Textbook of Mathematics for Class 3

0333

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NCERT

राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
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Textbook of Mathematics for Class 3

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Foreword

The Foundational Stage in school education, as envisaged by the National Education Policy 2020, serves as the cornerstone for the holistic development of children. It enables them not only to imbibe the invaluable *samskaras* rooted in our country's ethos and constitutional framework, but also to acquire basic literacy and numeracy. This foundation equips them to transition seamlessly into the more challenging Preparatory Stage.

The Preparatory Stage acts as a bridge between the Foundational and the Middle Stages, spanning three years from Grade 3 to Grade 5. The education provided during this stage builds upon the pedagogical approaches of the Foundational Stage. While the play-way, discovery, and activity-based learning methods continue, children are also introduced to textbooks and more formal classroom settings. This introduction aims not to overwhelm but to establish a foundation across curricular areas, promoting holistic learning and self-exploration through reading, writing, speaking, drawing, singing, and playing. This comprehensive approach encompasses physical education, art education, environmental education, languages, mathematics, basic science, and social science. This comprehensive approach ensures children are well-prepared both at the cognitive-sensitive and physical-*pranic* (emotional) levels to effortlessly transition to the Middle Stage.

The textbook, *Maths Mela* for Grade 3 Mathematics is meticulously designed to align with these objectives. It adheres to the recommendations of the National Education Policy 2020 and the National Curriculum Framework for School Education 2023. The textbook emphasises conceptual understanding, critical thinking, creativity, values and dispositions essential for this developmental stage. It incorporates cross-cutting themes such as inclusion, multilingualism, gender equality, and cultural rootedness integrating appropriate ICT and school-based assessments. The engaging content and activities are designed to captivate students and encourage peer group learning, thus enriching the educational experience for students as well as teachers.

It is crucial to remember the pedagogical focus of the textbook emphasising understanding, critical thinking, reasoning, and decision making. Children's innate curiosity at this stage should be nurtured by addressing their questions and designing activities based on core learning principles. While the play-way method continues, the nature of toys and games used for teaching evolves to enhance engagement rather than mere attraction.

While this textbook is valuable, children should also explore additional resources on the subject. School libraries should facilitate this extended learning, and parents and teachers should support their endeavours.

An effective learning environment motivates students, keeping them engaged and fostering curiosity and wonder vital for learning.

With confidence, I recommend this textbook to all students and teachers at the Preparatory Stage. I extend my gratitude to everyone involved in its development, hopeful that it will meet expectations. As NCERT remains committed to systemic reforms and improving publication quality, we welcome feedback to refine the textbook content.

DINESH PRASAD SAKLANI
Director
National Council of Educational
Research and Training

New Delhi
31 March 2024

About the Book

The book *Maths Mela* for Class 3 has been developed based on the recent documents National Education Policy (NEP) 2020 and National Curriculum Framework for School Education (NCFSE) 2023. They aim to ensure that all children achieve basic numerical skills and abilities to think mathematically and logically, solve problems, develop intuitions regarding quantities and reasons, and feel a sense of joy, wonder, and curiosity. The Preparatory Stage specifically focuses on the development of conceptual ideas about numbers, shapes, and spatial relationships, measurement and data handling, procedural skills and fluency and computational thinking.

In light of this, the book for Class 3 is designed to support learners consolidate their learnings in the Foundational Stage and make progress towards dealing with more abstract ideas. The chapters of the book cover the foundational ideas of Mathematics: whole numbers and operations, introduction to fractions, shapes and spatial relationships, measurement (length, weight, capacity, time), and introduction to data handling. While each chapter has a particular theme (building on earlier ideas and making connections to other ideas), the ideas will recur throughout the book.

We firmly believe that young learners are capable of reasoning, thinking and problem solving in different ways. Therefore, the book provides several occasions for identifying and noticing ideas and relationships across ideas, giving examples and counter-examples to statements, creating objects using mathematical ideas, measuring and quantifying, estimating and solving problems. There are also opportunities to hone one's arithmetic skills through bare exercises, games, and puzzles. At some places in the chapter, such opportunities have been provided under the section 'Let us Play'. Another important purpose behind games and puzzles is to provide learners a stress-free and joyful learning. Most of these need not be assessed. Some tasks are aimed towards 'computational thinking' where learners are expected to observe and articulate

patterns and find exhaustive solutions and solutions under different constraints.

We also believe that learners should develop a liking for Mathematics. The chapters of this textbook provide several enjoyable activities, tasks, games, and puzzles that build on children's intuitions and tap on to their experiences in the world around them. These have been given under the section 'Let us Do' at many places in the chapters. These are sometimes used for making an entry to the concept and at other times provide opportunities to consolidate the ideas. The narrative in the chapters is supported through vivid illustrations, which are also integral to the tasks. We hope that this will allow learners to read pictures and use them for developing important mathematical ideas. While the use of appropriate mathematical vocabulary and ways of communicating thoughts is exemplified in the chapters, linguistic instructions and explanations are kept to the minimum, so that learners can also read and make sense of the book.

Mathematics is an integrated body of knowledge, with a connected and coherent set of ideas. It can be built logically on commonly shared assumptions. Mathematical thinking and reasoning are an important part of learning mathematics. The book attempts to move away from rote memorization of rules and procedures which kill learners' curiosity and burdens them. It rather pushes learners to explore and discover important mathematical ideas. The sections named 'Let us Think', 'Let us Explore', and 'Let us Discuss', included at various places, aim at keeping learners curious to reason out their thinking. These will give them reasons and insights that can be used to remember ideas and apply ideas flexibly and creatively, making further learning easier. It is important to engage with these processes of Mathematics so that learners can go beyond routine mathematical problems confidently and without fear and anxiety. We hope that the carefully chosen learning activities will help them make sense of the ideas, develop capacities to solve problems, experience wonder and joy in the process, and be curious about the world of mathematics.

We believe that the time available for children to work on problems and share their solutions and ideas will be crucial to achieve the objectives of NEP 2020 and NCFSE 2023. The book carries several suggestions for appropriate activities and

experiences (in class and in and around the home) to develop mathematical ideas. Teachers' and parents' support in changing conditions of learning for our children will be very important to achieve the dreams of a better and more confident nation.

The book also advises on the making of simple inexpensive concrete materials for learners to work with, and develop and communicate their thinking. A few perforated sheets for some of the tasks in the chapters are provided at the end of the book. There are some more ideas in the Teacher's Notes for activities and materials. The chapters also show a gradual movement from the use of materials to the use of pictures and making schematic diagrams to make sense of the situation and strategise ways forward. The book tries to build models for the ideas using materials and pictures so that learners can use them for their thinking independently. We would sincerely urge teachers and parents to use the sequence of ideas suggested in the book for teaching and not to rush to rules and procedures. When children develop a better understanding, they will be in a better position to appreciate the rules and procedures. Similar care is also to be taken up by parents and elder siblings who may help their wards in learning through this book. 'Teacher's Note' may help teachers and parents in appropriately enhancing the child's learning.

Several activities and tasks in the book also require that children talk and discuss their ideas. Learning will significantly improve in a classroom that welcomes and respects learners' ideas. They will see different ways of thinking and use ideas, and alternative solutions leading to better and independent solutions over a period of time. They will get opportunities to scrutinise each other's solutions and develop fluency with mathematical language, symbols, and procedures. These will also serve as good assessments of learning for the teacher and also provide feedback to them. The exercises given in the book are also examples of how learners can be assessed. Assessment should be done in multiple forms— using materials and pictures, problem situations and bare problems, activities, creating objects, and sharing and explaining solutions. The book provides enough opportunities for adaptive assessment, assessment for learning, and assessment as learning while the child is learning and is engaged in different activities. Teachers can note down their observations while the learners discuss their ideas, replying to the questions asked, and explaining the

reasoning for the answer. Such records can be included in the learner's portfolio. All ideas in the book have been concluded with some paper pen tasks (questions, word problems, and projects) that a child can complete in the classroom or at home. Such tasks provide opportunities to practice writing and present their thinking on a paper.

In the times to come, we will provide more resources to the teachers and learners in the form of videos, worksheets for practice, and links to online resources.

We hope that the book will be enjoyable to all and will lead to better teaching-learning conditions.

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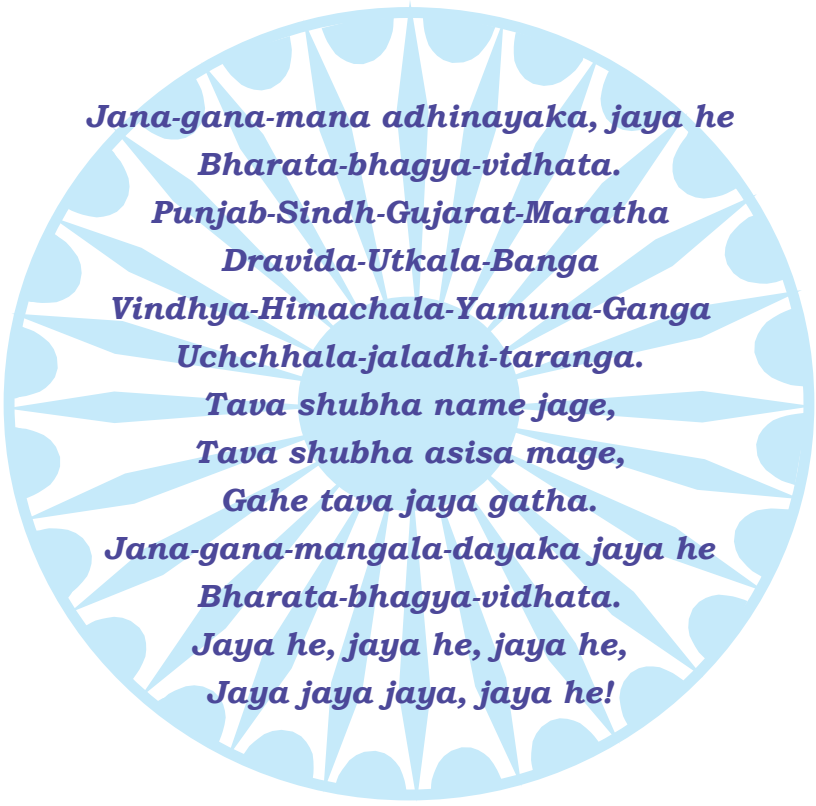
Our National Anthem



Jana-gana-mana adhinayaka, jaya he
Bharata-bhagya-vidhata.
Punjab-Sindh-Gujarat-Maratha
Dravida-Utkala-Banga
Vindhya-Himachala-Yamuna-Ganga
Uchchhala-jaladhi-taranga.
Tava shubha name jage,
Tava shubha asisa mage,
Gahe tava jaya gatha.
Jana-gana-mangala-dayaka jaya he
Bharata-bhagya-vidhata.
Jaya he, jaya he, jaya he,
Jaya jaya jaya, jaya he!

Our National Anthem, composed originally in Bangla by Rabindranath Tagore, was adopted in its Hindi version by the Constituent Assembly as the national anthem of India on 24 January 1950.

Contents

1 What's in a Name?

0333CH01

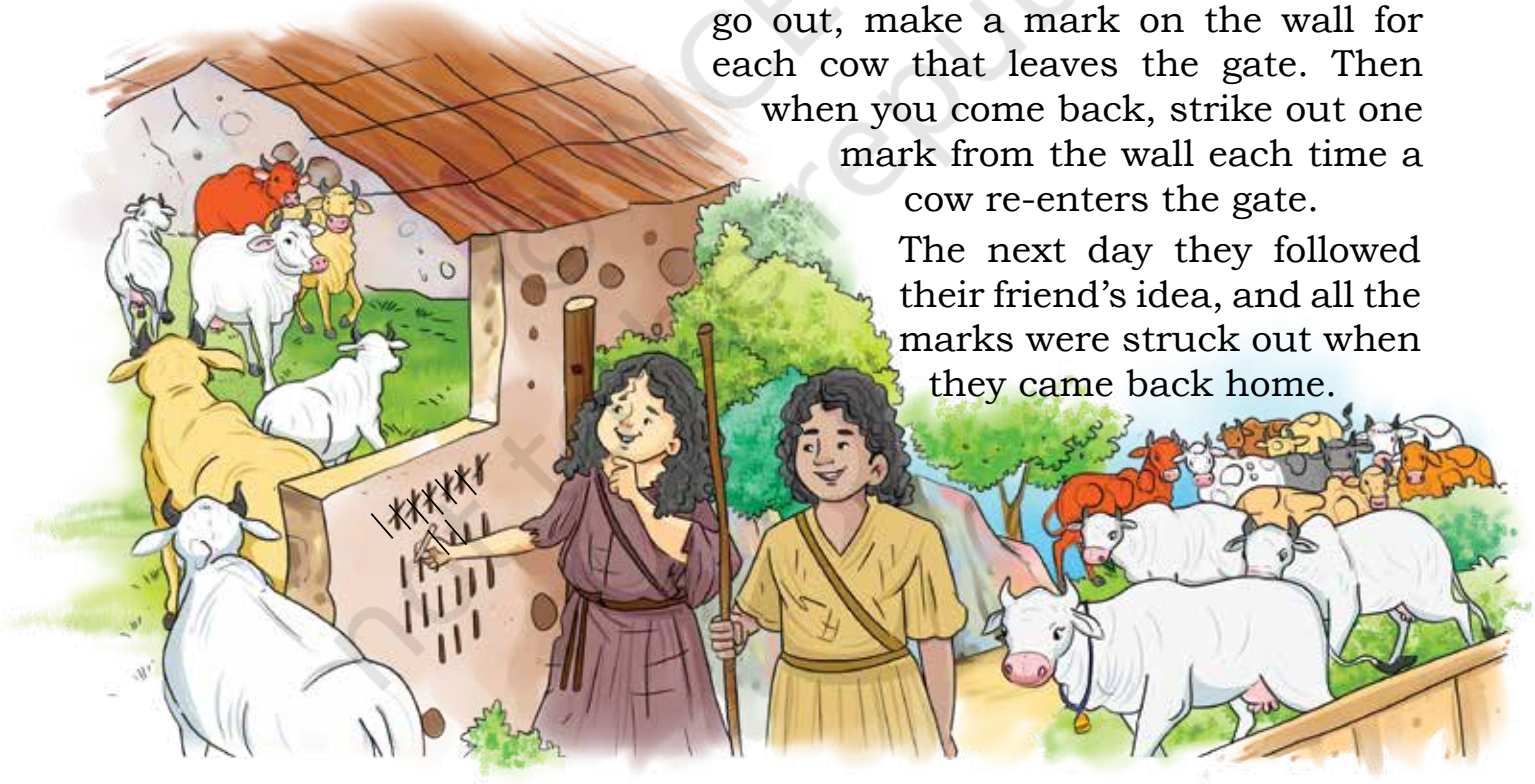
A long long time ago, there was a cowherd family in Tarakeshwar. Every day Deba and Deep took the cows out for grazing. They used to return in the late evening together with all the cows.

