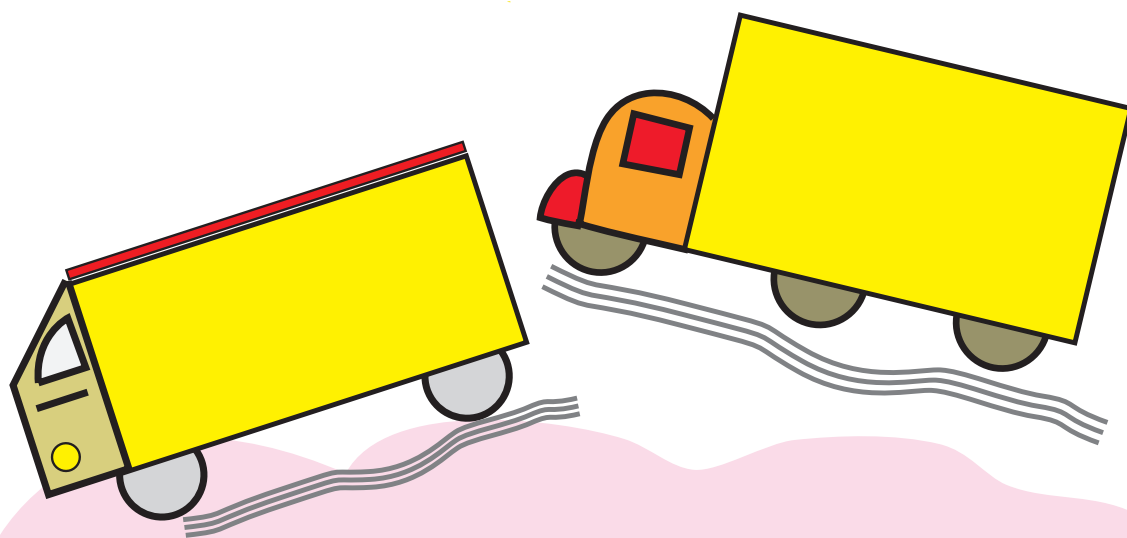
Now try to make three equal parts of this triangle in a different way. Colour each one-third with a different colour.

D)   *Six Parts of a Rectangle*

Bisma has divided a green rectangle into six equal parts like this.
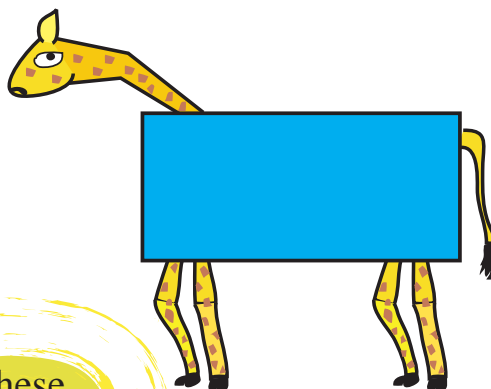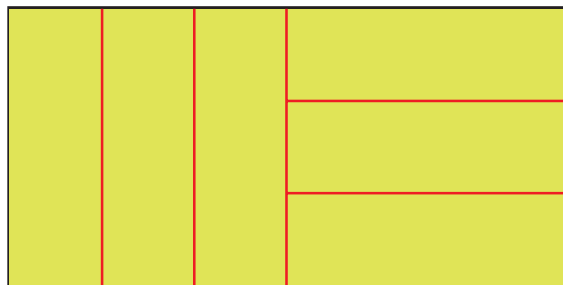
❖ Now you divide each of these rectangles into six equal parts. Use a different way for each of the three rectangles

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.

