

Math-Magic 2

What is inside this book?

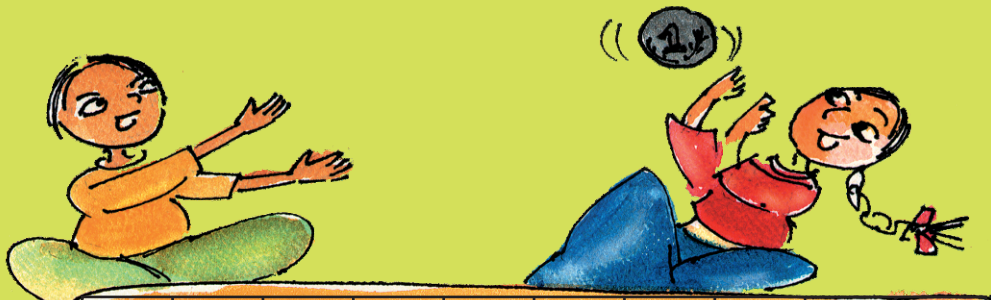
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"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

“SAMAGRA SHIKSHA, MANIPUR” AND “NOT FOR SALE”

A Page to Cut Out

Your Game Board



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

Use this board to play games like those given on page 79 and page 83. You can also make your own games by changing the rules.

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1 What is Long, What is Round?

Guess its Name

Children love Uncle Meeku. He plays with them every day. Today he has kept different things in his bag. The game is "Guess its Name".

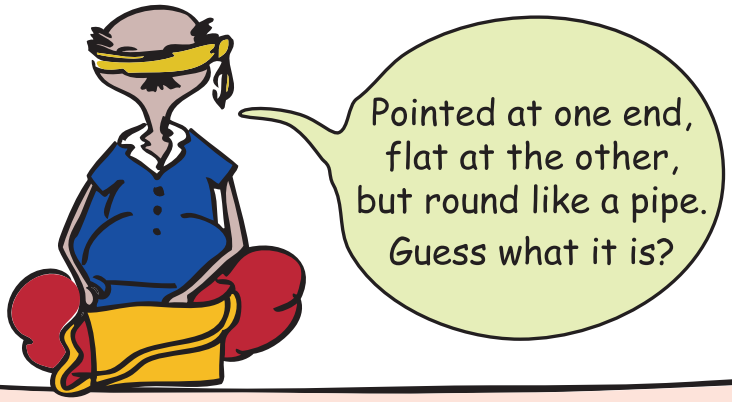


Uncle Meeku puts his hand in the bag.

Team A sings a song.



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Team A says — pencil.

✦ Do you also think so?

Now you think of a different answer for Uncle Meeku's question. _____



Now it is the turn of team A to touch and guess. Everybody sings:

Tell us, tell us how it feels.
We guess its name and win the game.

A child from team A puts his hand in the bag. Others in team A have to guess. Can you help them?



The game 'Guess its Name' helps children observe and describe shapes of different objects. Discuss similarities and differences among their properties, physical features etc., such as edges, corners, faces, smooth or rough surfaces, if it rolls or slides. For example, a matchbox has sharp corners and it cannot roll while a plate is flat and can roll.

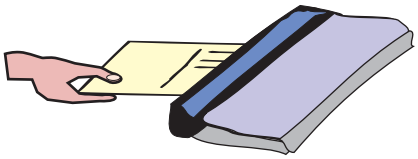
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Then is the turn of team B to feel and guess. And so the game goes on ...

Now you play this game in teams. Put different things in a bag. A cloth is tied on one child's eyes. She puts her hand in the bag. She touches it and says what it feels like. Her team has to guess the name.

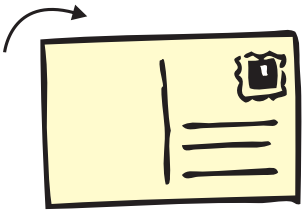
How Strong is a Postcard?

Hold a postcard from one corner. If you keep a book on it, can it hold the book?

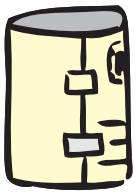


Now try this.

1. Roll a postcard to make a pipe.

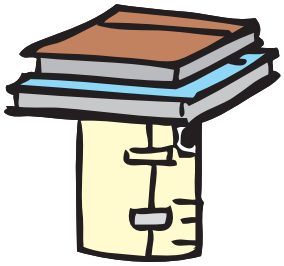


2. Use tape to stick the ends together.





3. Put a book on it. Does the postcard hold it? See how many books it can hold.



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Hurry Up! Be Quick!

Children are sitting in a circle in the class.

They are playing this game by clapping and singing.

What is long ..... what is round? .....
Look around ..... look around .....

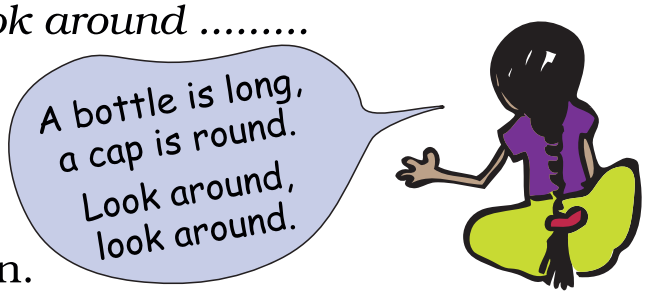
Reena says —



All children are singing .....

What is long ..... what is round? .....
Look around ..... look around .....

Meenu says —



And the game goes on.

✦ Now you play this game in your class. Take turns to name two things — one long and one round. Do not repeat things which others have named.

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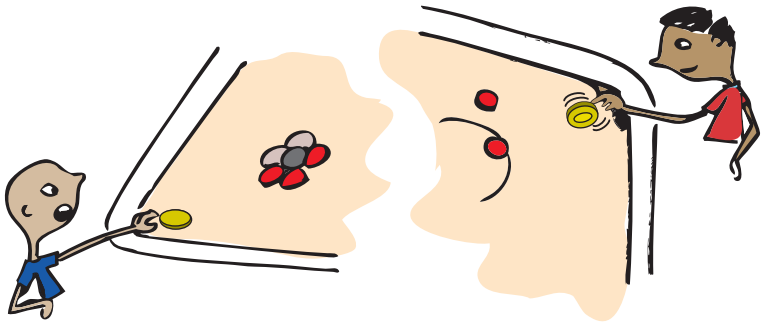
What Rolls, What Slides?

Look at the picture. Some children are rolling and some are sliding things in a park.



There are some things which can roll and some which can slide.

There are things which both roll and slide.



Start a discussion in the class on things in the child's environment which roll and slide. Help children to look at their shape and see how some things roll and others slide.

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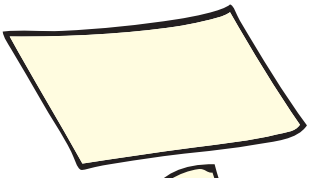
Look at things around you.

Write below:

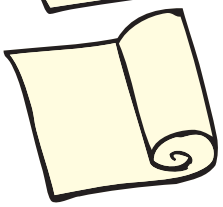
Things which roll	*Things which slide*	*Things which both roll and slide*

My Tiny Tree

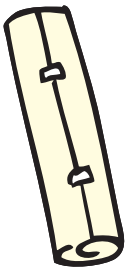
1. Take a sheet of paper like this.



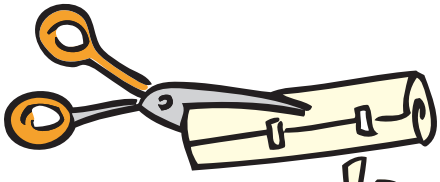
2. Roll the paper to make a pipe.



3. Your paper pipe will look like this now.
   Use glue or tape to stick it.



4. Using scissors, cut strips at one end of the paper pipe.
   Make 7 or 8 cuts.



5. Turn down the cut ends.

   Your tree is ready! Colour it.



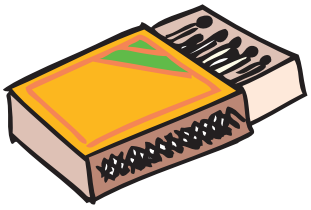


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The Tallest Tower



- Collect different things, such as boxes of different kinds, balls, erasers, matchboxes etc.
- Make your towers using different things, like only matchboxes, only tins.





Now mix and make with different things, like — shoe boxes and tins together, balls and matchboxes together.

Start a discussion in the class about which shapes can be stacked one over another and which cannot be. Encourage children to look for surfaces which are flat or not flat. They can also get an intuitive feeling that shapes with broader bases are more stable and discuss how different things like soaps, tea boxes, tins, etc. are stacked in a shop. Children will enjoy playing games like '*pitthoo*' (seven stones) in which they need to make stable stacks of irregular stones as fast as possible, while the other team runs for the ball.

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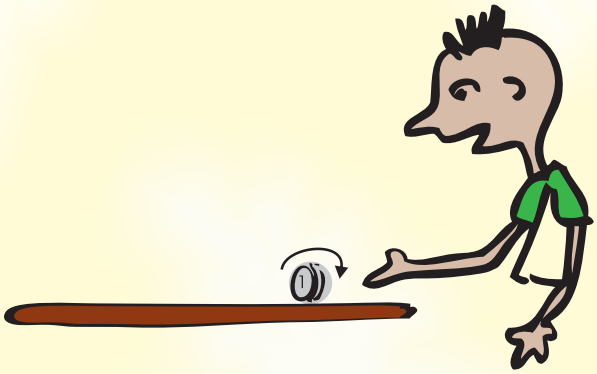
Coin Play

Try doing these with your coin.

- Hold the coin like this.



Make the coin spin. Does it look like a ball?



- Does a coin roll? Does it slide? Try.
- Can you make a 1-rupee coin stand like this?_____



Try doing the same using a 2-rupee coin and a 5-rupee coin.