One day, Deba asked: How do we know that we have not lost any cows? They did not know how to count.

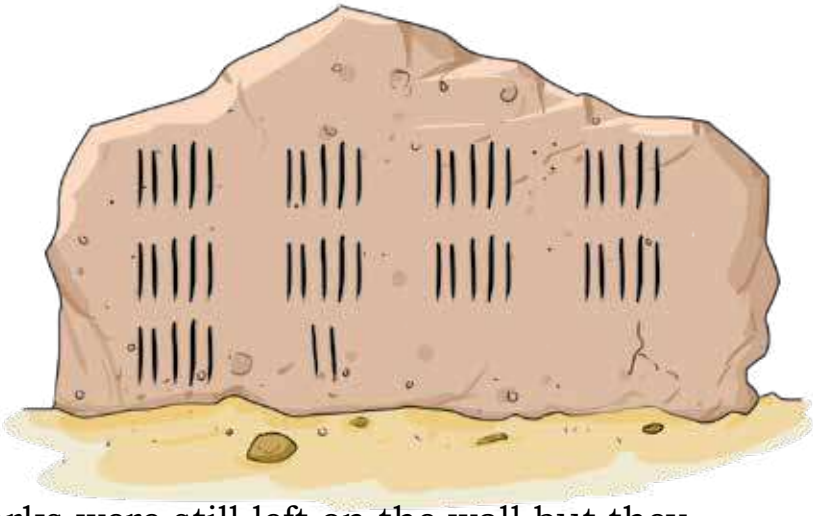
What could Deba and Deep do?

Their friend gave them an idea: When you go out, make a mark on the wall for each cow that leaves the gate. Then when you come back, strike out one mark from the wall each time a cow re-enters the gate.

The next day they followed their friend's idea, and all the marks were struck out when they came back home.



Did all the cows come back home?



After a few years, they had many more cows. One day, their wall had this many marks when they left home.

So, they had ..... cows.

The next day they returned with the cows. They struck out one mark as each cow re-entered the gate. Two marks were still left on the wall but they didn't see any cows outside. They were worried.

Why were Deba and Deep worried?

How many cows had reached home? .....

Deba and Deep quickly went to search for the missing cows and found them in a nearby field. They all happily returned home together!

Their friend Hemant had 36 cows and 23 sheep.

Help Hemant keep track of his cows and sheep by making marks like Deba and Deep.

Teacher's Note: Encourage children to think of different strategies to count large groups of objects without using numbers. They can also use the above story as an activity where they can keep track of all children entering and leaving the classroom.

Let us Do

1. Some animals and birds got together to play a game. They wanted to make 2 teams. They decided that the captain of the first team will be the one with the longest name, i.e., the one with the most letters. The captain of the second team will be the one with the shortest name, i.e., the one with the fewest letters.

Find out the captains of the 2 teams.

First team :

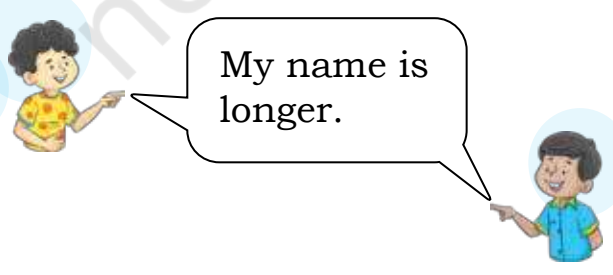
Letter count :

Second team :

Letter count :

Do you know any animal having a longer name than the first team's captain?

2. Who has a longer name? Discuss.



Mahesh

Kartik

3. Write down the names of some of your friends in the spaces given below and then answer the questions from a to f.

..... ○

..... ○ ..... ○

..... ○ ..... ○

..... ○ ..... ○

..... ○

a. Tick ✓ the longest name(s) and cross ✗ the shortest name(s).

b. Write the starting letter of your name. .....

c. Count all the name(s) that have the same starting letter as yours. ☐

d. Which starting letter is the most used? Count the names that begin with it. ☐

e. Count the names with the same ending letter. ☐

.....

f. Write the letters that are not the starting letter of any name.

.....

Teacher's Note: Teacher can ask children to mark the shortest and longest names among boys and girls and in the overall class. Help them share their strategy through discussion in the classroom.

4. Teji and Jojo are making numbers using these cards.

One	Two	Three	Ten	Eleven	Twelve	Thirteen			
Four	Five	Six	Fourteen	Fifteen	Sixteen				
Seven	Eight	Nine	Seventeen	Eighteen	Nineteen				
Twenty	Thirty	Forty	Fifty	Sixty	Seventy	Eighty	Ninety		

Teji makes her roll number 43 like this. Its number name has 10 letters.

Forty Three

Jojo makes his roll number 17 like this. Its number name has ..... letters.

Seventeen

a. Write your roll number using number cards as shown above. Number cards are given at the end of the book.

- My roll number is .....
- Its number name has ..... letters.

b. Write some numbers and their number names in your notebook. How many letters does each have?

Let us Think

Teji and Jojo made the number 56 (Fifty-six). It has 8 letters. Write other numbers between 1 and 99 that have 8 letters.

Fifty Six

forty-two	42		

Teacher's Note: Let the children observe what is common in the numbers that have the same number of letters in their number names.

Let us Do

1. Write the number(s) between 1 and 99 that have the longest name.

....

Find out.

My number name has two words.
The first word has 6 letters
The second word has 5 letters
I am very near to 100. Who am I?

.....

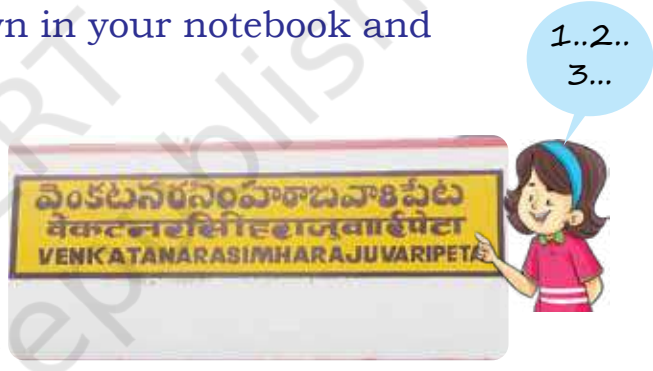
Find out.

My friends and I are the numbers from 63 to 78.
My number name is the smallest among all my friends. Who am I?

.....

2. Make similar puzzles of your own in your notebook and ask your classmates.

Venkatanarasimharajuvaripeta is the place in India with the longest name. It is located in Andhra Pradesh, close to the border of Tamil Nadu.



Ib in Odisha and *Od* in Gujarat are the places in India with the shortest names.

Teji and Jojo have some picture cards. Teji has put these into two groups like this:

She has grouped the cards into "*those that eat food*" and "*those that don't eat food*". Jojo has arranged the same cards differently.

What is common in each of the groups Jojo has made?

.....

Given below are pictures of some household objects.

Write the names of the above objects in the two groups given below.

Things that need electricity	Things that don't need electricity

Group the objects given above differently. Write them down in the space below.

Let us Do

Hair Styles

Mala is going to school.  Her mother has combed her hair. 

Mala has two ponytails. 

Look at the children in your class.

All children comb their hair in different ways.

Look and write down.

Hair Style						
Number of children						

Teacher's Note: Ask children to suggest more things and place them in groups. appropriately. Discuss whether there are other possible grouping methods. Encourage diverse ways of grouping in which every object must belong to one or the other group.

2 Toy Joy

0333CH02

Some children are making animal and bird faces on old boxes, cans and paper.

Let us Do

Use old boxes (cubes and cuboids) and bottles (cylinders) to do craft work. Draw faces on them.

What did you draw on their faces?

Jaya is building a rocket with her shapes.

What shapes has she used?

How many of each?

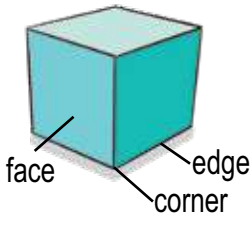
Cube: _____ Cuboid: _____

Cone: _____ Cylinder: _____

What shape is between the red cuboid and yellow cuboid?

What shape is on the top of the orange cylinder?

What shape is under the pink cone?



Collect objects to make a house. Name the shapes and talk about their faces and edges. Which are straight and which are curved? Also describe how the shapes have been arranged. What part of the shapes can you see from a distance?

Devika went to a shop and bought a toy engine.

Here is Devika's toy engine. It has many parts. Count and fill.

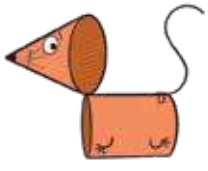
_____ red cylinder(s) _____ yellow cone(s)

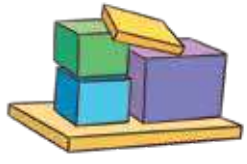
_____ grey cuboid(s) _____ blue cube(s)

Let us Discuss

Here are some more toys from the toy shop. They are made up of different shapes.

What shapes are used in these toys?



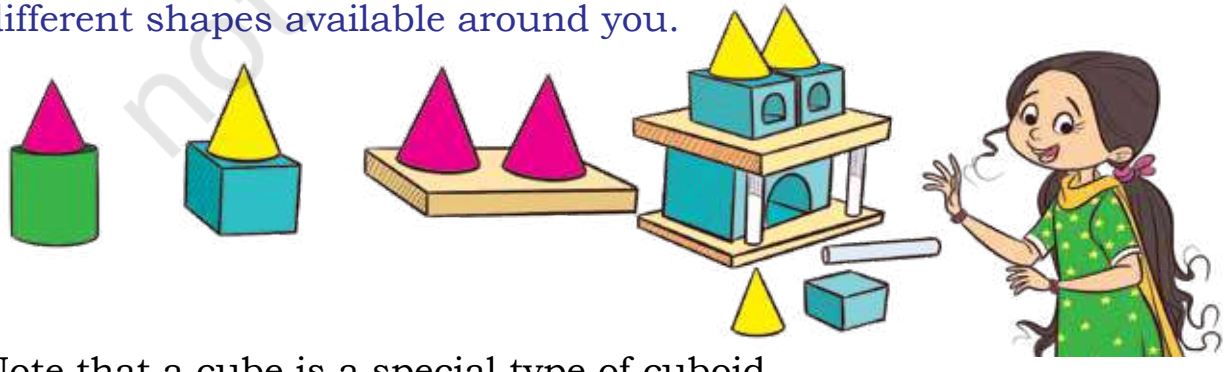


_____ _____ _____ _____

_____ _____ _____ _____

Jaya made some houses using different shapes.

Try to build such houses, towers, rockets, etc. using different shapes available around you.



Note that a cube is a special type of cuboid.

Let us Play

Construct and describe

Ask students to sit in groups of four or five. In each group one student selects any three shapes and puts them together. The student, then describes the sequence of construction and the other students have to build the same without seeing the original one. Let children take turns and play the game in the group.

Example

The cylinder is on top of the cuboid. The cone is on top of the cylinder.

Let us Do

1. Can you find these shapes in the classroom? Fill in the table with their names.

 Cylinder	 Sphere	 Cube	 Cuboid	 Cone

a. Name the shape that you find the most. _____

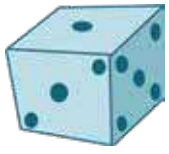
b. Name the shape that you find the least. _____

c. Name the objects that are made up of more than one shape. _____

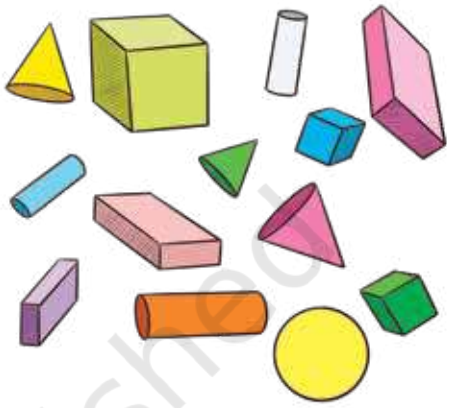






2. Look at these shapes and answer the following questions.



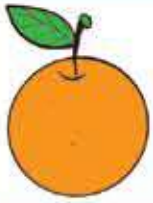
- Circle ◯ the cubes.
- Put a tick ✓ against the shapes that are cones.
- Put a cross ✗ against the shapes that are cylinders.
- Put a box ☐ around the cuboids.