I am a poet

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."
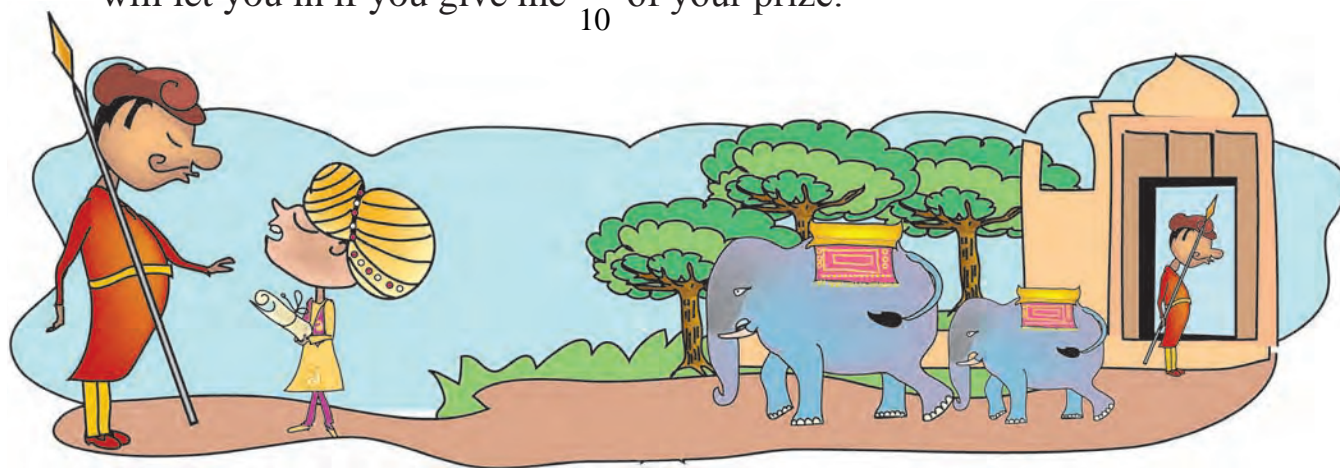
Young Birbal agreed since he had no other way.

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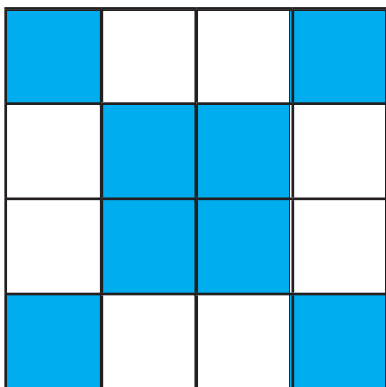
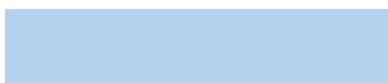❖ What happened after that? Complete the story. What part of the prize did the poet get?
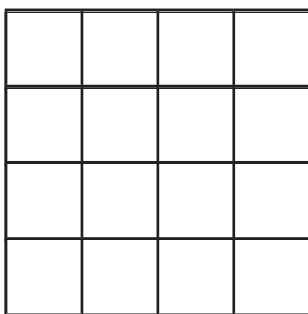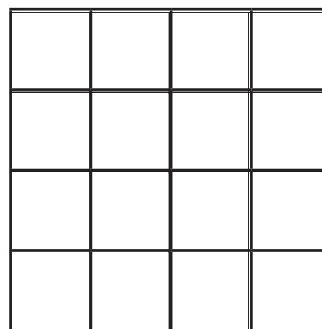
Pattern in Parts

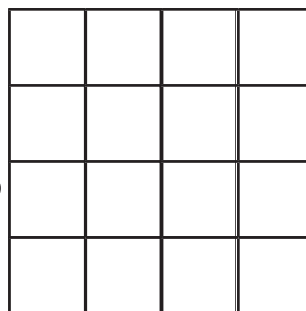**A**

$\frac{8}{16}$ 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?
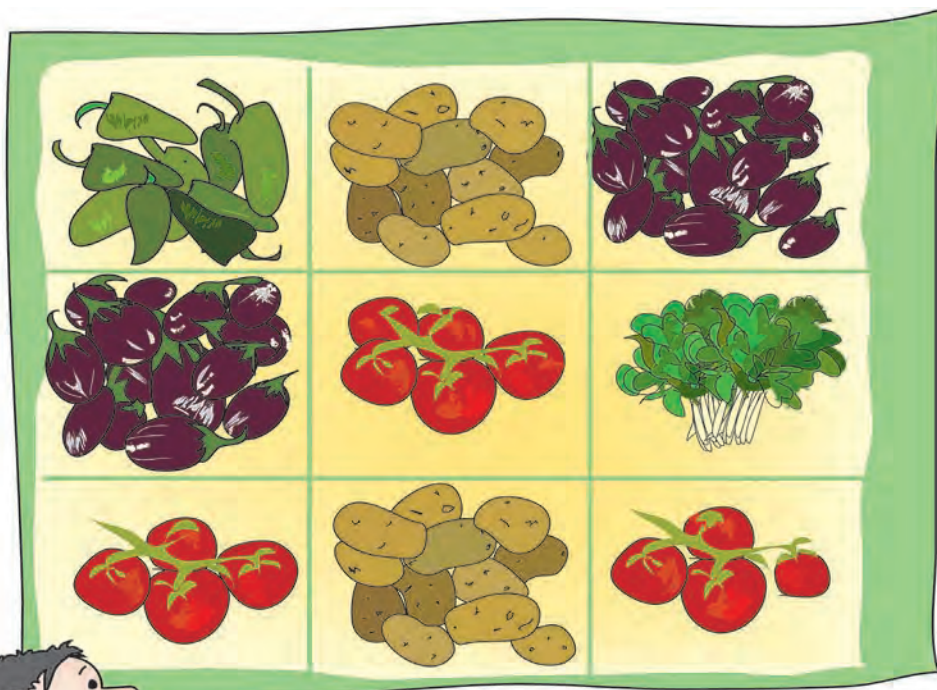
Mark ($\times$) on the wrong answer.