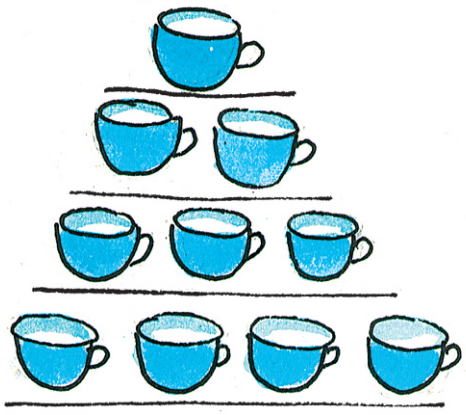
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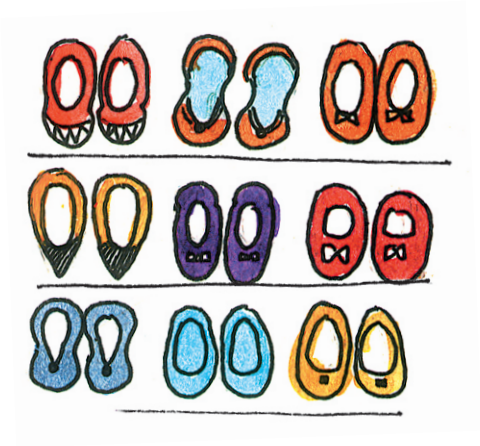


Counting in Groups

0219CH02

Look and Guess the Number





Can you guess how many cups?

Can you guess how many pairs of shoes?

3 and 3 is 6 cups and 4 cups below. That should be 10 cups.



There are 3 lines with 3 pairs of shoes in each line. That makes 9 pairs of shoes.

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✸ Look at how different things are kept in groups. Try to guess the total number without counting each thing.



_____ glasses

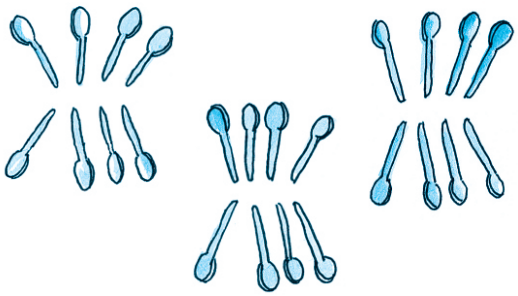


_____ bangles



_____ pairs of earrings

There are three groups of spoons.



✸ How many in each group? _____

✸ Guess the total number of spoons. _____

Ask children to guess the numbers of things around them. The idea here is to encourage them to look at the arrangement of objects and use the strategy of counting in groups.

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More or Less, Let Us Guess

Ring the correct answer:

- Number of teeth in your mouth
  - More than 40
  - Less than 40



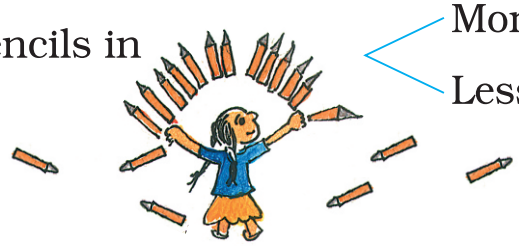
- Number of seeds in an orange
  - More than 50
  - Less than 50



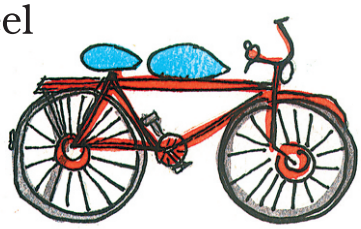
- Number of matchsticks in a matchbox
  - More than 30
  - Less than 30



- Number of pencils in **your** class
  - More than 45
  - Less than 45

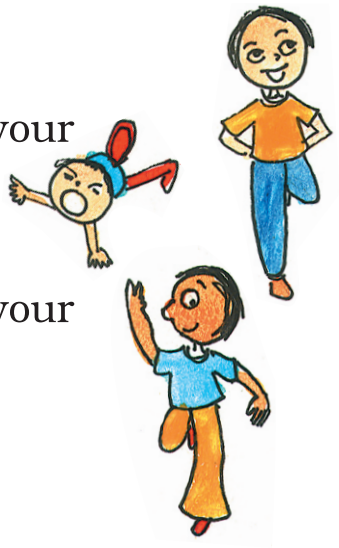


- Number of spokes in one cycle wheel
  - More than 20
  - Less than 20



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Hop Till You Drop

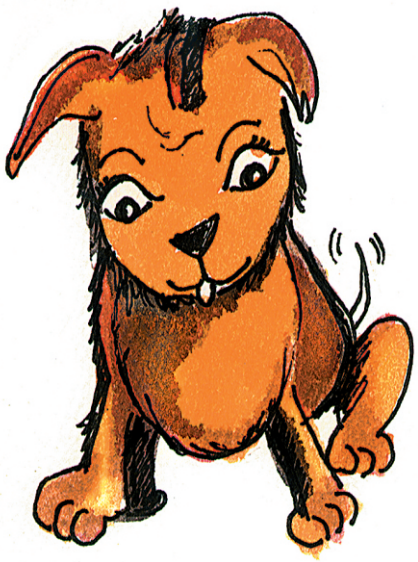


- How many times can you hop on your right foot without falling? _____

- How many times can you hop on your left foot without falling? _____

Join the Dots

Jojo doggy is hungry. Join the dots in order, from 21 to 52, and find out what is hidden for him to eat.





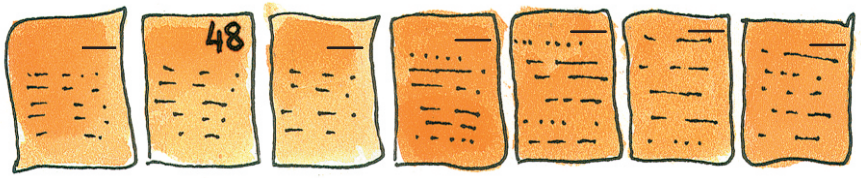
"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Naughty Bhurru

Bhurru has torn some pages of this book.



Write the page numbers in the correct order.



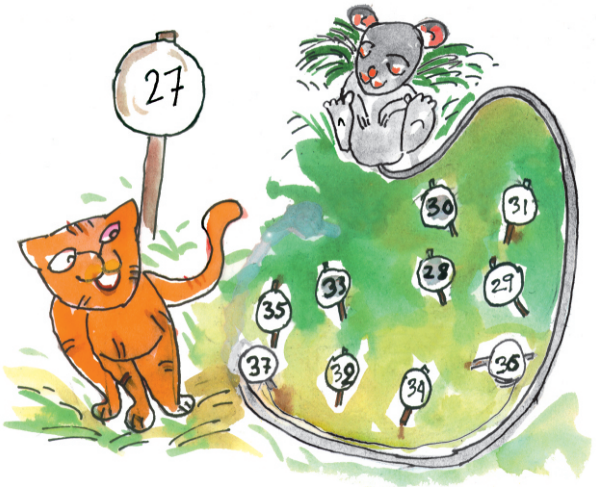
Puzzling Tail

Chipku rat has a long tail.

When he was sleeping, naughty cat thought of tying his tail to the poles.

She started from the pole with the biggest number. She moved on to the smaller numbers in order.

Help her in tying. But the tail should not cross itself anywhere.



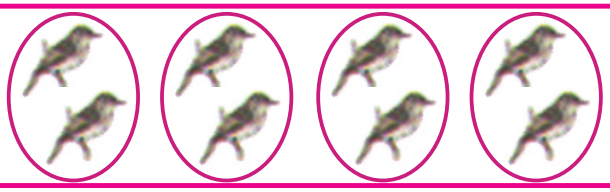
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“SAMAGRA SHIKSHA, MANIPUR” AND “NOT FOR SALE”

LOCAL TEXT

CHANG AND SHI

Group the objects into pairs and write whether each collection is Chang or Shi.

1.		Shi
2.		Shi
3.		
4.		
5.		
6.		

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

LOCAL TEXT

What do you notice?

1	2	3	4	5	6	7	8	9	10
Chang	Shi	Chang	Shi	_____	_____	_____	_____	_____	_____

Have you ever seen any pattern similar to this pattern? If yes, tell the pattern.

FACT FILE

The idea of Chang Shi prevailing in Manipuri Society corresponds to the concept of odd and even numbers.



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

LOCAL TEXT

FRUIT SELLER

A fruit seller, Chaobi has four bunches of bananas. Linthoi wants to buy a bunch of bananas for auspicious purpose. She is looking at these. Chaobi says, you can select what you want.



Linthoi counts the bananas in pairs. She counts the first pair as Chang the Second as Shi, third as Chang and so on.

Guess! Which bunch of bananas does sheselect for auspicious purposes?

Find Out

Your mother buys six bunches of bananas.
Identify the bunches that are Chang. Shi or neither Chang nor Shi.



Shi



Neither Chang nor Shi



Chang



Neither Chang nor Shi





"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

LOCAL TEXT

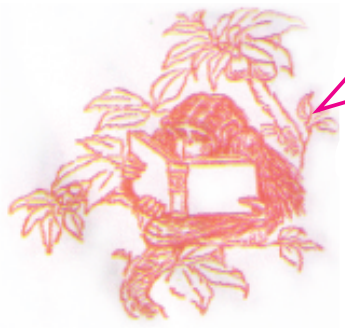




How many bunches of bananas are there with types of Chang Shi and neither Chang nor Shi?

FACT FILE

As an exception, in selecting a bunch of bananas for auspicious purposes, the Meiteis count them in pairs.