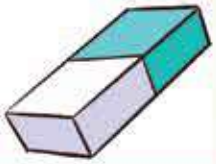
3. Name the shapes

- with no edges. _____
- with only flat faces. _____
- with only curved faces. _____
- with both straight and curved edges. _____
- with both flat and curved faces. _____

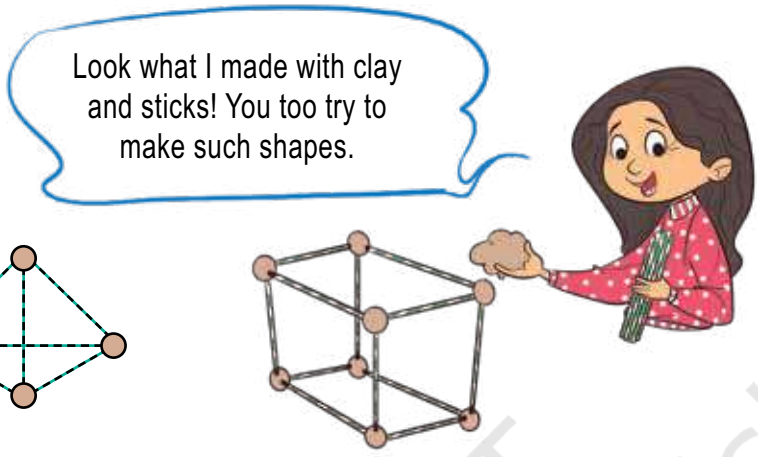
Teacher's Note: Let students look for different shapes in the classroom. Ask them to share more examples of each shape. Talk about opposite faces in cubes, cuboids and cylinders. They can turn the shapes and observe them in different orientations.



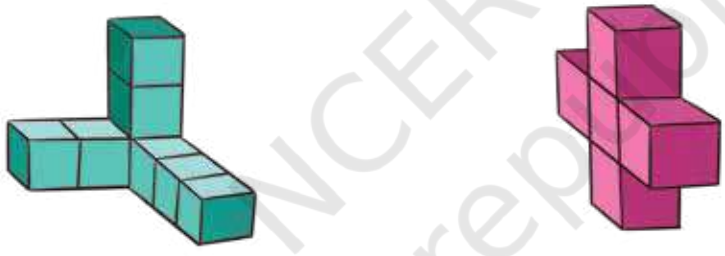





4. Which shapes can you build?



5. Try to make these shapes using cubes.



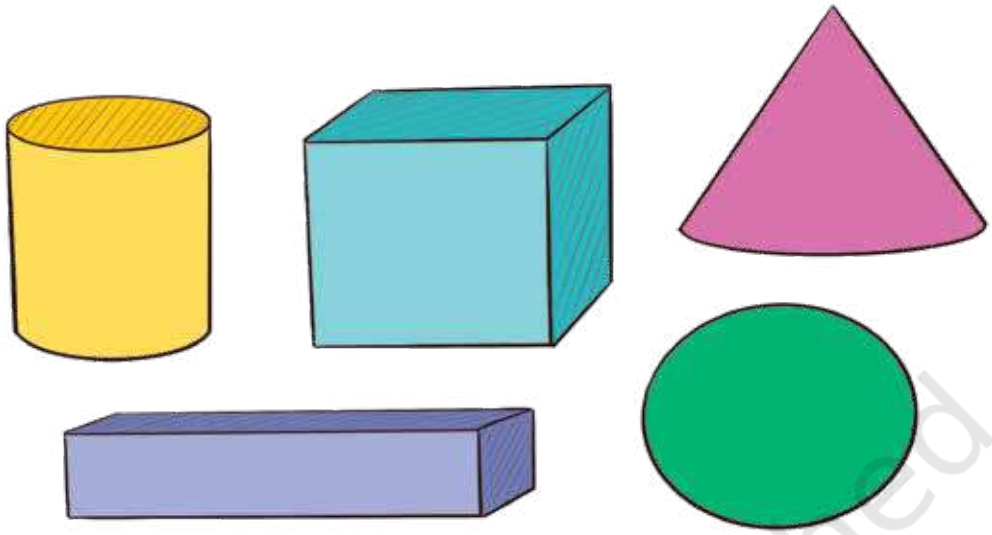
Let us Play

There is a game along the border of this page. Roll the die and move the counter to the next picture associated with the number on the die (if possible without crossing the "Finish" square) and play the game with your friends. The one who reaches the finish mark first wins the game.

– Cylinder – Sphere – Cone – Cube

– Cuboid – Move 2 steps forward if possible

6. In what ways are these shapes the same? In what ways are they different?

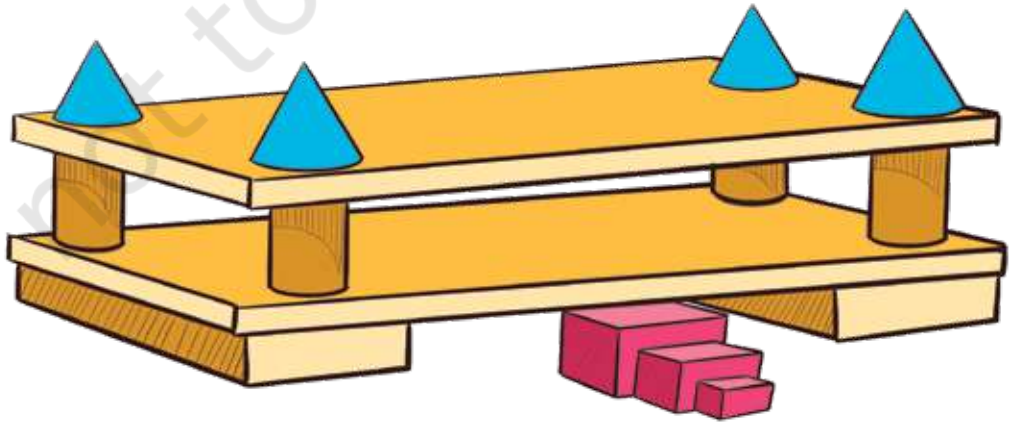


7. Look at a die. The faces have 1 to 6 dots.

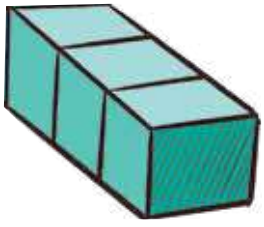
What number is on:

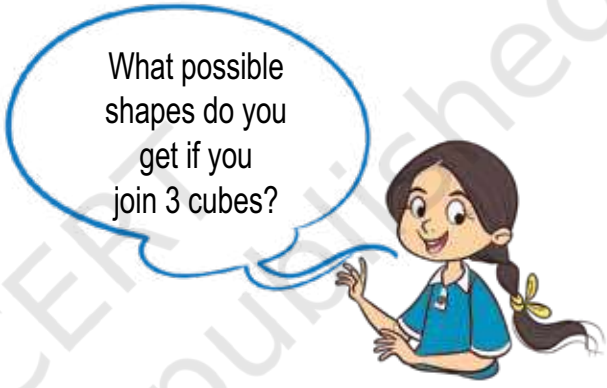
- the face opposite number 1? _____
- the face opposite number 2? _____
- the face opposite number 3? _____
- What pattern do you notice? _____

8. In what order is this model built?

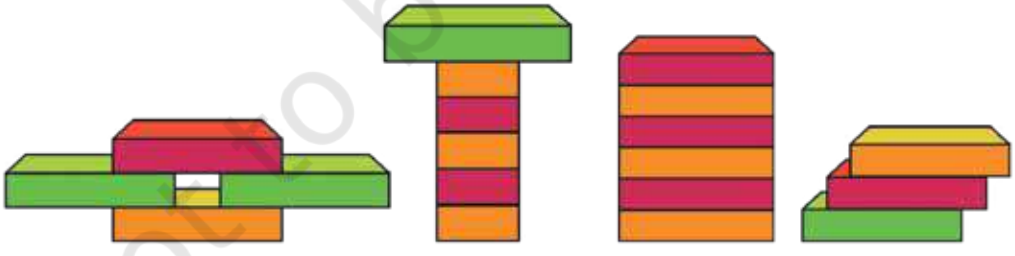


9. In how many different ways can you join 3 cubes? Try and see.





10. Name the shapes used in these models. Describe how the shapes are arranged to make them.



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

11. Use six dice to make the following shapes:

(a) A Cuboid (b) A tower (c) Any other shape of your choice

3 Double Century

0333CH03

The Story of our Numbers

Tens of thousands of years ago, people started counting. They wanted to keep records of their things. So they made marks on the walls of caves and on the barks of trees.

Over time, they kept records of their things by making groups of 5, 10, 20, and 60.

Thousands of years ago, the ancient Indians created a method for writing any number, however large, using only ten symbols: 0, 1, 2, 3, 4, 5, 6, 7, 8, 9. It was one of the most ingenious and creative inventions in human history. It made possible the invention of TVs, computers, mobile phones, and more. This method of writing numbers is now used everywhere in every country in the world.

A very important part of this invention was the introduction and use of the symbol "0" to mean "nothing". It is the number 0 that really made this system of writing numerals work!

Over the next few months, we will learn how to write all numbers, however large, using just these ten symbols.

Let us Do

1. Look at the picture. Estimate and write the number of each of the following objects.

   a. Oranges : .....

   b. Bangles : .....

   c. Laddoos : .....

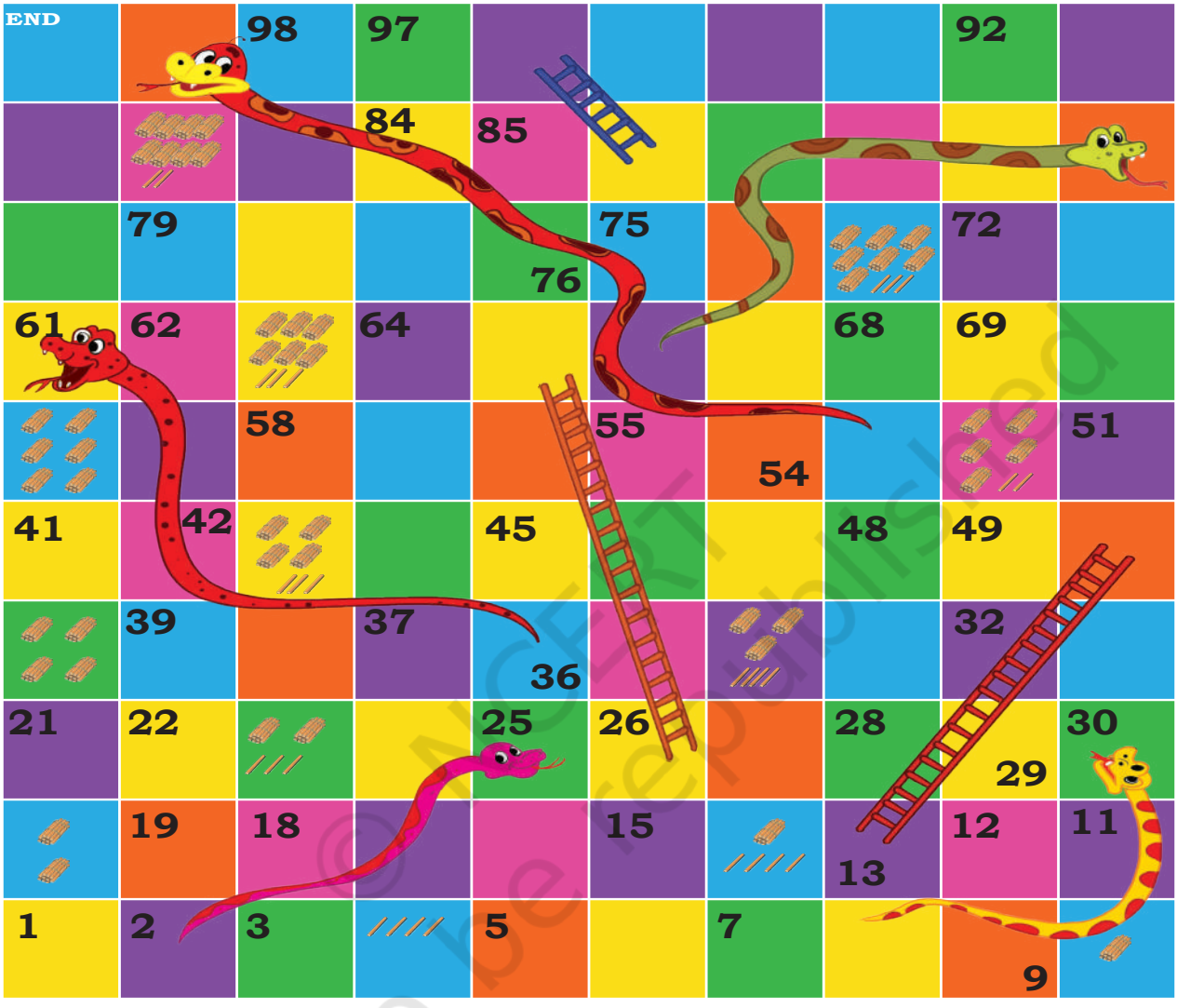
   d. *Barfi* : .....

   e. *Bindis* : .....

   f. Bananas : .....

Let us Play

Fill the missing numbers on the board.



Answer the following on the basis of the Snakes and Ladders board:

1. Which number will you reach if you take the ladder from 13? .....
2. If you are on the snake at number 25, which number will you reach? .....
3. You are standing on 96. Which number on the die will take you to the snake's mouth? .....
4. Show the number written on the tail of the longest snake using bundles and loose sticks. .....

Let us Think

I am a talking Pot.
Tell me any number, and
I will tell you the next.

I said 42, Pot said 43

I said 39, Pot said .....

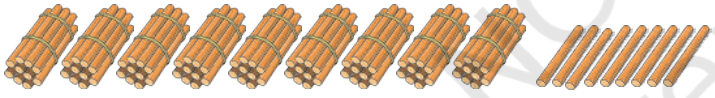
I said 63, Pot said .....

I said ....., Pot said 90

I said ....., Pot said.....