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.
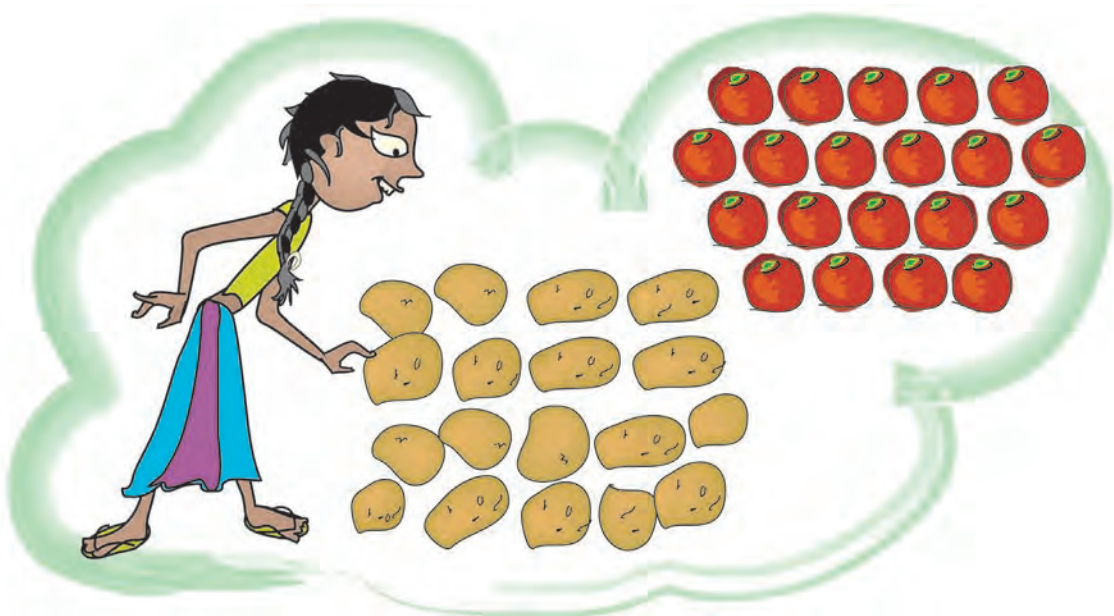
❖ How many potatoes and tomatoes did Yasmeen get?

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

A   B

C   D
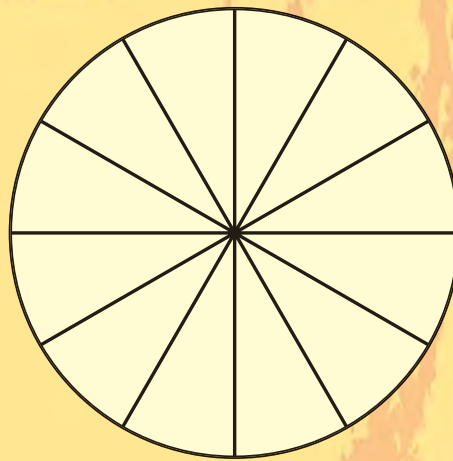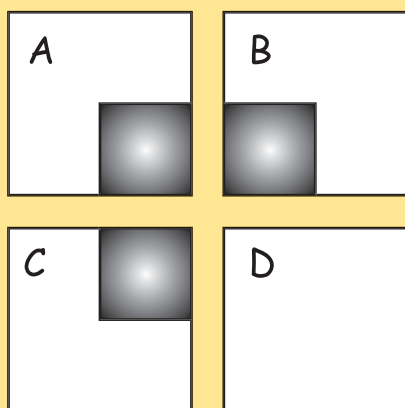
> Look carefully at the picture and get ready to answer four questions. Ready?