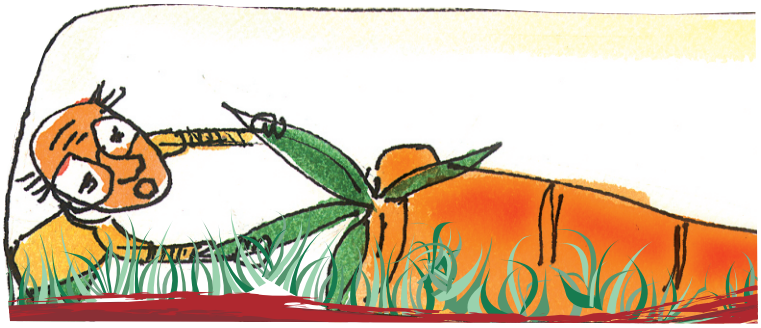


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The Big Carrot



An old man planted a carrot seed.



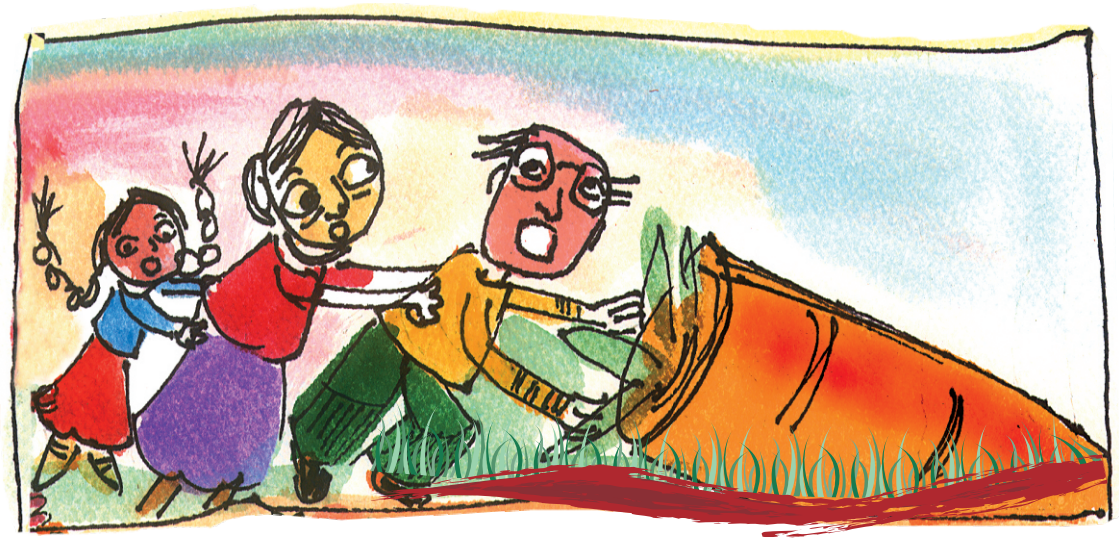
The carrot grew big and sweet. It grew very very big!

He tried to pull out the carrot but it did not come out.

He quickly called his wife.

The old man pulled the carrot leaves and the old woman pulled him. But they could not pull it out.

The old woman called her granddaughter. The old man, the old woman and the granddaughter tried but could not pull the carrot out.



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

The granddaughter called the dog. The old man, his wife, the granddaughter and the dog could not pull the carrot out.

Then the dog called the cat. Everyone pulled and the cat held on to the dog's tail. The carrot did not move.

The cat called the mouse.



They all pulled hard together and the carrot came out. ZABOOM! They all fell down!

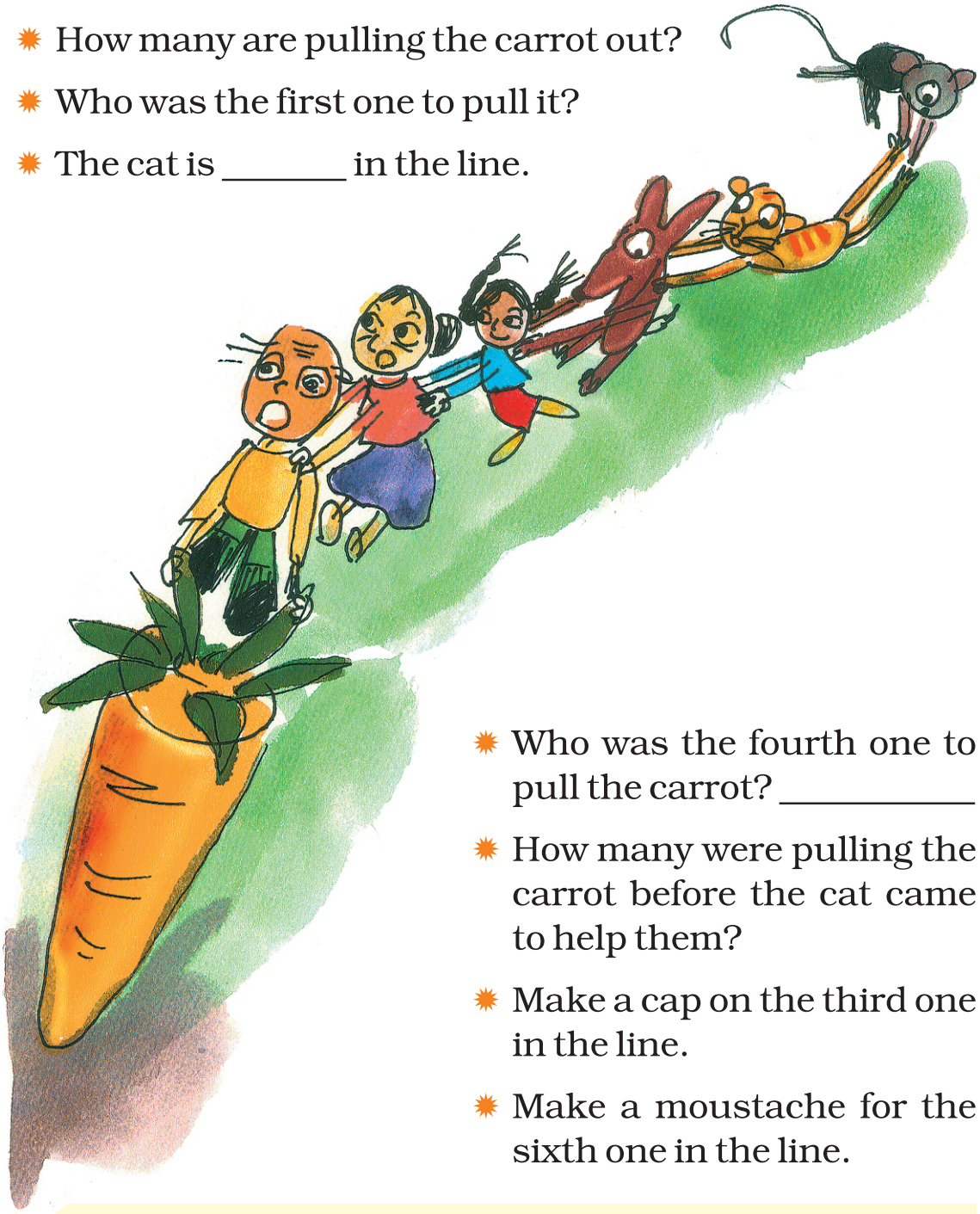


They were so excited! So they all went to the kitchen to make *gajar ka halwa* and ate it up.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Look at the picture and write:

- How many are pulling the carrot out?
- Who was the first one to pull it?
- The cat is _____ in the line.



- Who was the fourth one to pull the carrot? _____
- How many were pulling the carrot before the cat came to help them?
- Make a cap on the third one in the line.
- Make a moustache for the sixth one in the line.

Teachers can create practice activities for the use of ordinal numbers. For example, make 6 children stand in a line. Assign them positions as first, second, third etc. with respect to some reference point. Give them interesting tasks to perform, such as 'third child, tickle your partner', 'second child, hold your nose', etc.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Seema's Century

Seema has made a design with different *bindis*.



- Look at the groups and guess the total number of *bindis*.
- Draw more groups to complete 100 *bindis*. How many more *bindis* did you have to draw?

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"



How Much Can You Carry?

The Clever Donkey and His Heavy Sack

Sandesh has a donkey. It carries sacks full of salt on its back.

On the way to the market they have to cross a river.

One day, while crossing the river, the donkey slipped and fell into the river.

When it got up, the sacks felt very light.

❊ Guess why the sacks felt lighter?

The donkey was very happy. This also gave it an idea.

Next day, while crossing the river, the clever donkey decided to take a dip.

This time Sandesh understood the donkey's trick.



Next day Sandesh put sacks of woollen cloth in place of salt.

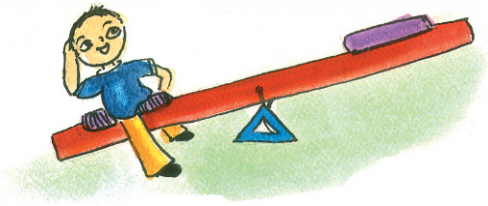
❊ Now, what would happen to the donkey when it dipped into the river? Why?

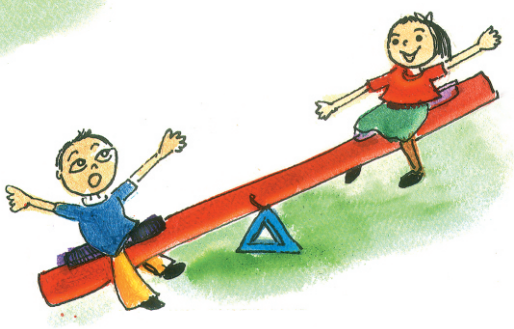
As reading skills are not yet fully developed in young children, pictographs serve as visual aids. Children also enjoy pictographs.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Raju Wants to Ride a See-saw

Raju needs a friend to ride a see-saw.