I said **99**, Pot said **100**

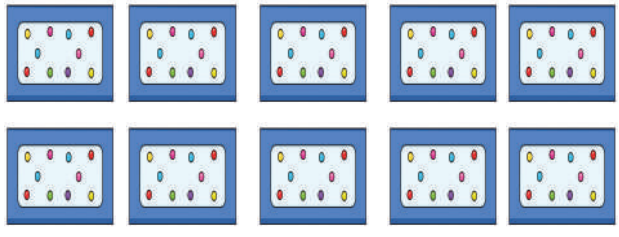
What is 100?



and one more makes 100.
One more than 99 is 100.

10 bundles of 10 sticks each is 100 sticks

Oh, he scored a century.
That is a 100 runs



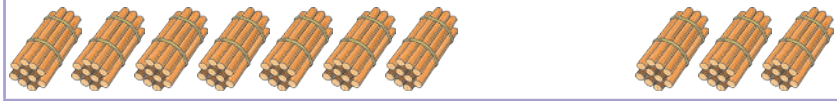
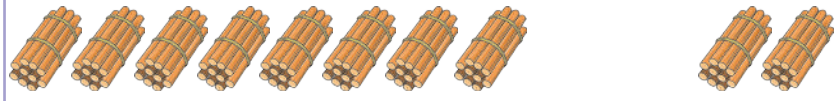
10 Packets of 10 bindis each makes 100.

Teacher's Note: Encourage children to represent numbers with matchsticks in the form of bundles and loose sticks.

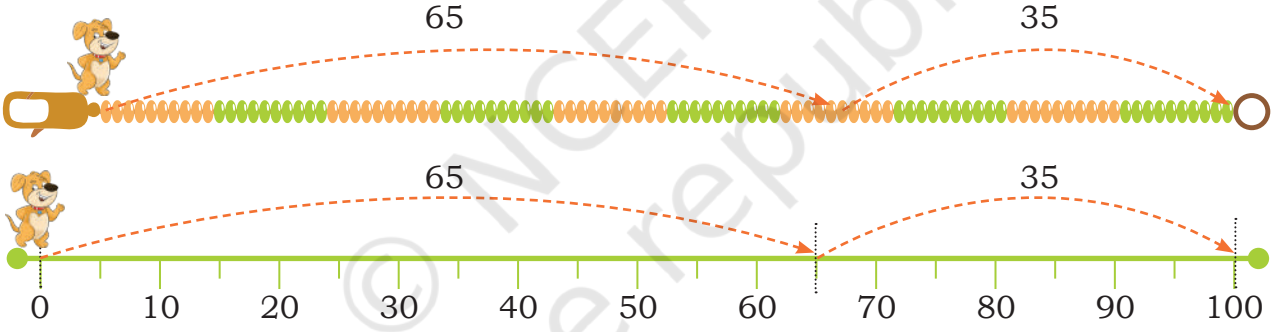
These beads are also 100 in number.

Let us Do

1. Fill in the blanks.

Making 100	Number sentence
	70 and 30 makes 100
	__ and __ makes 100
	__ and __ makes 100

Bholu made 100 by jumping on 65 and jumped 35 more.

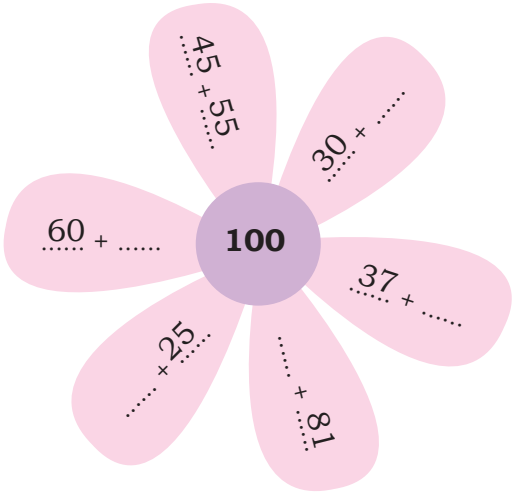


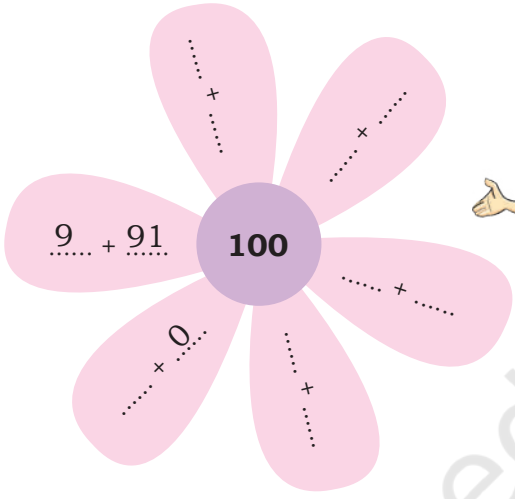
Make 100 by different jumps on this number line.

2. Use matchstick bundles and a *ginladi* to make 100 in different ways. Fill the table below.

60 and 40 makes	45 and ..... makes 100.
..... and 25 makes 100.	..... and 85 makes 100.
..... and ..... makes 100.	..... and ..... makes 100.

3. Write numbers in the blank spaces inside the flower petals so that the numbers in each petal add up to 100.





Let us Explore

How many are 100?

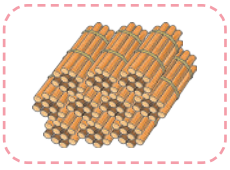
1. Open a full box of matchsticks.

- Estimate the number of matchsticks in the box: .....
- Count the number of matchsticks in the box: .....
- How close was your estimate?
- How many boxes of matchsticks will get the total close to 100 matchsticks? ..... boxes.

2. Take a handful of seeds like kidney beans, chickpeas, etc.

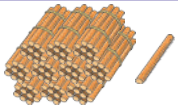
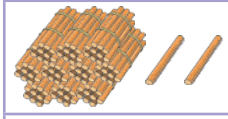
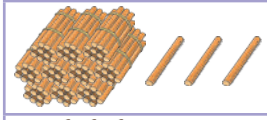
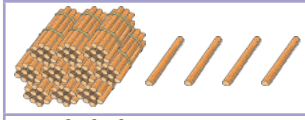
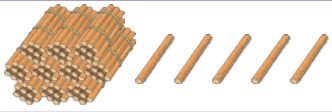
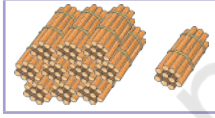
- Estimate the number of seeds you have in your hand: .....
- Count the number of seeds in your hand: .....
- How many handfuls of seeds will get the total close to 100 seeds? ..... handfuls.

Are these 100?

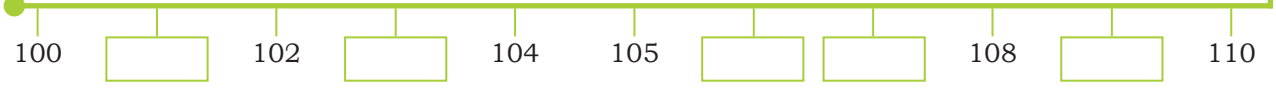


Yes, 10 bundles of 10 sticks means one bundle of 100.

Let's observe the table and learn to write numbers beyond 100. Fill in the blank spaces.

	100 and 1 makes One Hundred One	101
	100 and 2 makes One Hundred Two	102
	100 and 3 makes One Hundred	103
	100 and 4 makes One Hundred	104
	100 and 5 makes One Hundred Five	.....
	100 and 6 makes One Hundred.....	106
	100 and 7 makes One Hundred Seven	.....
	100 and 8 makes One Hundred	108
	100 and 9 makes One Hundred	.....
	100 and 10 makes One Hundred Ten	110

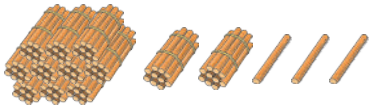
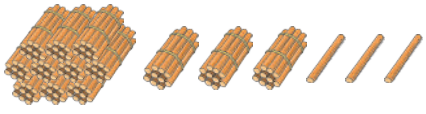
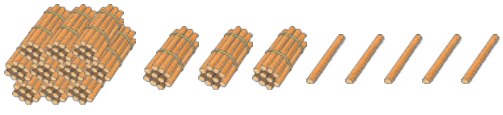
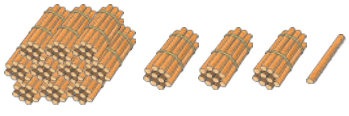
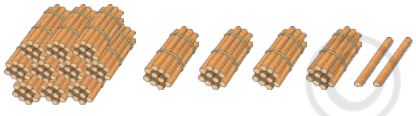
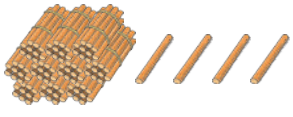
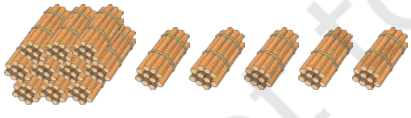
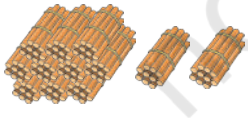
Fill the blank spaces on the number line given at the edge of the page.



Let us Do

1. Let's continue making numbers above 100 using matchstick bundles and loose sticks.

   In the table given below, identify the bundles and loose sticks and write the corresponding numbers.

Bundles and Sticks	Matchstick bundles			Number
	100	10s	1s	
	1	2	3	123
	.....	.....	.....	.....
	.....	.....	.....	.....
	.....	.....	.....	.....
	.....	.....	.....	.....
	.....	.....	.....	104
	.....	.....	.....	.....
	.....	.....	.....	120

Extend this table in your notebook till 150. Do you observe something common in all the numbers?

Match the numbers with the correct bundles and loose sticks.

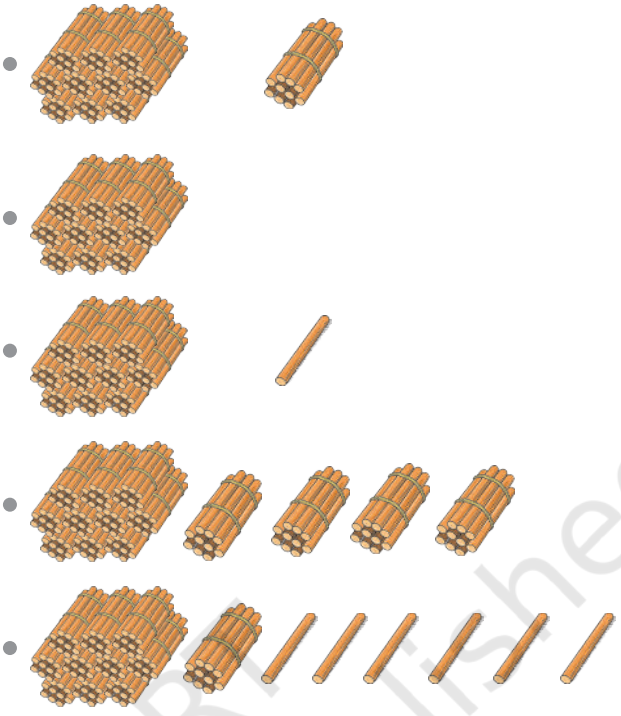
101 •

116 •

110 •

100 •

140 •



Oh! Talking Pot is back. It will say one more than whatever you say.

Bholu said	Pot said
127	128
109	.....
134	.....

Bholu said	Pot said
105	.....
.....	150
100	.....

Fill the blank spaces on the number line.

Show the following numbers on the number line below.

1. Place an arrow on 125.
2. Make a tree on 112.
3. Make a smiley on 149.
4. Put a cross (×) on 137.

Let us Play

Clap , Snap and Pat

One clap represents 100 One snap represents 10 One pat represents 1

Two claps represent 200 Two snaps represent 20 Two pats represent 2

Play this game in two teams. One team will show a number using clap, snap and pat and the other team will guess it.
Example: Clap – Snap Snap – Pat Pat Pat means 123 (One hundred and twenty three)

Let's now count beyond 150.

Pictorial form	Matchsticks Bundles			Number sentence	Number name
	100	10s	1s		
	1	5	0	150	One hundred and fifty
	1	5	1	100 and 51	One hundred and fifty one
	.....	.....	.....	100 and 52	One hundred and fifty two
	1	.....	3	100 and	One hundred and fifty three
	1	5	.....	100 and	One hundred and fifty four
	1	5	.....	100 and 55	One hundred and fifty five
	1	.....	6	..... and 56	One hundred and fifty six
	.....	5	7	100 and	One hundred and fifty seven
	.....	.....	.....	..... and	One hundred and fifty eight
	.....	.....	.....	..... and	One hundred and fifty nine

Extend this table till 200 in your notebook. How much is 200?

199 189

Let us Do at Home

Fill a small container like a small bowl with seeds such as kidney beans, chickpeas, etc.

182

Look closely at the container to estimate how many seeds are in it. Your Estimate: ..... seeds.

Now count and see how close your estimation is to the actual number of seeds. Counted ..... seeds.

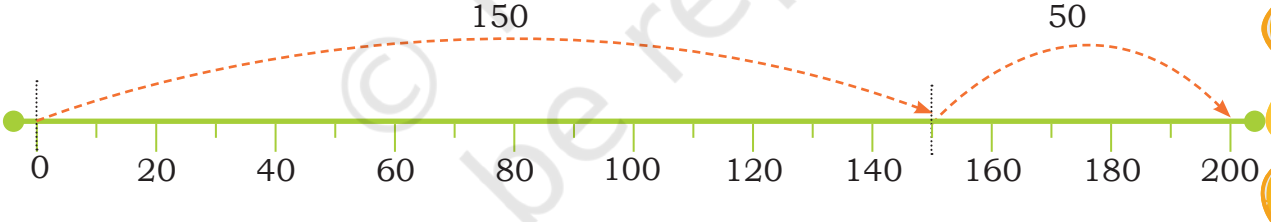
Guess how many times you need to fill the container to get close to 200 seeds? Your guess: ..... times.