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??
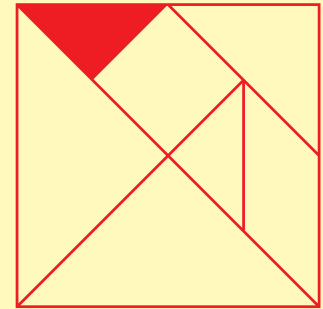
Guess and Check

a. What part of each shape is coloured?

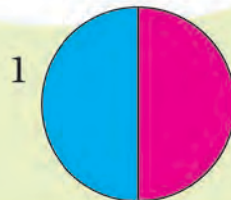First guess the answer, then check.

(1)

(2)

(3)

(4)
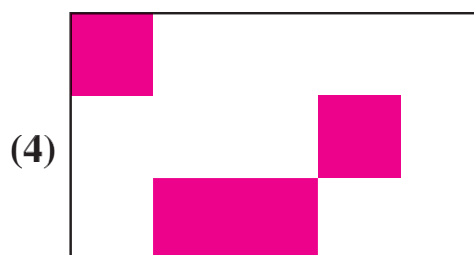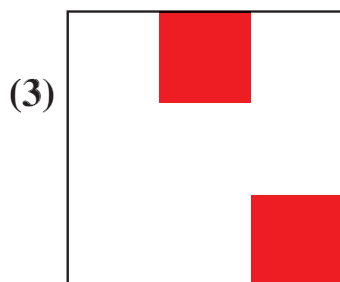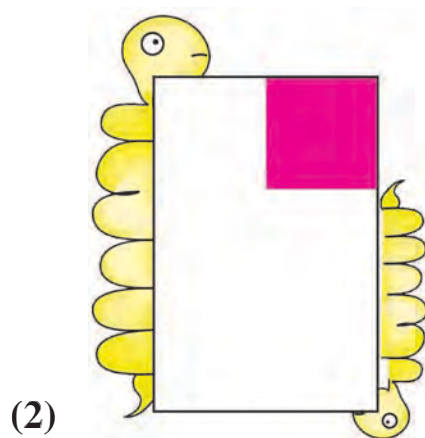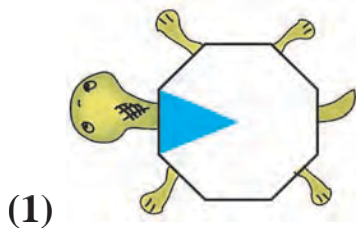
B)   Do you remember this picture? Look at the small triangles. What part of the square is it? How will you find this out?

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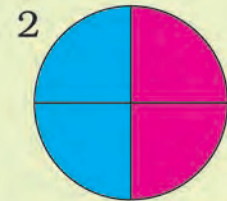
Coloured Parts

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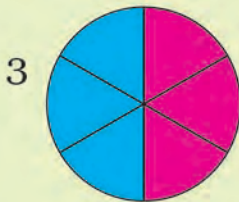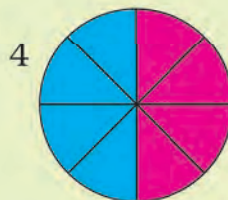
Here the circle is _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _
_ _ _ _ _ _ _ _ _ _ _ _ _ _ _