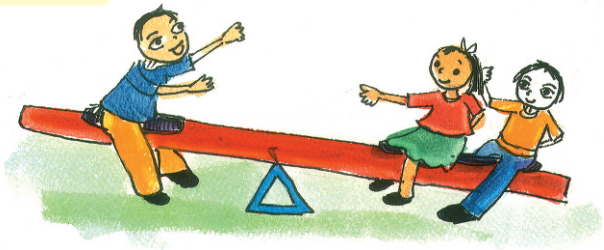


Rani comes to help Raju.

But still Raju cannot ride it.

❊ Can you tell why? Circle the correct answer.

Raju is heavier/lighter than Rani.



Aslam comes to help them.

Look at the picture.

❊ Can you tell why the see-saw turned this way?

Raju is heavier/lighter than Rani and Aslam together.

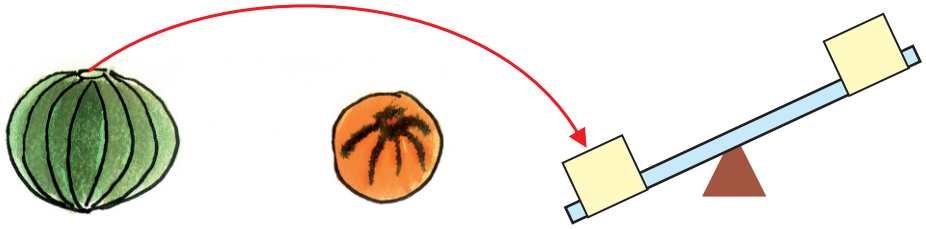




"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

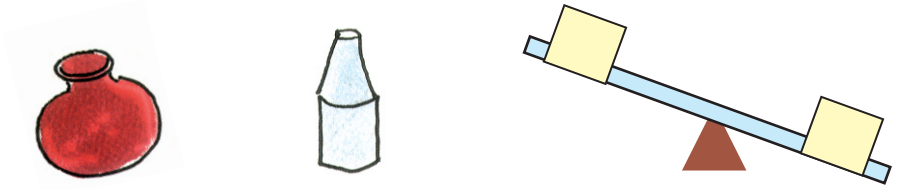
Heavier or Lighter

Which of the two things will make the see-saw go down? Look at the example.



❊ Draw a line to match the heavier one.

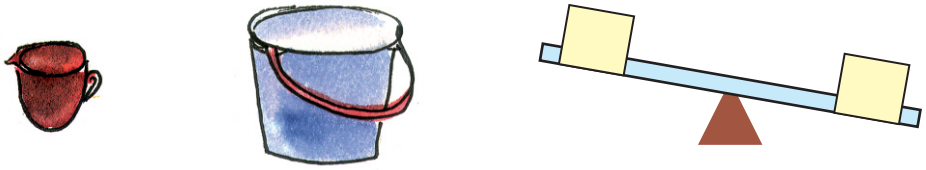
a)



b)

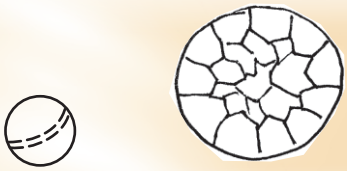


c)

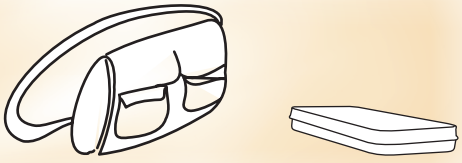


❊ Colour the one which is lighter.

a)



b)

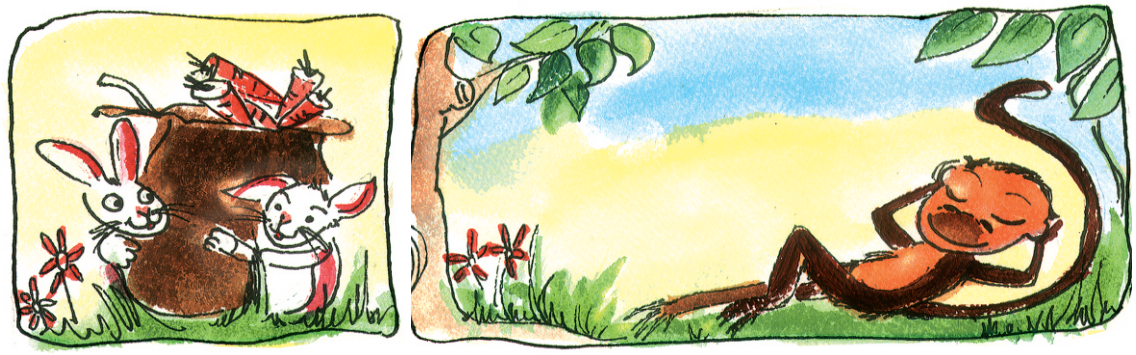


Before doing this activity, let children compare weights of different things by holding them in their hands.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Chhotu Monkey and the Carrots

Chikky and Micky rabbits saw a bag. It had carrots in it.



Chikky and Micky started fighting.



Chhotu monkey came to help them.



Chhotu monkey brought something to help them.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

❊ Guess and tell what Chhotu monkey used to help Chikky and Micky. Draw a picture of it in the monkey's hand.

Find Out

❊ Your parents buy carrots for the family. How much do they buy at one time?

❊ How does the vegetable seller weigh the carrots?

How Much Can Simran Carry?

Simran's father needs to move some things from the store of their house to the kitchen.

Simran wants to help her father.



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

❊ Guess which bags Simran can carry.



❊ Guess who can carry what —

a) Her father? _____

b) Her mother? _____

c) Her younger sister? _____

❊ Can Simran carry any two of these bags together?

If yes, which ones? _____

❊ Which bags can you carry? Guess. _____



❊ Match the picture of the animal with the thing it can carry.



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"



Counting in Tens

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Chickens and the Clever Fox

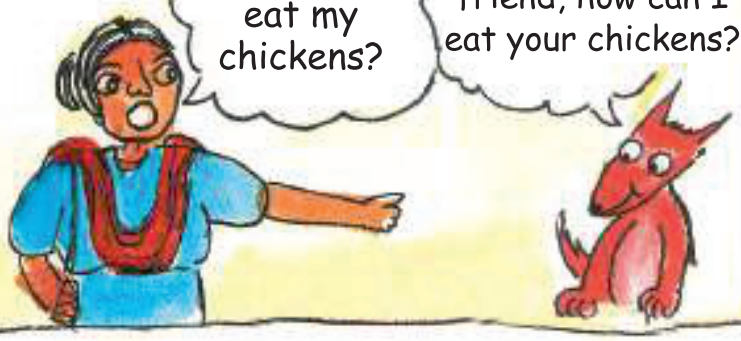


Tikloo farmer has many chickens in her farm. One day a clever fox saw these naughty chickens playing around.

From that day, she started stealing and eating chickens every day.

Tikloo came to know about it.

She asked the fox.



Tikloo thought of counting her chickens every morning and evening. But the chickens kept moving around here and there. She said — I will put 10 chickens in one basket and count them. And if I find any of them missing ..... I will give the fox a tight slap.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

In the morning, she counted her chickens.

- How many baskets of 10 chickens are there? _____
- How many chickens are there in all? 50 + 4 = _____



In the evening, she counted the chickens again.

- There are _____ baskets of 10 chickens.
- There are _____ + 3 = _____ chickens in all.
- 54 – ____ = _____ chickens have been eaten by the fox.



"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

How Many are These?

Bhanu collects sticks from the jungle.
He sells them in the market.



He uses 10 sticks to make 1 bundle.

3 bundles have _____ sticks.

✤ Now, how many sticks in all are these?

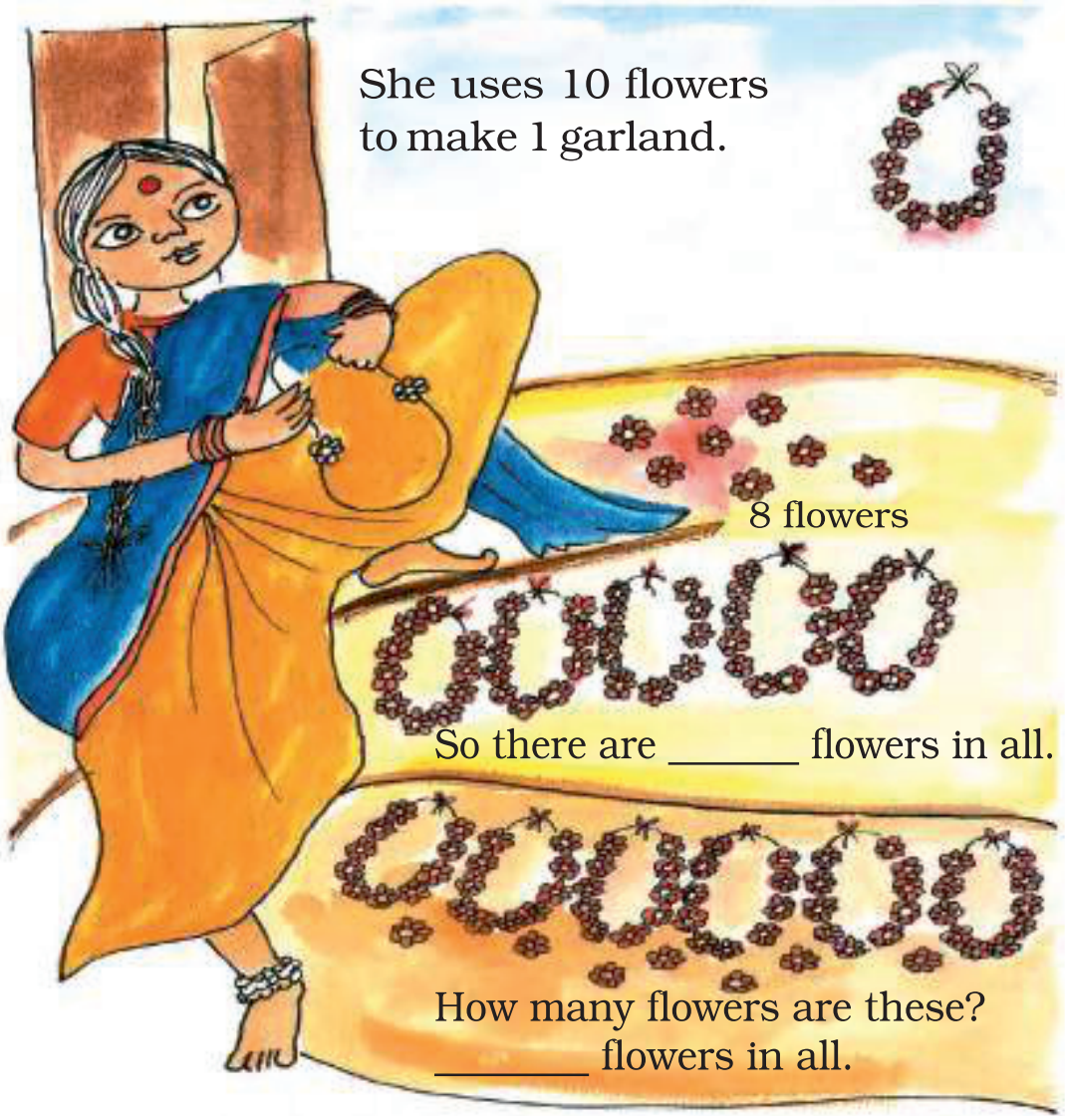
_____ sticks in all.