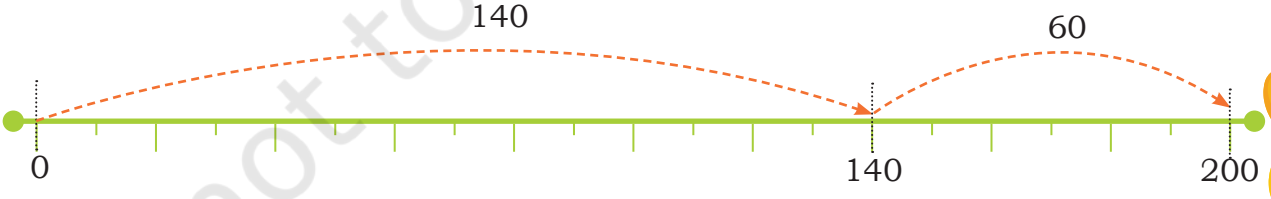
177

I can show 200 on the number line too.

150 + 50 = 200

140 + 60 = 200





Write the numbers in order on the stones.

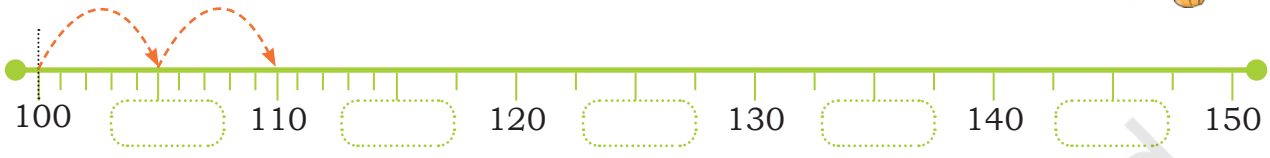
167

150 158 163

Let us Do

Jumping Game

1. Draw jumps of 5 on the number line and write the numbers on the number line in the given spaces.



2. Continue jumps of 20 and write the missing numbers on the given number line.

3. Fill in the table.

1 less	Number	1 more
	160	
	129	
	187	
	134	
	158	

4. Show at least two different ways of making the following numbers.

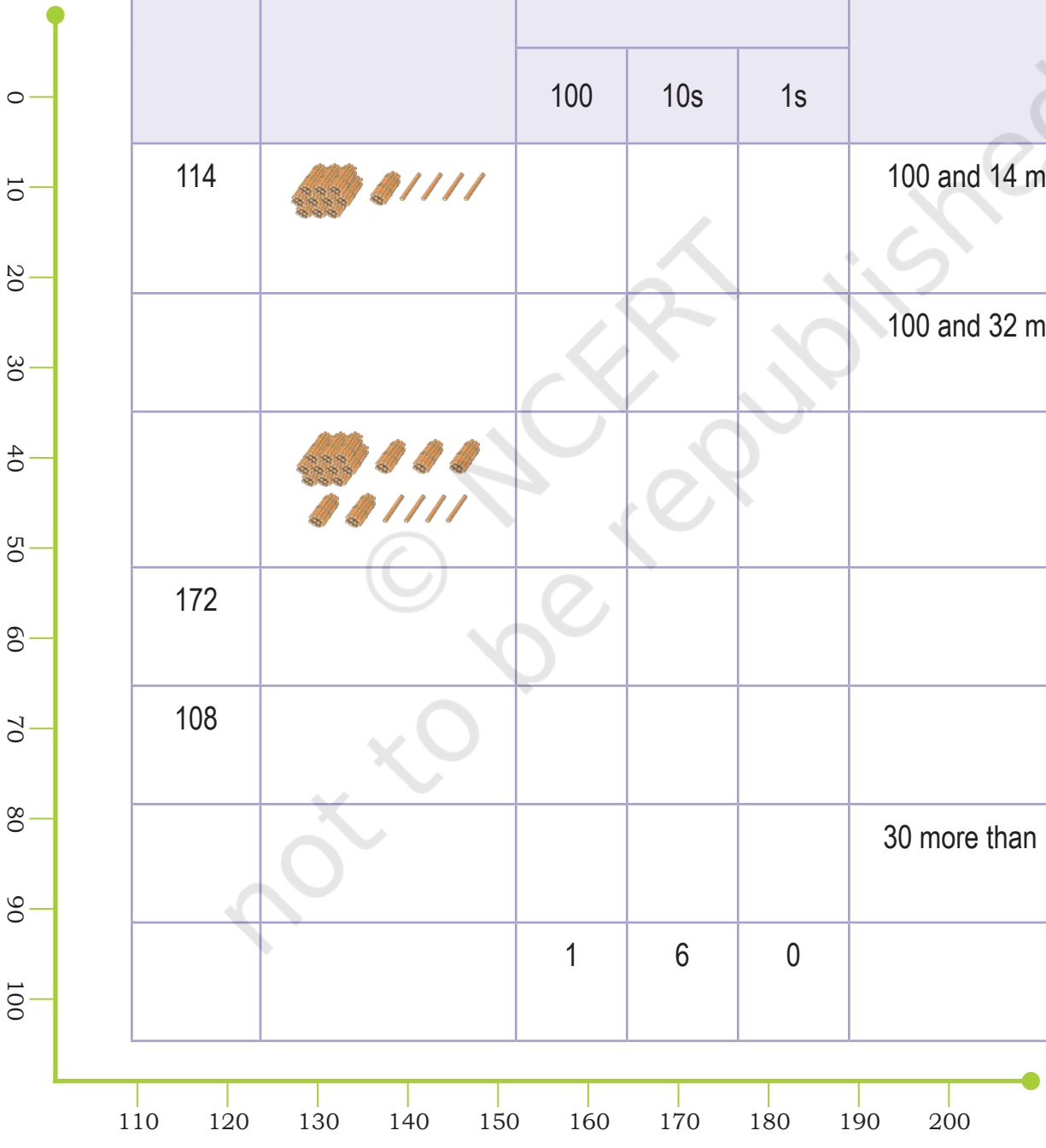
   a. Use matchstick bundles to make 125.

   b. Make 145 using a *ginladi*.

   c. Make 170 on a number line.

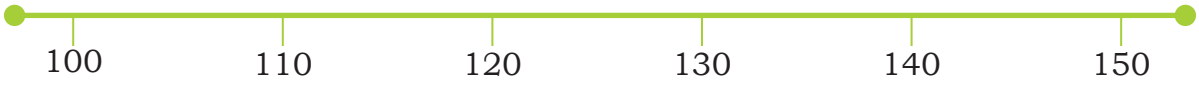
5. Fill in the empty boxes appropriately.

Number	Pictorial form	Matchstick bundles			Number sentence
		100	10s	1s	
114					100 and 14 more
					100 and 32 more
172					
108					
					30 more than 150
		1	6	0	



6. Mark the following numbers on the number line.

a. 109, 112, 124, 134, 146



b. 155, 163, 178, 189, 198

c. 125, 142, 153, 174, 199

4 Vacation with My Nani Maa

0333CH04

Chirag and Nandini love their Nani Maa. She is their best friend. They love playing and learning with her.

Listening to her stories is their favourite activity.

Nani Maa shows them a “magic trick”.

You hide some marbles with your handkerchief. I shall tell you the number of marbles you have hidden.

Can you tell what the trick is?

Let us Do

Perform the trick on your friends. Write the numbers of hidden seeds in the table below.

Total seeds	Seeds on the table	Hidden seeds
15	12	
17	10	
19	8	

Total seeds	Seeds on the table	Hidden seeds
20	9	
23	7	
27	12	

Teacher’s Note: Say a number between 1 and 9. The child has to quickly say the number which makes it 9. Repeat this task with other numbers like 10 and 20.

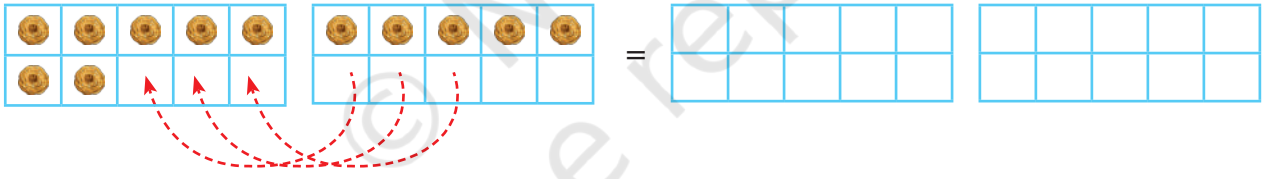
Both of them have brought a lot of things for their Nani Maa.

Nandini takes out Nani Maa's favourite sweet '*Balushahi*'.

Nandini had 7 *balushahi*  in her box and

Chirag had 5 *balushahi*  in his box.

Draw the number of dots.

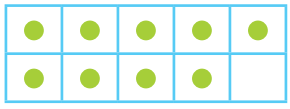


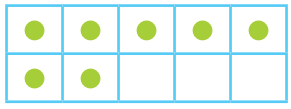
7 *Balushahi* + 5 *Balushahi* = ... *Balushahi*

How many did he eat? ..... *balushahi*

7 *Balushahi* – 5 *Balushahi* = ... *Balushahi*

Chirag got 9 story books for Nani Maa and Nandini got 7 puzzle books for Nani Maa. How many total books did the children get for Nani Maa?





..... Books + ... Books = ... Books

Let us Do

Use the tens frame to solve the following.

(i) 6 + 8 = ...

(ii) 5 + 10 = ...

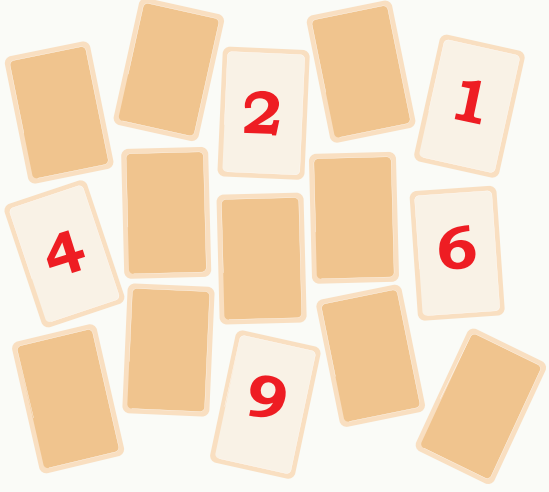
(iii) 9 – 6 = ...

(iv) 18 – 9 = ...

Let us Play

Card Game

Make four sets of number cards with numbers 1 to 10. Shuffle and spread out all cards facing down. Take turns with your friends to open one card at a time. When you open, look at your card, and the cards already opened. If any three cards make an addition or a subtraction statement, you can keep all three cards. Else, put it down opened. For example, Nandini opens 4. The numbers 2 and 6 are already opened. So Nandini can keep all three cards 2, 4 and 6. The game continues till all cards are opened. Whoever collects the greatest number of cards wins the game.



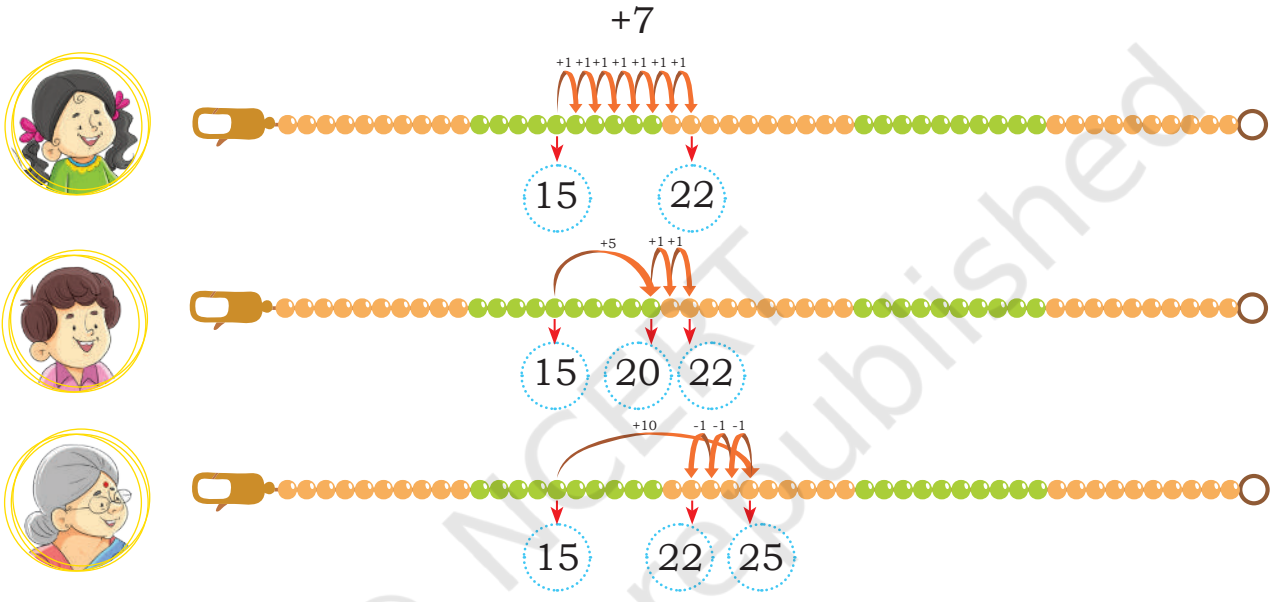
Nandini and Chirag have got their stamps to show to their friends and Nani Maa.

Look Nani Maa, We have collected 15 stamps.

Let me give you some more. Here are 7 more.

How many stamps do they have now?