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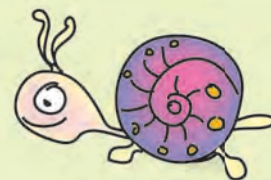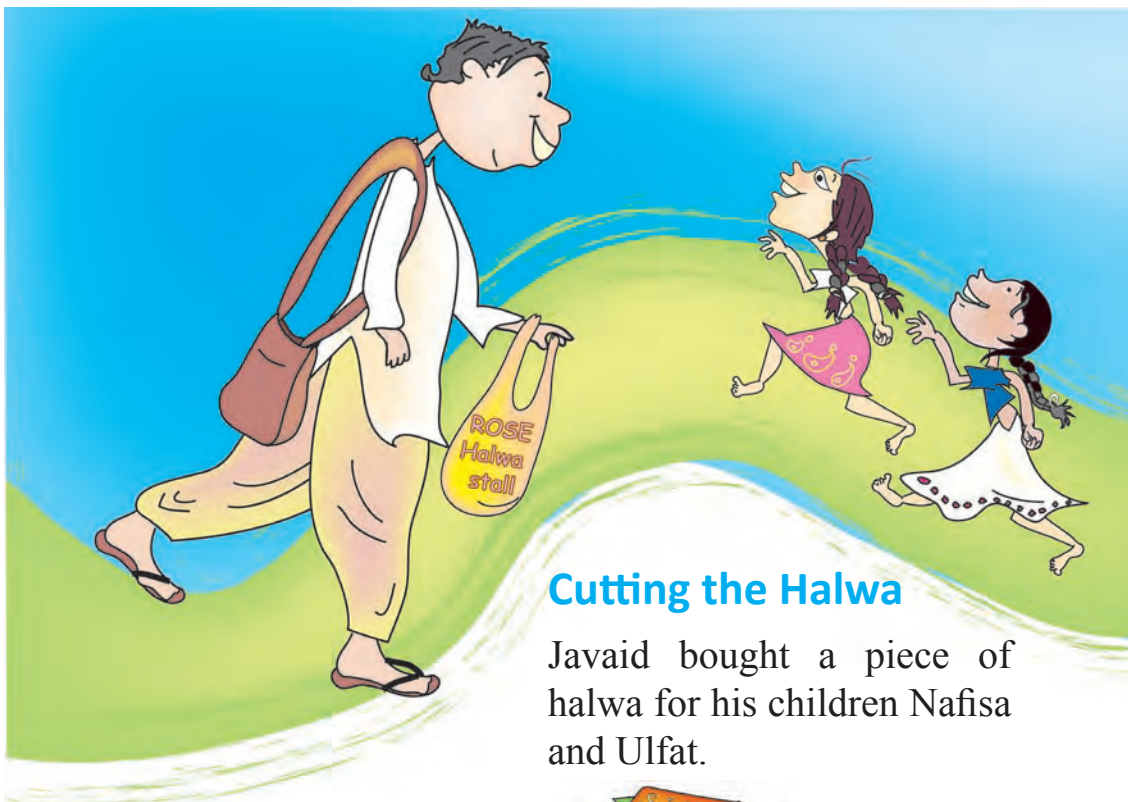
Cutting the Halwa

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 —
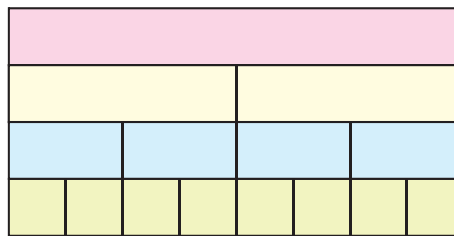
$$\frac{1}{2} = \underline{\quad} = \underline{\quad} = \underline{\quad} = \underline{\quad} = \underline{\quad}$$

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 $\frac{1}{4}$?

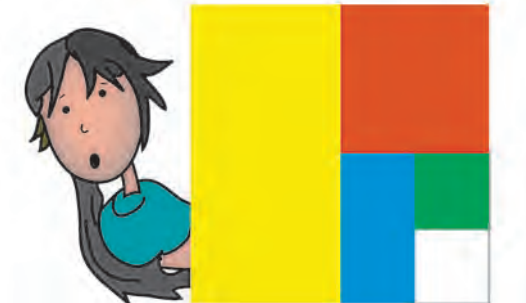How many $\frac{1}{8}$ are in $\frac{1}{2}$?

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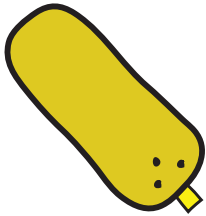
2)   The picture shows one-third of the blades of a fan.
      Complete the picture by drawing the other blades.

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?
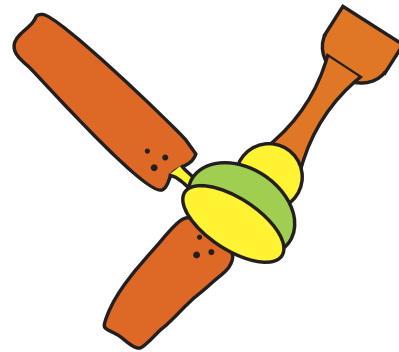
Rupees and Paise

How many [50] will make a rupee?

Is 50 paise half of one rupee?