4 bundles would have _____ sticks.

Before doing these exercises, ask children to represent numbers by making bundles of 10 with the help of materials such as sticks or beads. Help them link these concrete objects to written symbols and oral names of the numbers.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

There is a wedding in Malti's house.
She is making flower garlands.



✤ How many garlands of 10 flowers each can you make using 21 flowers? Draw them in the space below.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

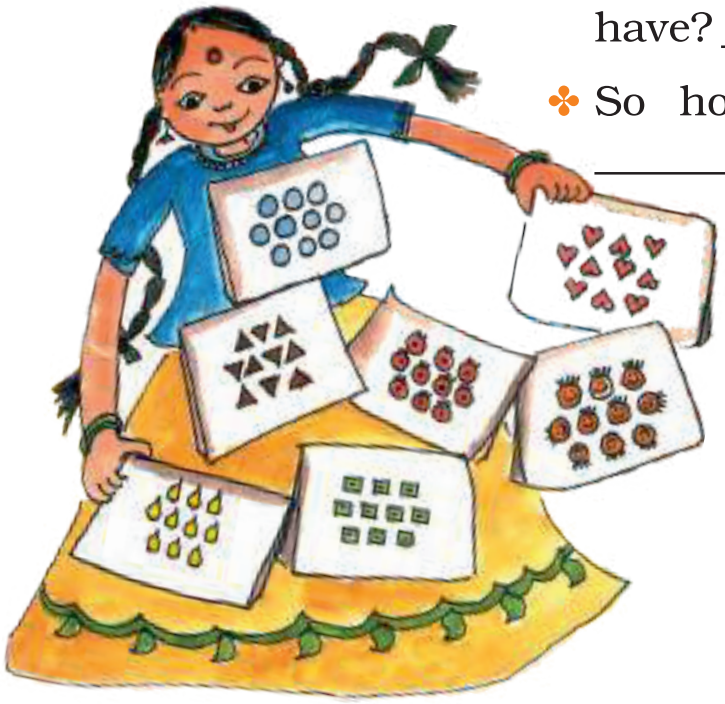


Let us help Leela.

- How many packets of 10 pencils are there ?
- How many pencils are outside the packets?---------
- So, altogether there are---------- pencils.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

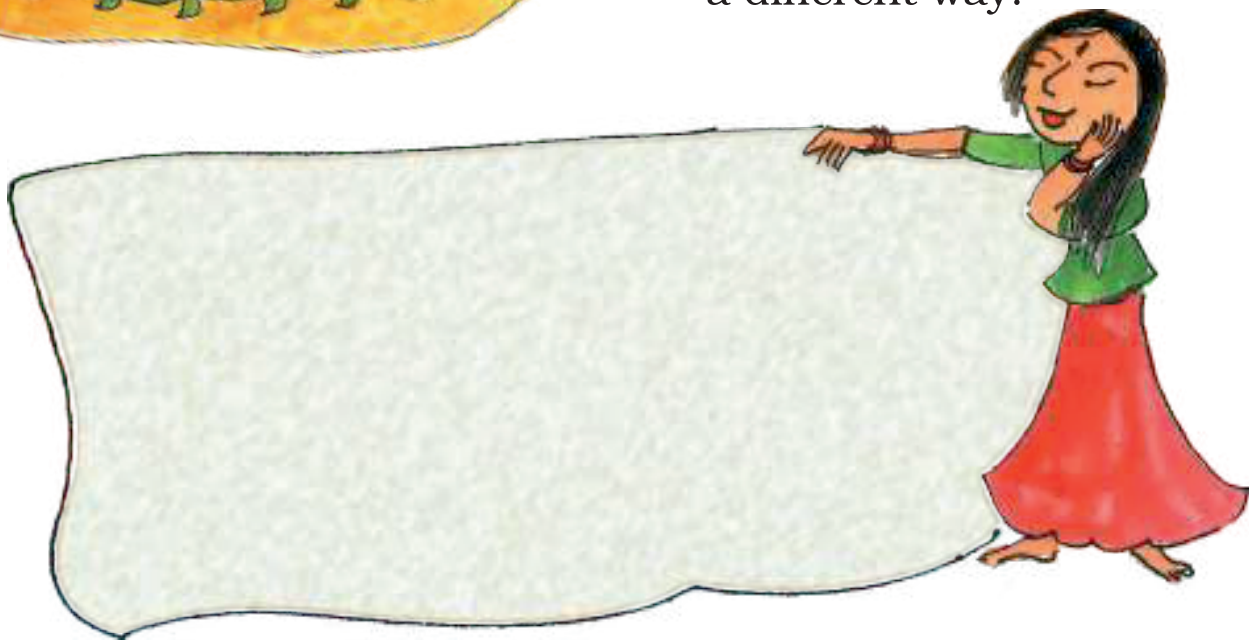
Kanak likes collecting different kinds of *bindis*.



- How many packets does she have? _____
- So how many *bindis* in all? _____

Each packet has
3 + 4 + 3 *bindis*.

Now you draw 10 *bindis* in a different way.

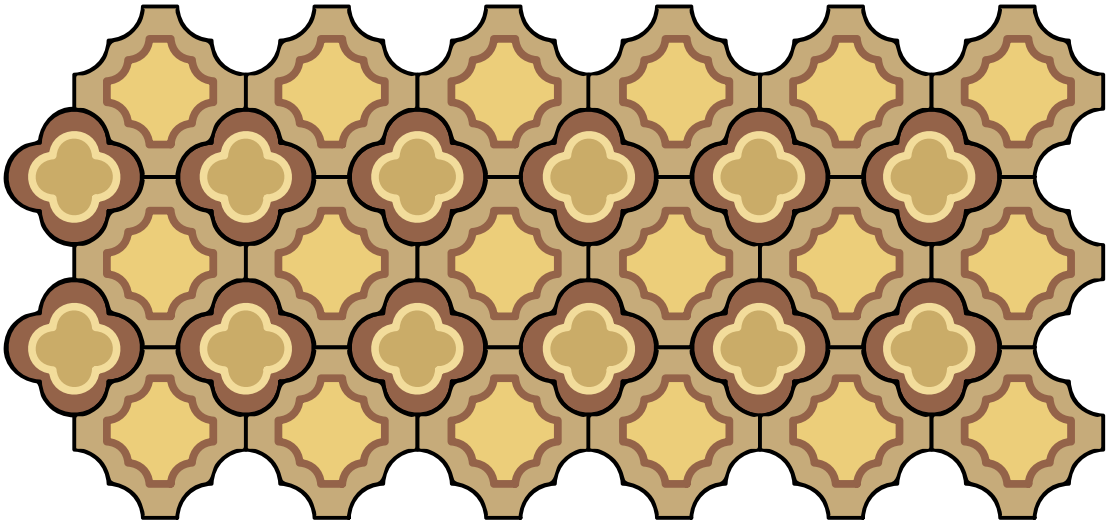


Discuss the strategy used by children for guessing. Encourage them to count in 10s. Also make children notice that 10 *bindis* can be arranged in different patterns. You may ask children to try different arrangements using 10 *bindis* which are visually easy to count.