Nandini, Chirag and Nani Maa figured out the answer in three different ways using their *ginladi*:



15 Stamps + 7 Stamps = 22 Stamps

Or 15 + 7 = 22

Let us Do

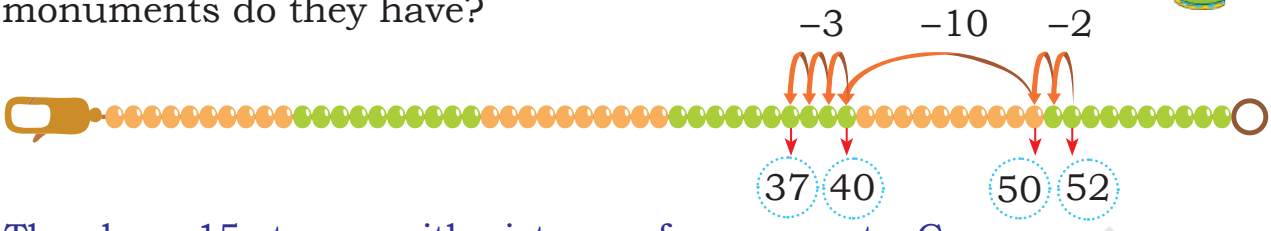
Nandini and Chirag have 22 stamps. Nani Maa's brother gives them his collection of 30 stamps. How many stamps do they have now?

22 Stamps + ____ Stamps = ____ Stamps

Or 22 + ____ = ____

They now have 52 stamps. Nandini and Chirag count and find that they have 37 stamps with faces of famous persons and the remaining with pictures of monuments.

How many stamps with pictures of monuments do they have?



They have 15 stamps with pictures of monuments. Can you find other ways of doing it?

52 Stamps – 37 Stamps = ◯ Stamps

◯ – ◯ = ◯

Or

37 Stamps + ◯ Stamps = 52 Stamps

◯ + ◯ = ◯

How many more stamps will they need? Figure it out using the number line.

◯ stamps + ◯ stamps = ◯ stamps

Or, ◯ + ◯ = ◯

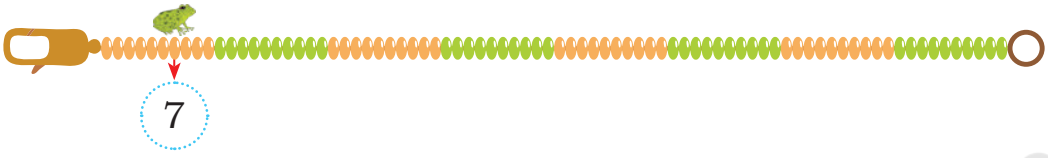
Teacher's Note: Different strategies of jumping on the number line for solving the problems should be encouraged throughout the chapter. Revise skip counting for small numbers in the class.

Let us Do

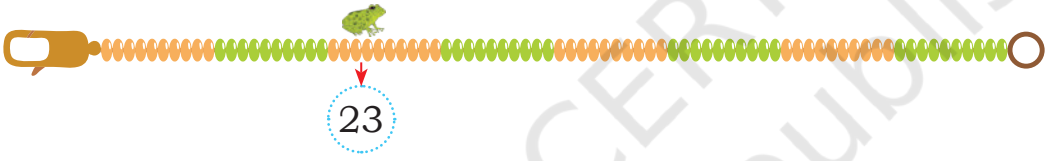
1. Solve using a *ginladi*.

   a. 34 + 6 b. 23 + 12 c. 33 – 5 d. 42 – 15

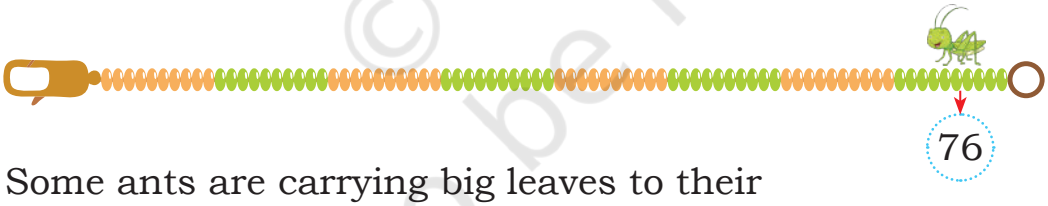
2. A frog is jumping on the *ginladi*. He is at 7. He wants to jump 10 beads at a time. Mark the beads that he will jump on and write the numbers.



3. The frog again jumps forward by 10 each time. Mark all the places where the frog will land.



4. The grasshopper jumps backward by 10 each time. Mark all the beads that the grasshopper will jump on and write numbers.



Some ants are carrying big leaves to their homes. They will eat these leaves in the rainy season. Nani Maa can tell how many ants there are without looking under the leaves. Can you also tell how many ants there are under the leaves?

Fill the answers in the boxes provided.

5. Fill in the tables by jumping as instructed.

Jump 5

34	56	87
39		82
	66	

Jump 6

28	59	73
34		67
	71	

Jump 9

29	12	93
38		84
	39	

Let us Play

Adding and Subtracting Smartly with the Number Grid

Let us play a grid game. Each player takes turns rolling two dice to make a two-digit number, and moves the counter by the number they have made. They can choose to move forward or backward. The first to reach a number between 91 and 100 is the winner!

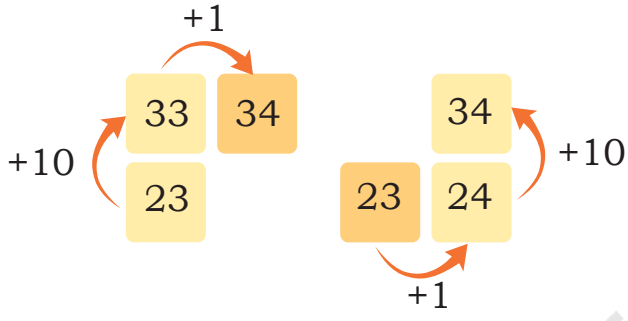
91	92	93	94	95	96	97	98	99	100
81	82	83	84	85	86	87	88	89	90
71	72	73	74	75	76	77	78	79	80
61	62	63	64	65	66	67	68	69	70
51	52	53	54	55	56	57	58	59	60
41	42	43	44	45	46	47	48	49	50
31	32	33	34	35	36	37	38	39	40
21	22	23	24	25	26	27	28	29	30
11	12	13	14	15	16	17	18	19	20
1	2	3	4	5	6	7	8	9	10

Teacher's Note: Encourage children to add two numbers on the grid by playing the game. If you can't go forward, move backward. If none, roll again.

Nandini is at 23. She has got 11 on the dice as the number. She thinks of two ways of moving to 34.

Chirag is at 19. He gets 54 on the dice.

A jump from 23 to 34 is ..... steps.



Help him move his counter to the correct number.

1. Use the number grid to answer the following. Show your thinking by drawing arrows in the grid.

a. Nandini is at 45. She gets 34. She will land on .....

b. Chirag is at 75. He gets 56. He will land on .....

c. Nandini is at 30. She gets 66. She will land on .....

d. Chirag is at 89. He gets 63. He will land on .....

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

Teacher's Note: Introduce children to different words to express addition (more, added to, total, sum) and subtraction (take away, difference, less, reduce). Provide opportunities to children to make such jumps with other numbers and help them notice the pattern in the numbers.

MAGIC SUMS

Nandini and Chirag find some puzzles that Nani Maa had solved.

Observe the numbers. What do you notice?

Fill the boxes below. In each puzzle, all numbers 1-9 are there. The numbers in each row add up to the number in the box on the right. The numbers in each column add up to the number in the box below.

5	2	8	15
3	1	6	10
9	4	7	20
17	7	21	

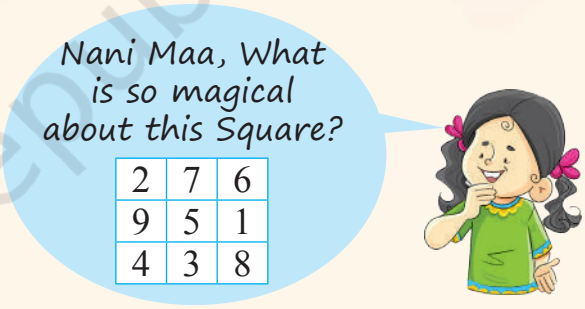
	5	8	16
			22
1		4	7
11	16	18	

	3		12
	5		15
	7	4	18
7	15	23	

		6	10
			19
		9	16
10	12	23	

Add the numbers in the blue boxes and the numbers in the red boxes in each of the puzzles. What do you find?

Nani Maa was doing something in the newspaper. Nandini and Chirag looked into what she was doing.



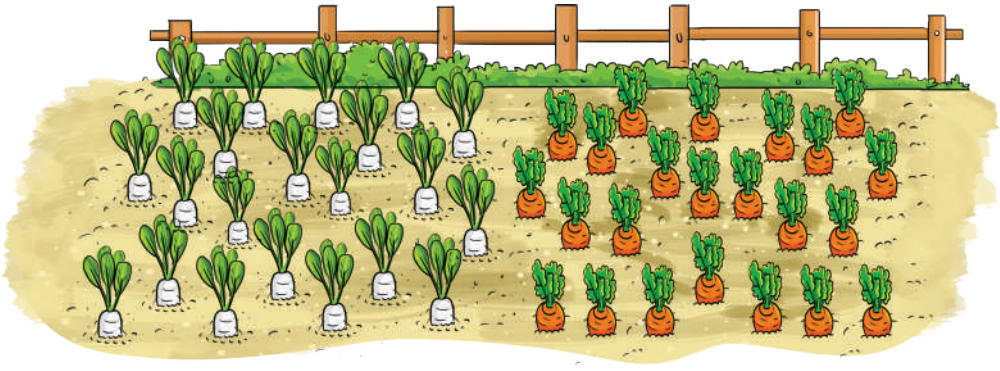
Magic magic magic!!!
With numbers 1 to 9
Add the numbers in a line
From left to right
And from top to bottom
Did you find the magic?
Now, try from right to left
And from bottom to top
Isn't it magical?
There is something more,
something more
Add the numbers on the diagonal
Isn't it magical?

Fill the blanks to complete the Magic square

	3	
		9
6		

Teacher's Note: The teacher can create similar problems and challenge children with puzzles.

Nandini and Chirag went to their Nani Maa's field.
Nani Maa has two fields.



Nani Maa has plucked 25 red radishes and 36 white radishes.
How many total radishes has she plucked?

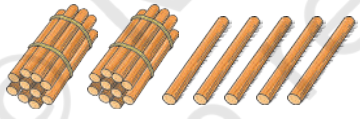
Nandini starts by drawing the problem on the ground.

red radish 25

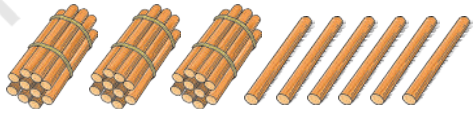
white radish 36

We need to add 25 and 36 to find the total number of radishes.

25 red radishes

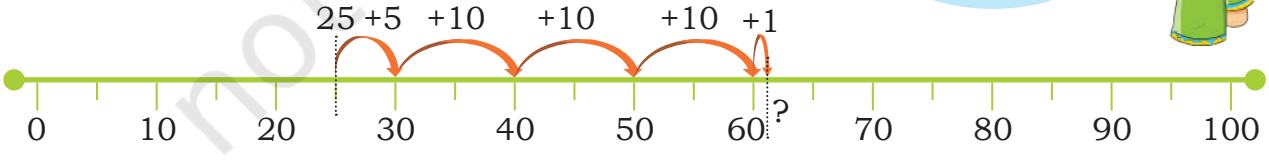


36 white radishes



25 red radishes + 36 white radishes = ◯ radishes

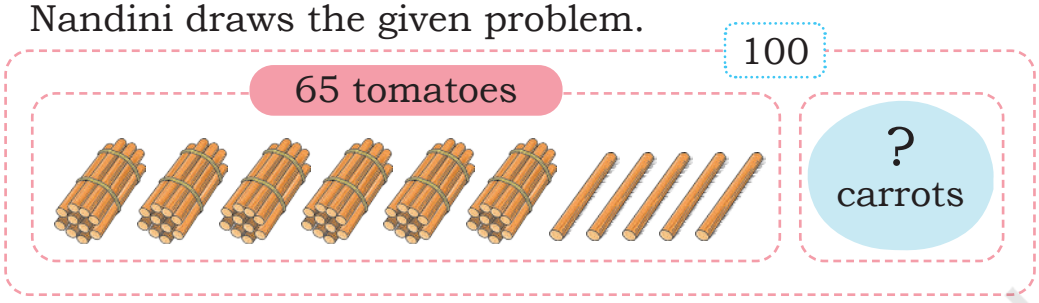
25 + 36 = ◯



Find other ways of solving the same problem on the number line.

Nani Maa puts tomatoes and carrots in a box and writes 100 on it.

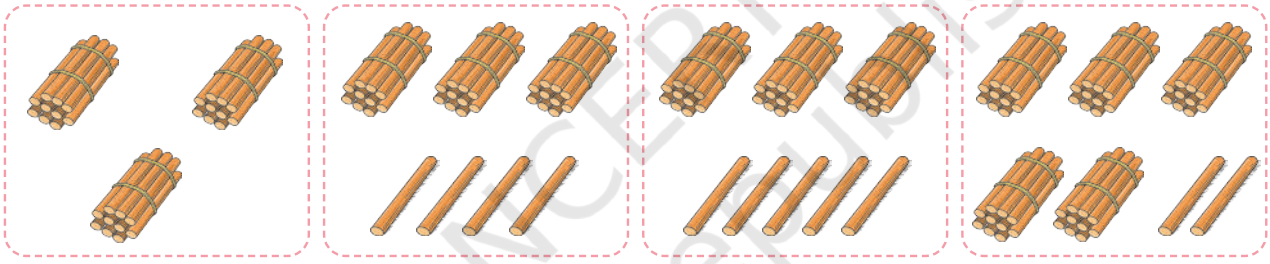
Nandini draws the given problem.



Your estimation of carrots

.....

Circle the bundle of sticks that shows the correct number of carrots.



Solve the above problem on the number line.