How many [25] 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.
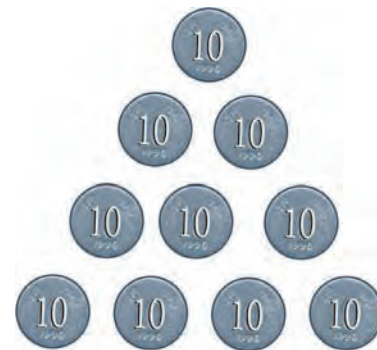
My eldest daughter will get $\frac{1}{2}$ of my camels

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
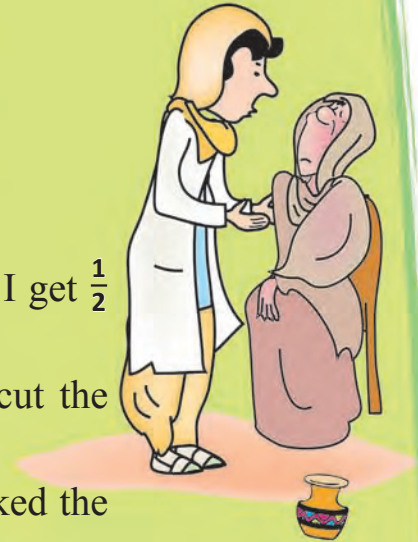
Use different colours to show

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?

> **Asif sleeps at 10 pm and wakes up at 6 am. He plays from 7 to 8 am and again from 4 to 6 pm.**

> **One day is 24 hours. Then how will I find out one third of a day?**
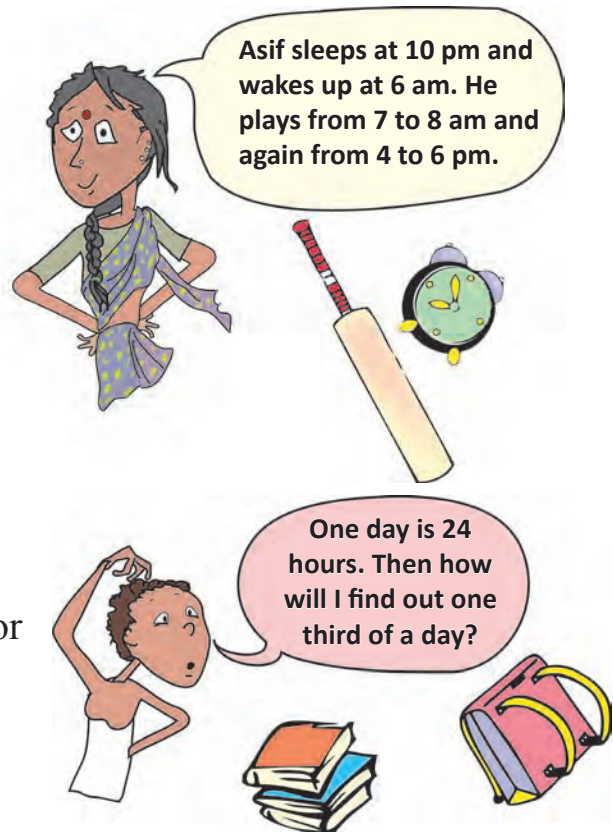
School Magazine

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.

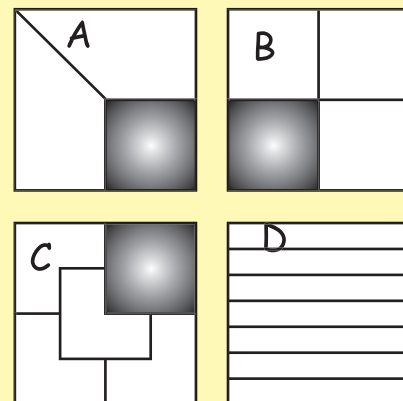Most people sleep about 8 hours a day.