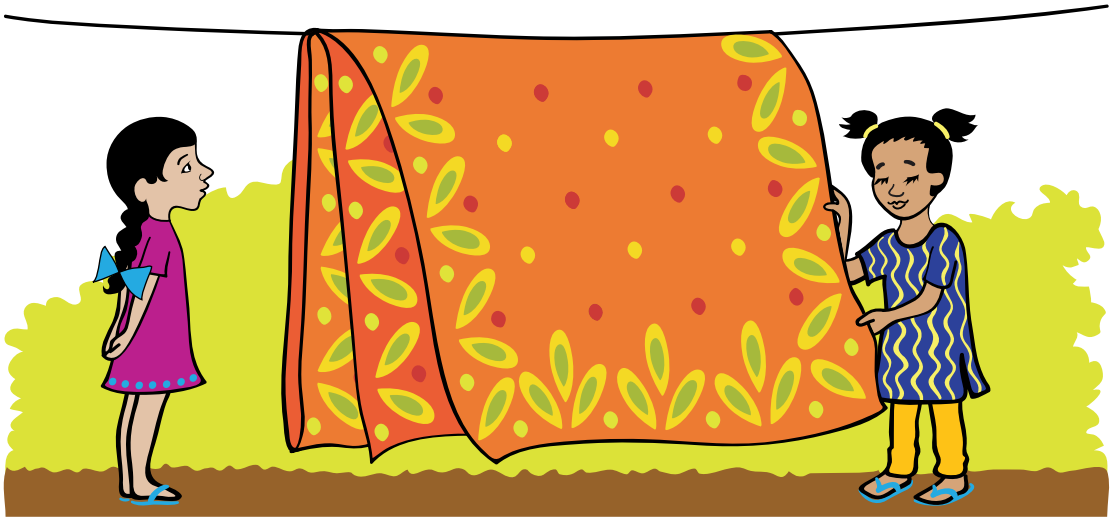
"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

5 Patterns

Binni and Ginni were going home. On the way, they saw some people making the pavement. The tiles used were of different colours and designs. This is what they saw.

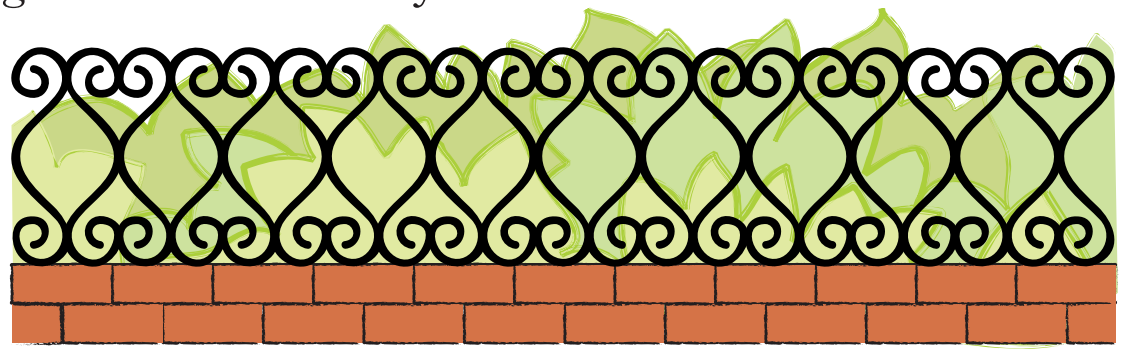


On reaching home they saw their mother's sari hanging on a rope. It also had a nice design with different colours.

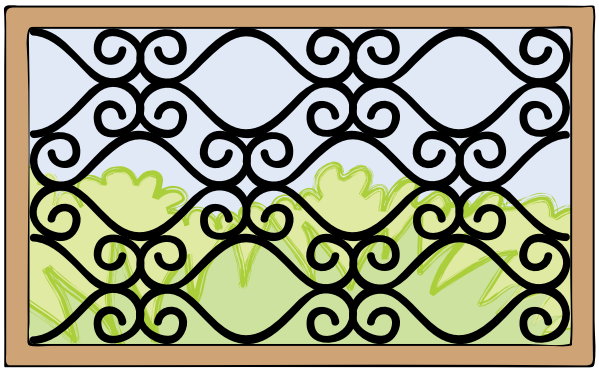


"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

In the evening, they were playing in a park. They saw iron grills on the boundary wall.



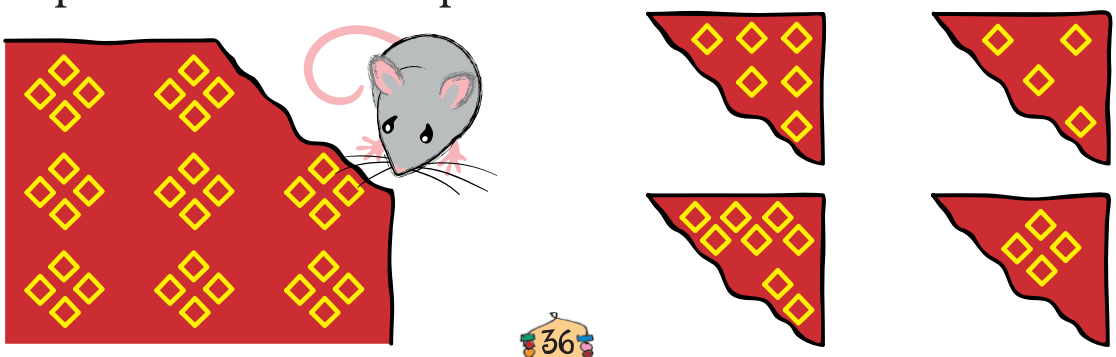
Looking at the grills, Binni said — these same grills make a different pattern in our windows at home.



We see many such patterns around us – on tiles, clothes, *durries*.

- Bholu has eaten a part of the shawl of Binni's mother.

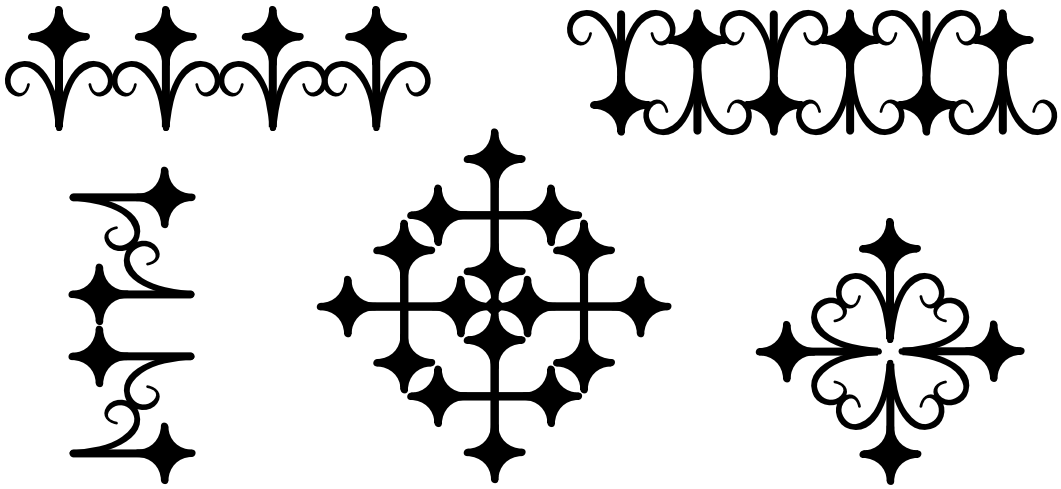
  Look at the picture and help Binni in matching which piece is of the same pattern.



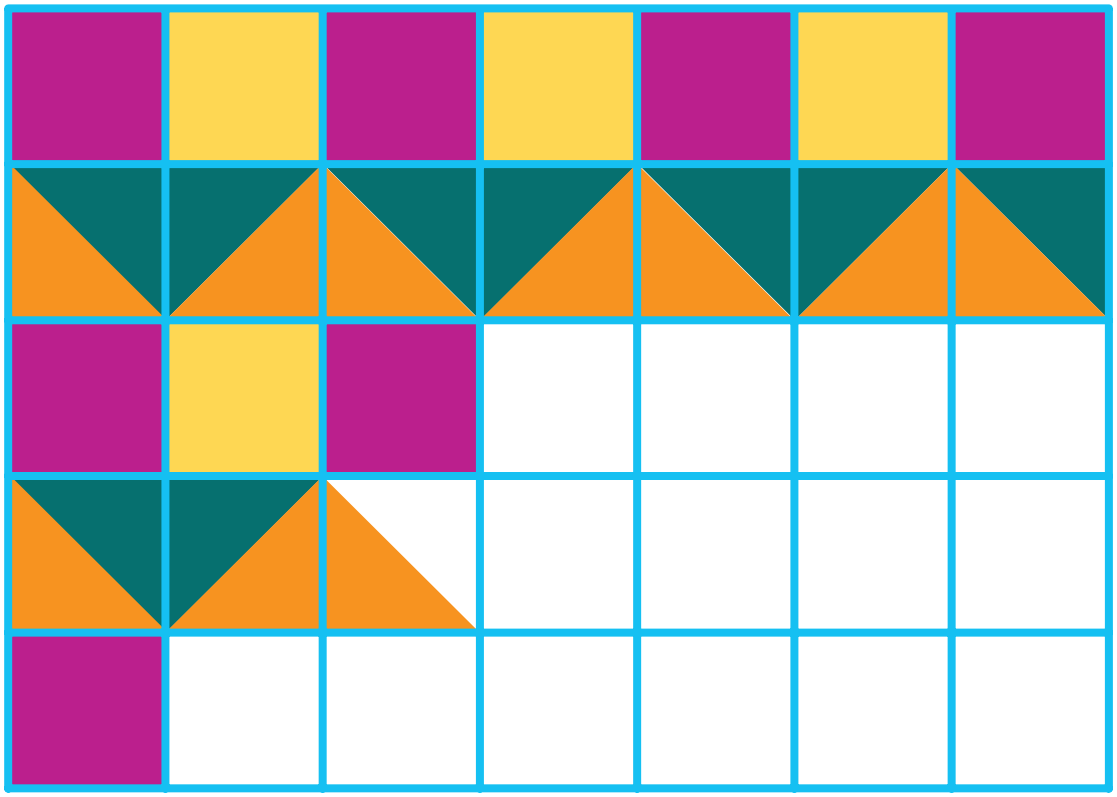
"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Madhav wants to make a pattern on a gate using 

Can you guess which of these cannot be formed with this?