..... tomatoes and ..... carrots total ..... vegetables

..... + ... = 100

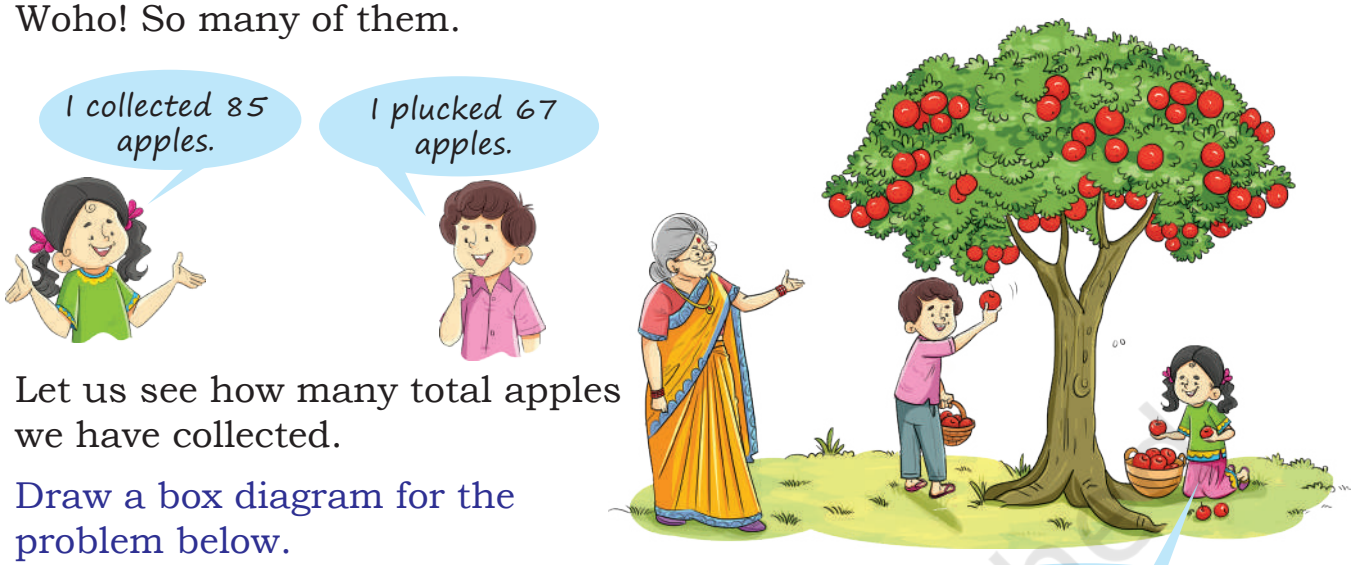
.....tomatoes taken out from a box of 100 vegetables, leaves ..... carrots

100 – ..... = ...

Teacher's Note: Encourage children to share their thinking behind their estimates and answers.

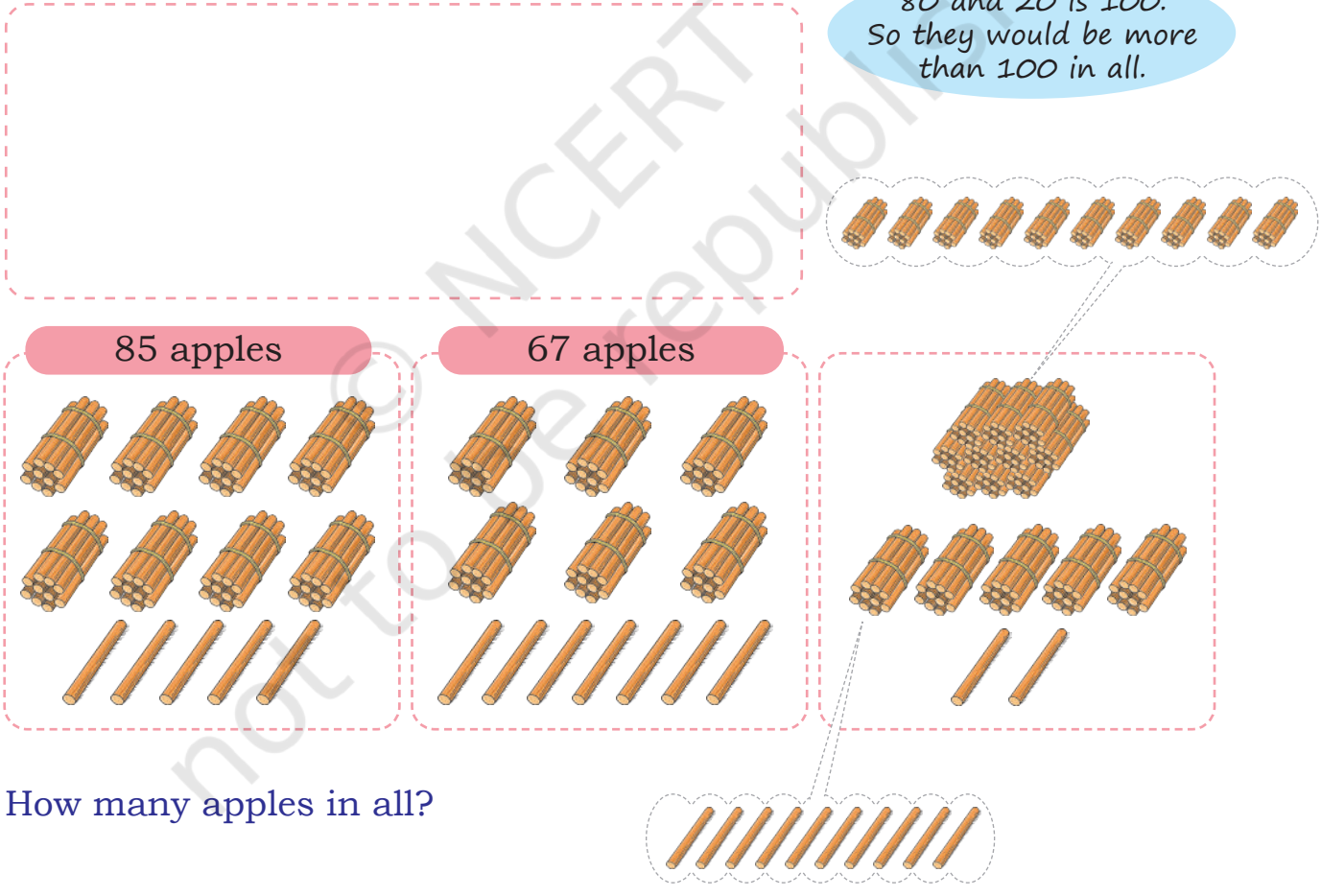
Nani Maa asks Nandini and Chirag to pluck the ripe apples.

Woho! So many of them.



Let us see how many total apples we have collected.

Draw a box diagram for the problem below.



How many apples in all?

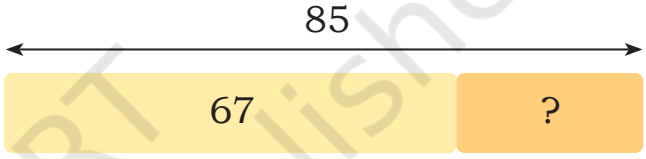
Try finding out the answer on the number line below.

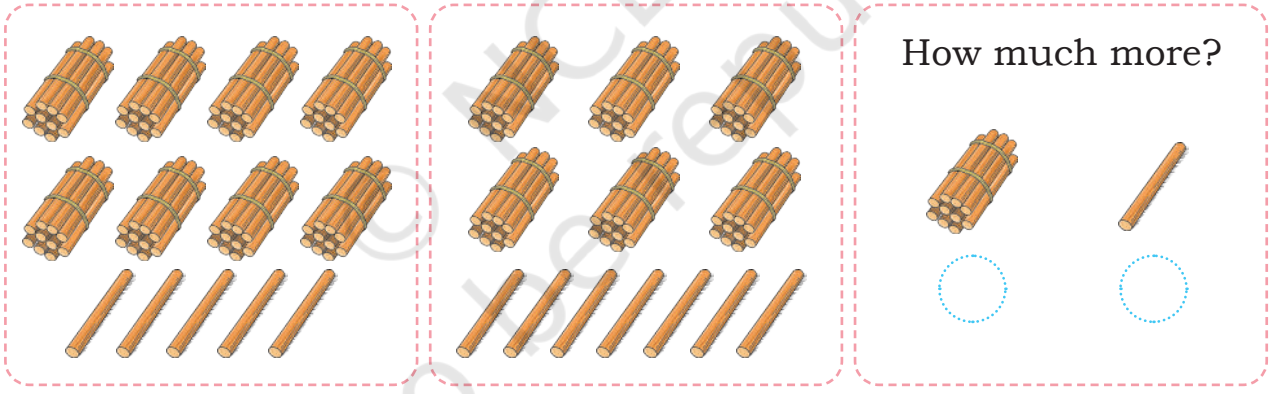
85 apples + 67 apples = ◯ apples

85 + 67 = ◯

Who collected more, Nandini or Chirag? How much more?

Chirag draws a box diagram for the problem.





Nandini's apples Chirag's apples

..... collected ..... apples more than ..... .

Teacher's Note: Create more such word problems. Allow children to draw and solve them using locally available materials.

Solve the following problems by first drawing the box diagrams. Use matchstick bundles or a number line to find the answer.

1. Babli didi sold 34 books on Monday and 45 books on Tuesday. How many books did she sell in the two days? How many more did she sell on Tuesday than on Monday?
2. In a cricket match at Rosary school, Team Red made 56 runs before lunch and 65 runs after lunch. How many total runs did they make?
3. Rama sells *vadas* in the school canteen. She has sold 39 *vadas* the first day. She sold 12 more the next day. How many *vadas* did she sell in these two days?
4. Gehu brings 56 plants for her terrace garden. Some plants dried up. She is left with 29 plants. How many plants dried up?
5. Choose two numbers. Make a word problem using the two numbers. Share it with your classmates.

.....

.....

Let us Play

This game is to be played between two children. The first player should say a number between 1 and 10. The second player adds a number between 1 and 10 to the first player's number. The first player again adds a number between 1 and 10 to the previous sum. The player to reach 100 first is the winner. An example is given here:

Player 1 wins this round!

Play this game with your friends.

Player 1	Player 2	Total
9		9
	10	19
8		27
	9	36
10		46
	8	54
10		64
	10	74
9		83
	7	90
10		100

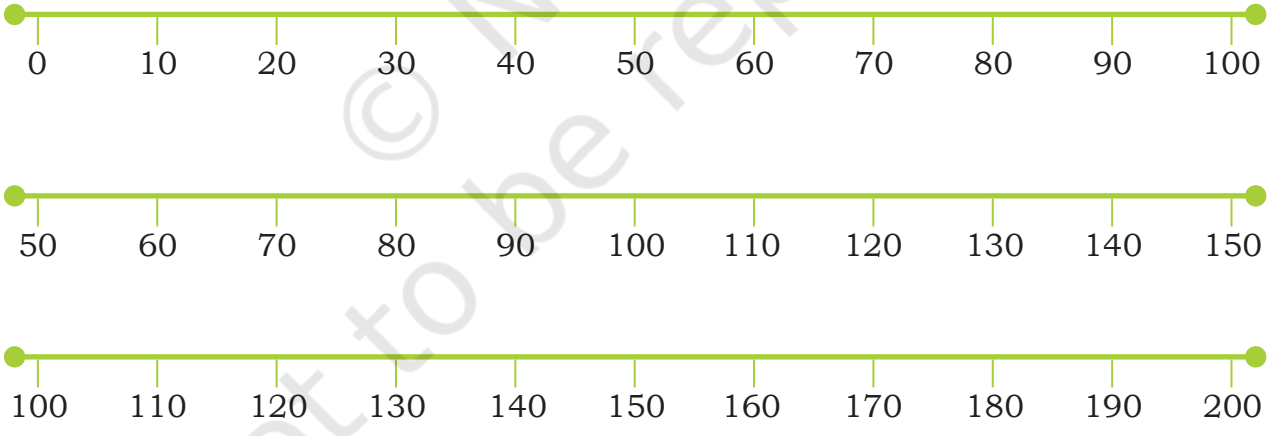
Let us Do

1. Estimate the answer and say if it will be more or less than 100. Match with the correct one.

150 – 50 is 100.
So, 150 – 49 is more than 100.

134 – 56 20 + 41 150 – 49 199 – 90 70 + 30 + 1 156 – 65	More than 100 Less than 100	68 – 26 95 + 10 + 5 109 – 80 63 + 26 124 + 23 + 20

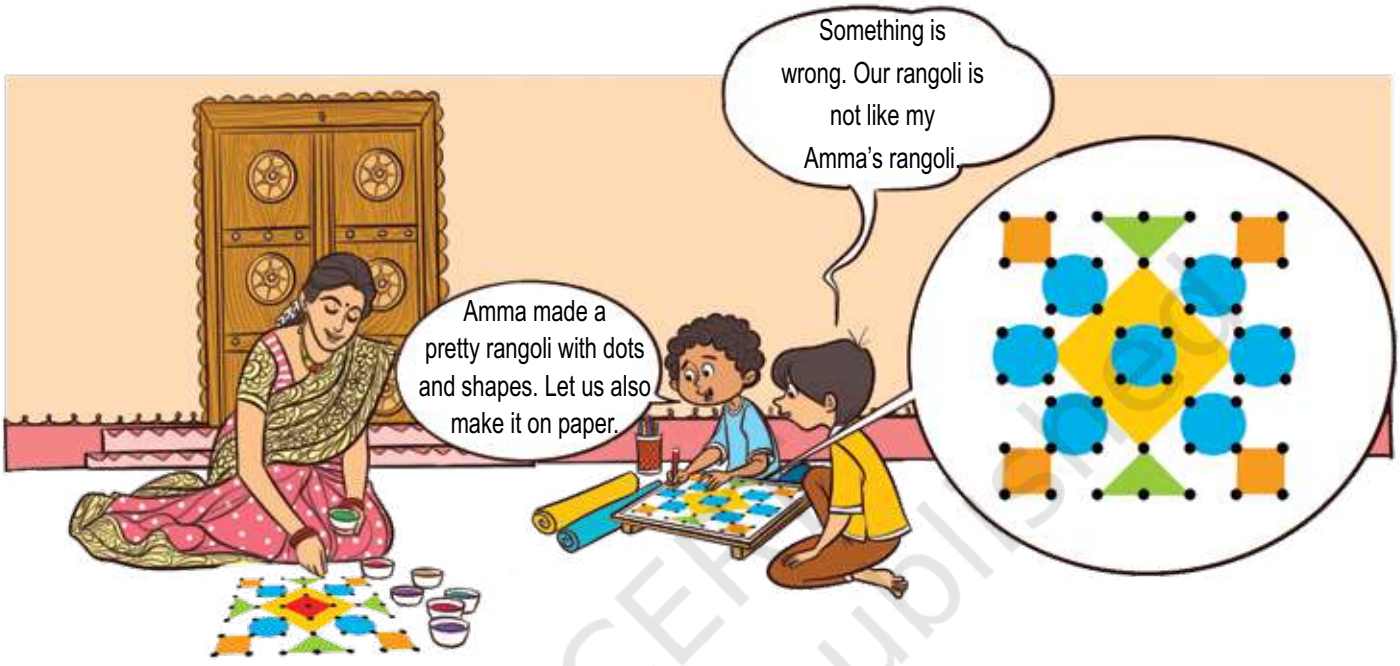
2. Solve the above problems using a number line. Write the answer next to the problem.