Then what part of a day is it? _____

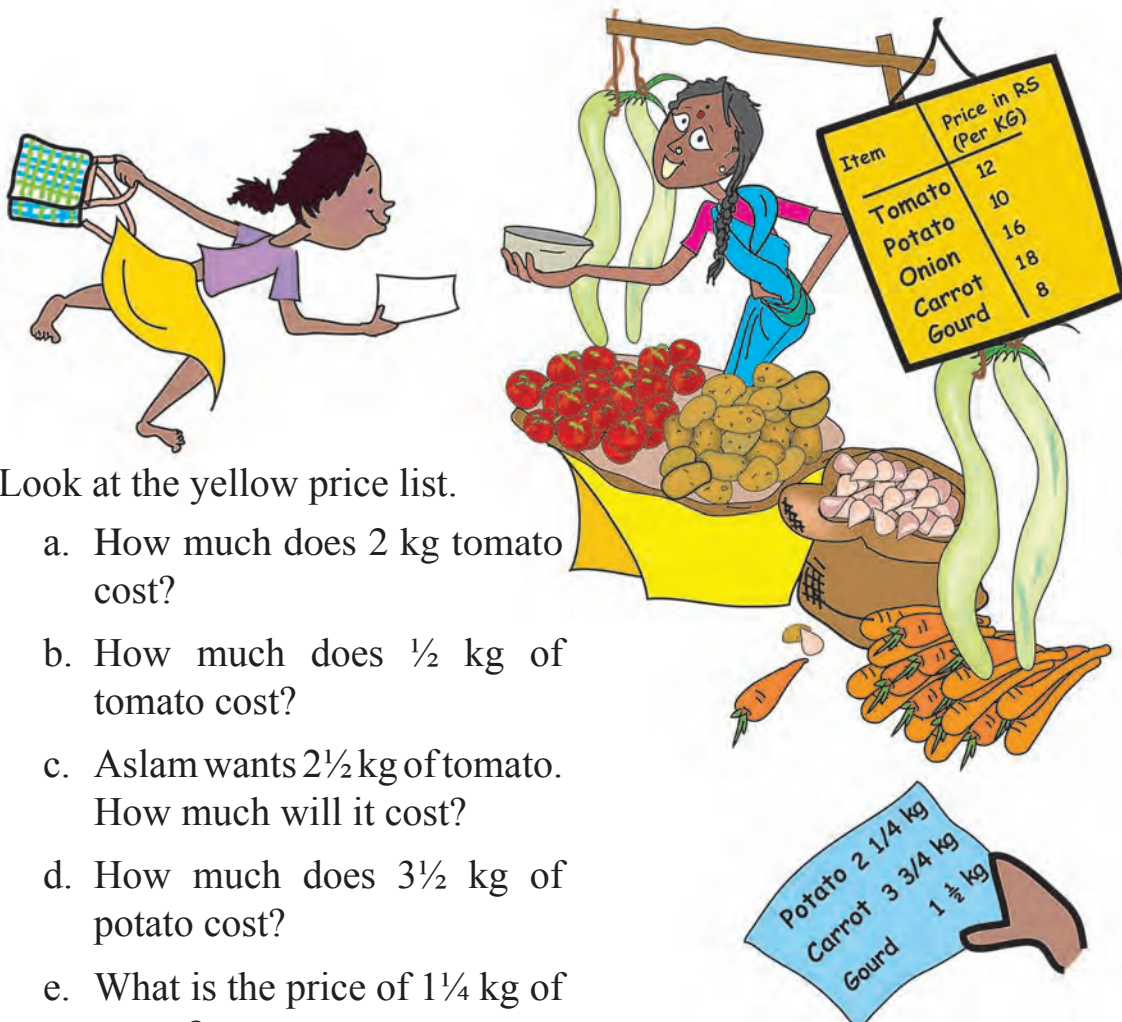So what part of year do they sleep? A person 60 years old must have slept _____ years!!!

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.

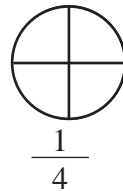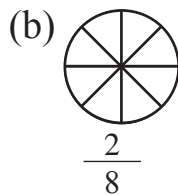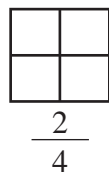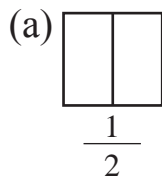| Item	Price in (per kg)	Amount
Total		

Let's Try These Now

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

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

(c) $\dfrac{6}{8}$ ☐ $\dfrac{3}{8}$

Q.NO. 2 Colour to show equivalent fractions:

(a)

$\dfrac{1}{2}$ $\dfrac{2}{4}$

(b)

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

Q.NO.3 Add:

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

Q.NO. 4 Bisma got prize money of Rupees100. She gave $\dfrac{1}{10}$ of prize money to her sister, $\dfrac{4}{10}$ of her prize money to her mother and $\dfrac{1}{2}$ 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 $\dfrac{5}{6}$ 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