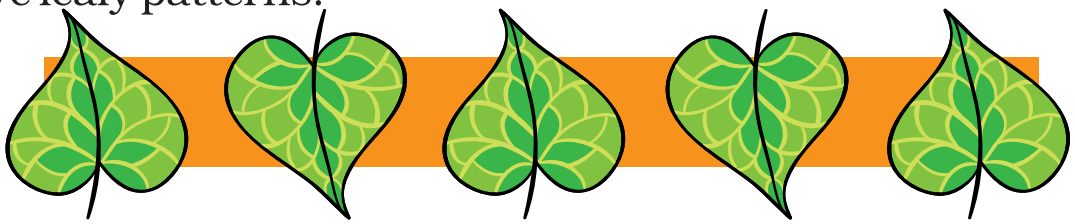
Fill up the blank boxes to complete the pattern.



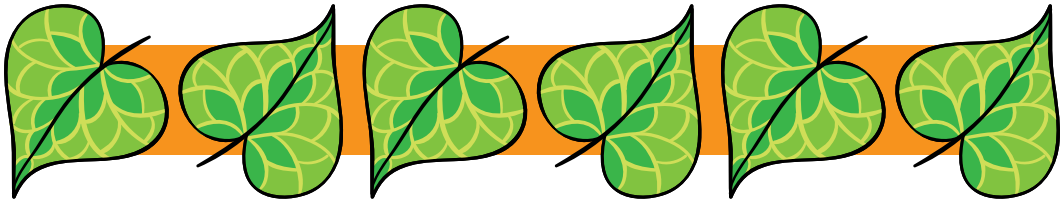
"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

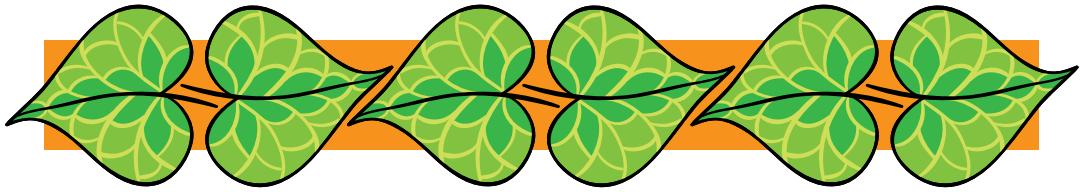
Leafy Patterns

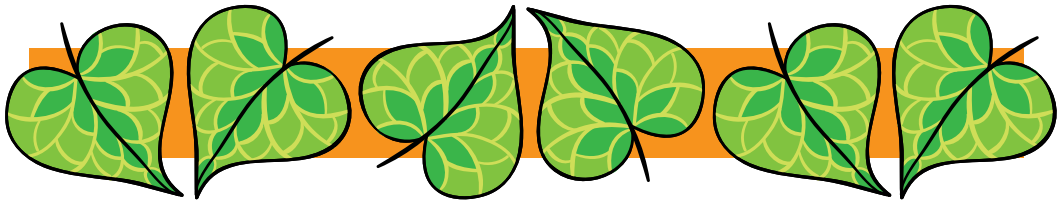
Using one leaf, we can make different patterns. See these five leafy patterns.

1. 

2. 

3. 

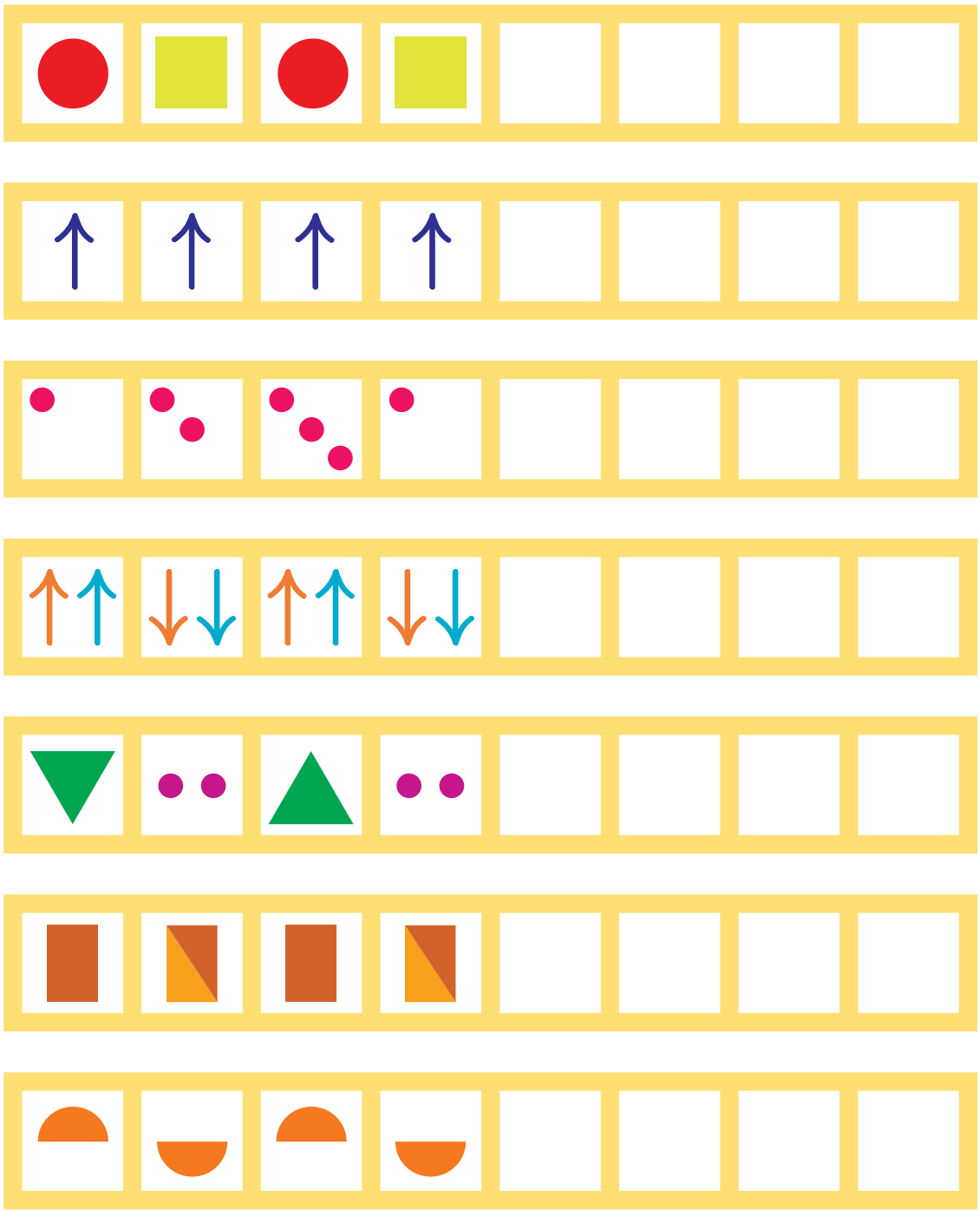
4. 

5. 

Now you also make some patterns with ↑ arrows in your notebook.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Look at the patterns and fill up the boxes.

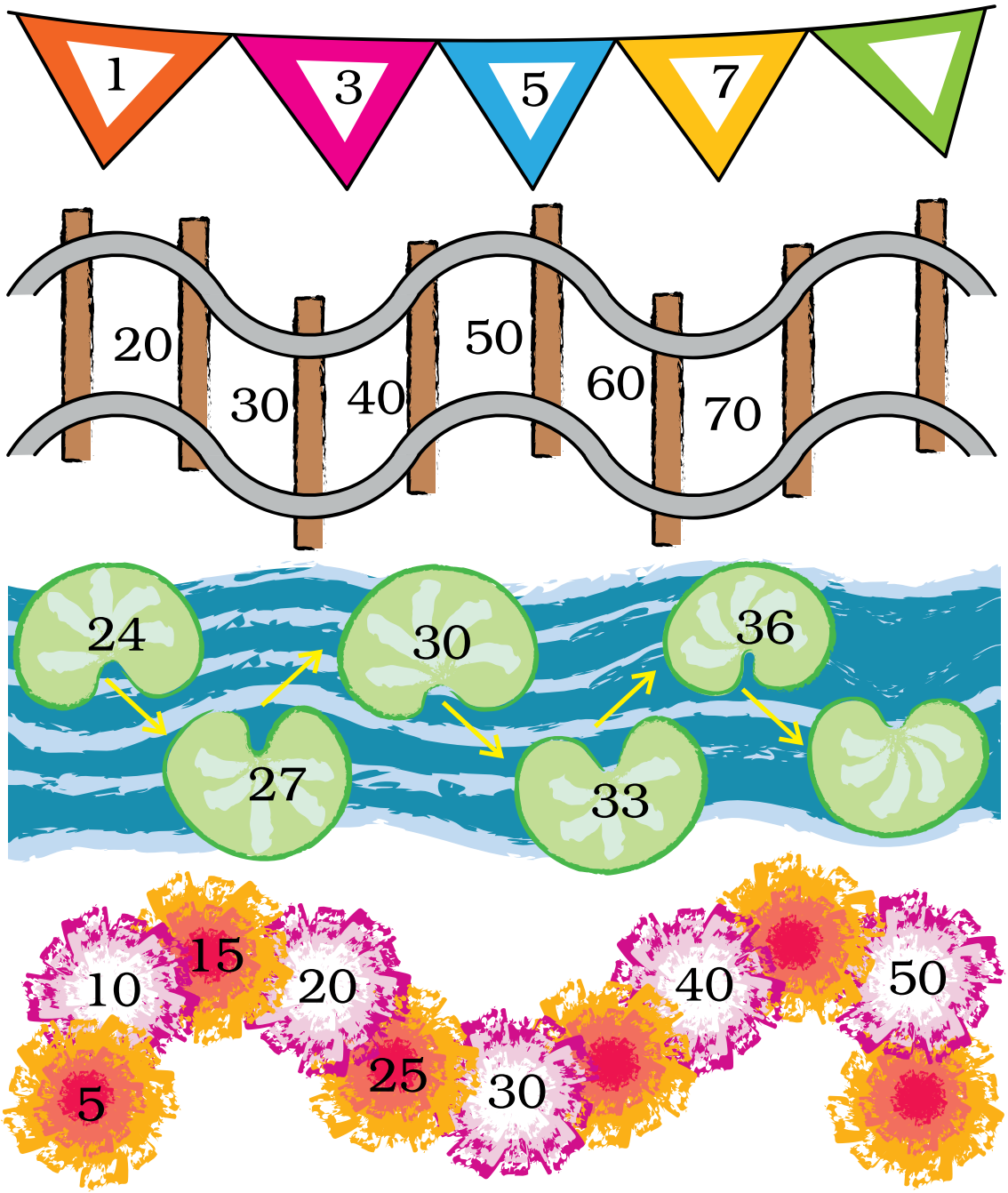


Now, you also make patterns using different shapes and show them to your friends.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Number Patterns

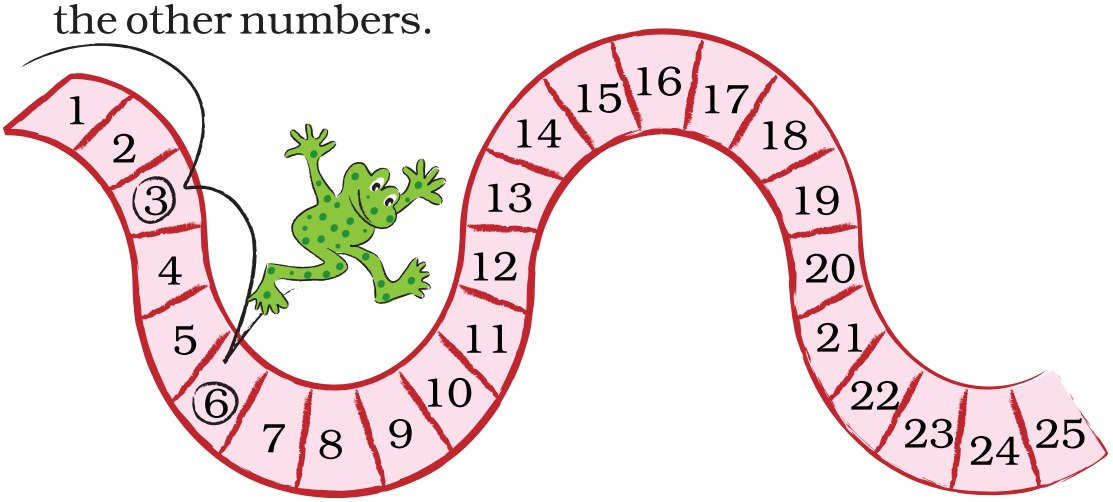
Let us look at some patterns with numbers. Fill the number in the blank space of each pattern.



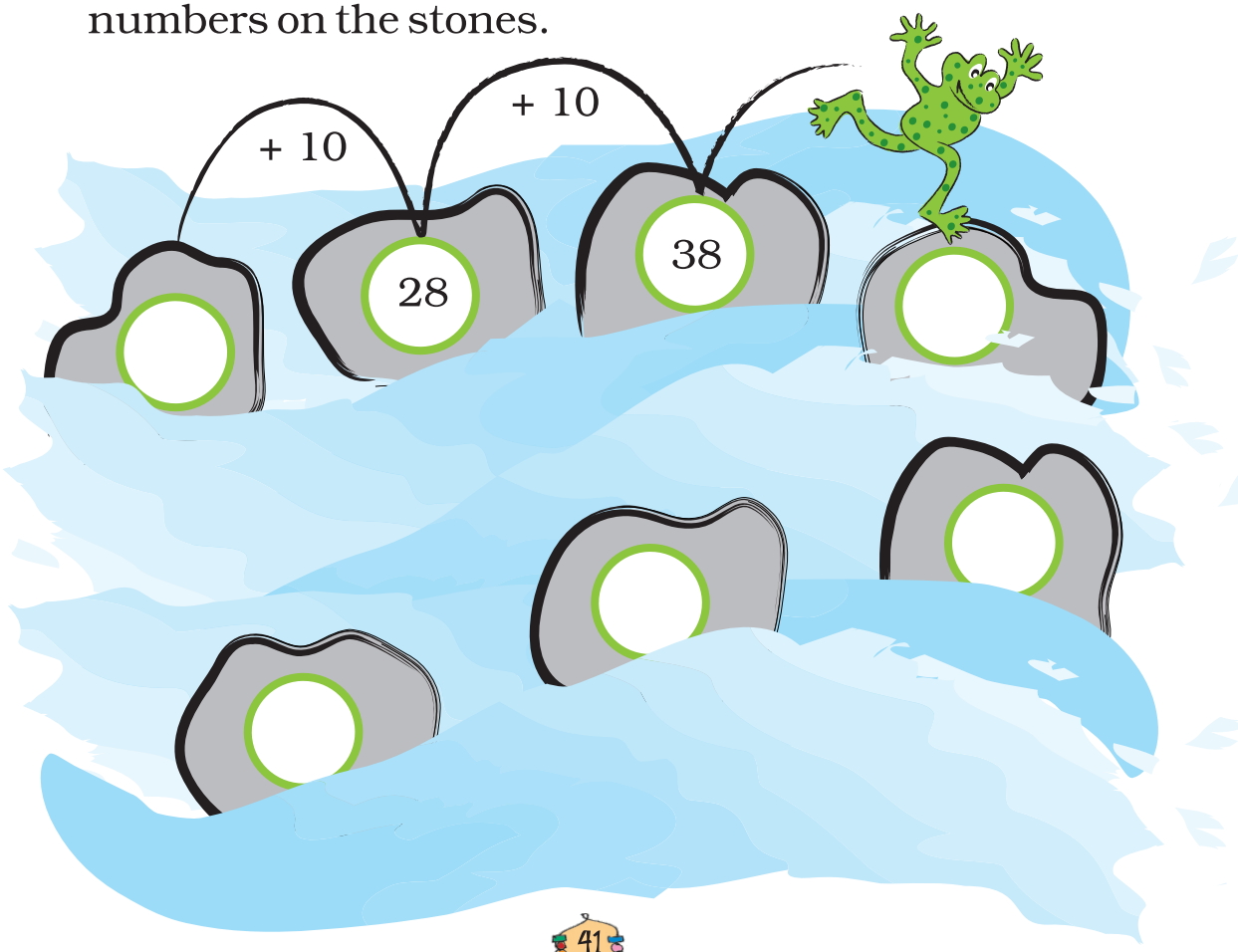
Encourage children to identify the patterns. Discuss with them various other possible number patterns.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Titu frog jumps over two numbers and reaches the third number. Where will Titu go next? Make a ring on the other numbers.



Titu jumps and gets on every 10th stone. Write the numbers on the stones.



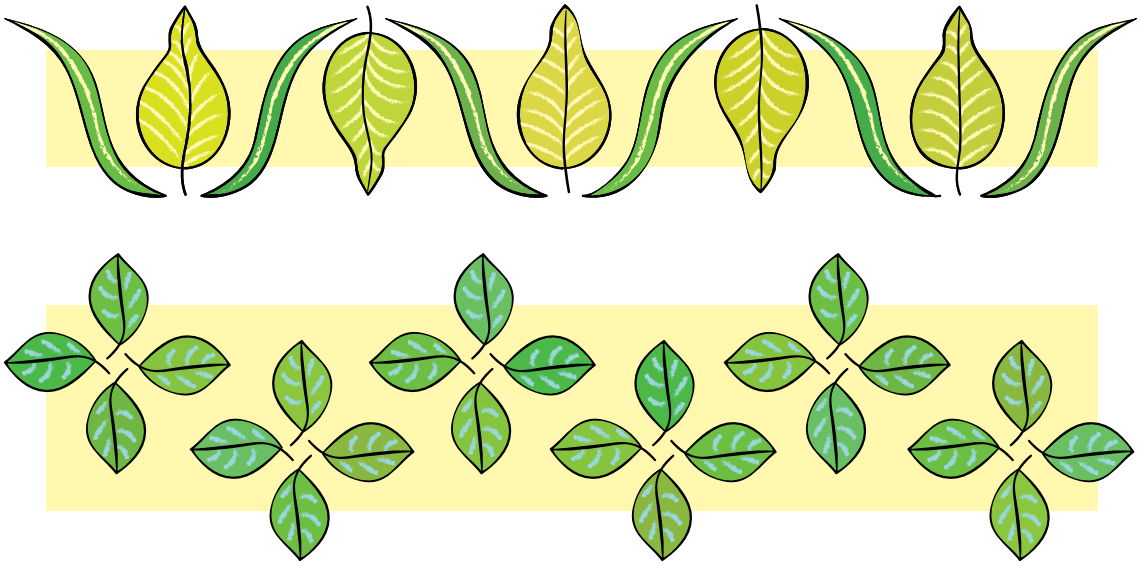
"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Read and write what comes next:

AA	BB	CC					
AB	CD	EF					
DAY	NIGHT	DAY					
1	2	1	2				
87	88	89					
20	30	40					
19	29	39					
2	5	8					
15	20	25					
18	21	24					
52	54	56					
5P	6Q	7R					
85	75	65					
55	50	45					
20	19	18					
40	38	36					

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"

Ketu has made some patterns by collecting leaves.



Now, you also collect some leaves and arrange them in different patterns. Also draw patterns using matchsticks.

Teachers should encourage the children to clean their classrooms after the activity.

"SAMAGRA SHIKSHA, MANIPUR" AND "NOT FOR SALE"