Teacher's Note: Please note that the number line can start from any number. The distance between two numbers can be changed as required. Children can also work with open number lines without maintaining equal distances between two numbers. They should be asked to write the jumps they are taking on the number line.

5 Fun with Shapes

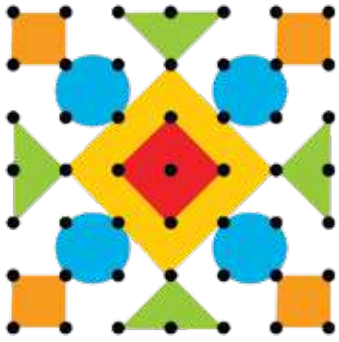
0333CH05



Let us Do

1. Make Amma's *rangoli* on the dots given below.

2. Name the shapes drawn in Amma's *rangoli*:



_____, _____, _____

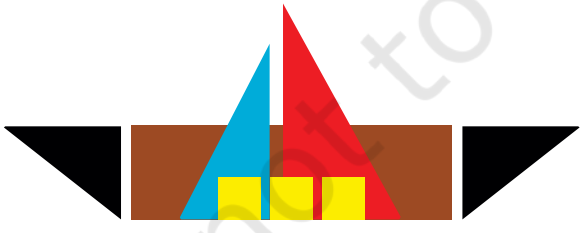
3. How many shapes are made with

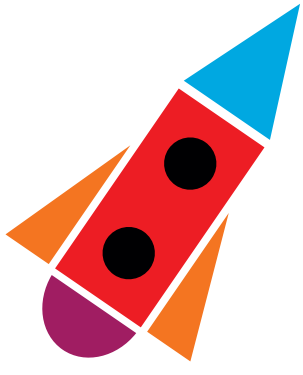
(i) Curved lines _____

(ii) Straight lines _____

4. Use cut outs of shapes to make a *rangoli* design. Outline the object and colour.

5. Try to make the following objects using shape cutouts.





*May use Early Mathematics Kit (NCERT)

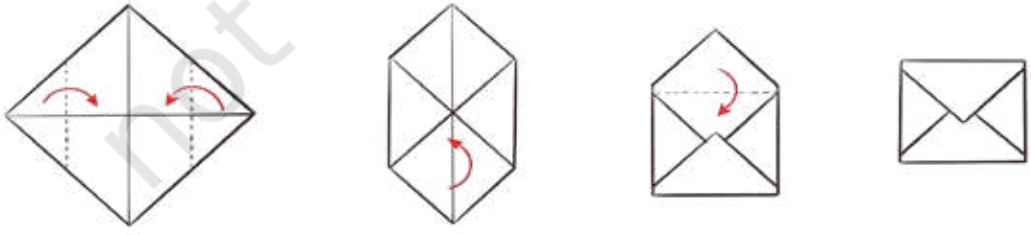
Teacher's Note: Encourage children to use cut outs of shapes creatively. Let children compare two rangolis and discuss their similarities and differences.

Let us Do

1. Collect some cardboard boxes and open them up carefully. What shapes do you see in the flattened boxes?

2. Make an Envelope. Use a square piece of paper and fold it as shown in the picture.

1 2 3 4



Teacher's Note: Encourage children to open the box and look at the number of faces and notice their shapes. Let children make cylinders and cones with paper, and cubes and cuboids with the nets provided in the book.

Baking biscuits

Why did the two children get different shapes? Discuss.

Name any three objects that have rectangular faces.

_____, _____, _____

Let us Do

1. Trace all the faces of any cuboidal object.
(example — sharpener or eraser)

(a) How many different faces did you get? _____

(b) What shapes are these faces? _____

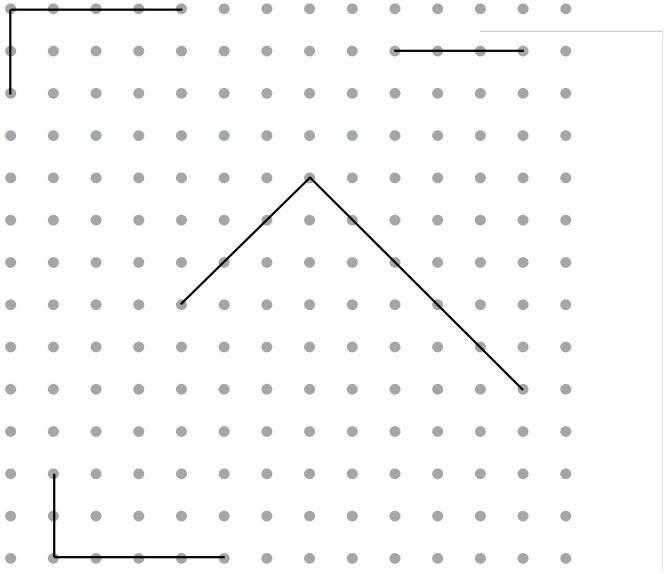
(c) Did you get a square? _____

(d) Can you get six different rectangles by tracing a cuboid? _____

(e) Can a cuboid have a face like a triangle? _____

(f) The faces of a cuboid are _____ or _____ in shape.

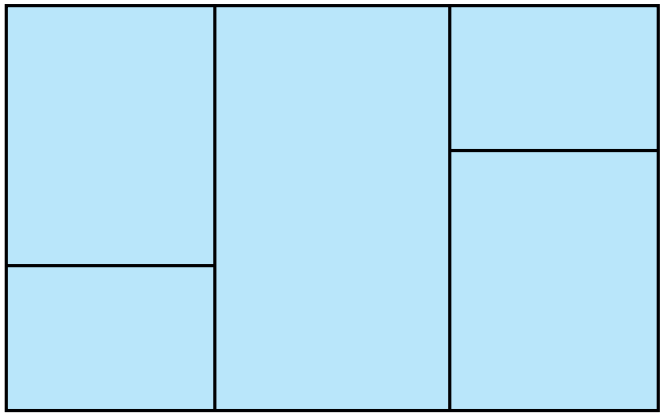
2. Construct the rectangles using the sides given below:



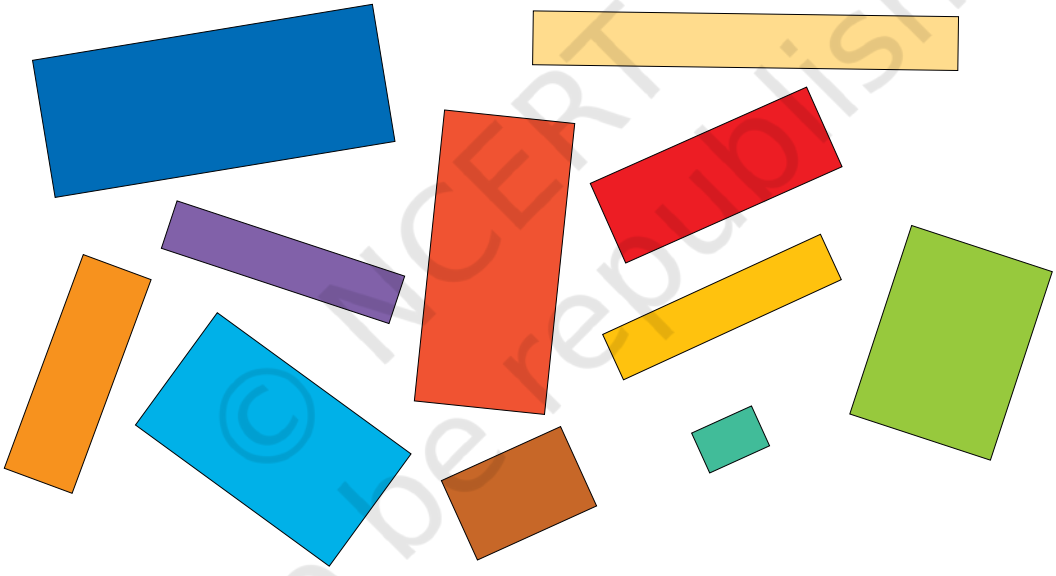
3. Draw 3 bigger rectangles around this small rectangle.

Teacher's Note: Allow children to build a rectangle with 4 sticks. Observe if children have developed an intuitive sense of a rectangle. Introduce the word rectangle. Provide them opportunities to observe and draw rectangles of different sizes and in different orientations on a dot grid.

4. Count and write the number of rectangles in the following picture. _____



5. Look at the different rectangles given below and answer the following questions.



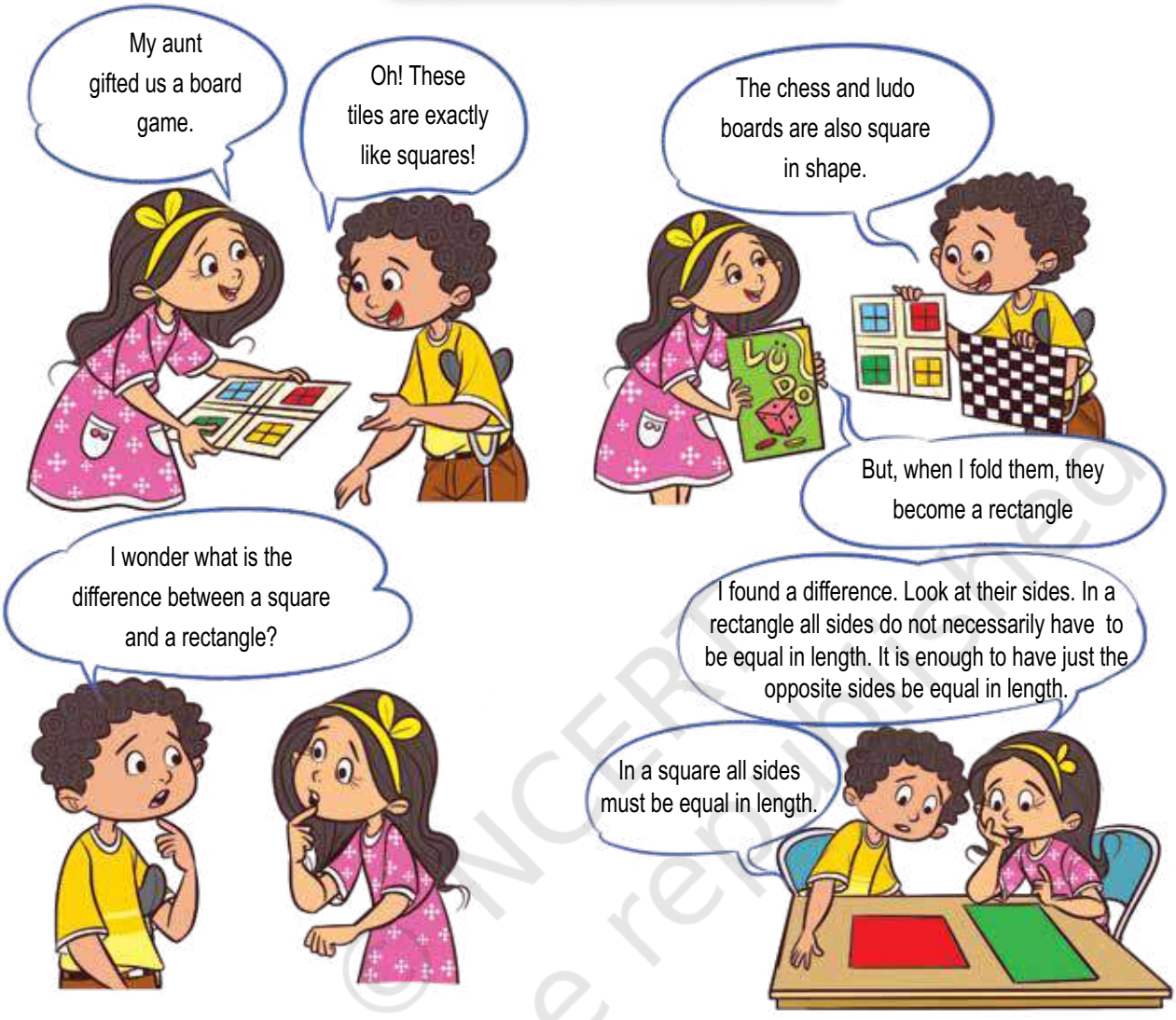
(a) How many sides are there in a rectangle? _____

(b) How many corners are there in a rectangle? _____

(c) Are there any sides in a rectangle that are equal in length to each other? _____

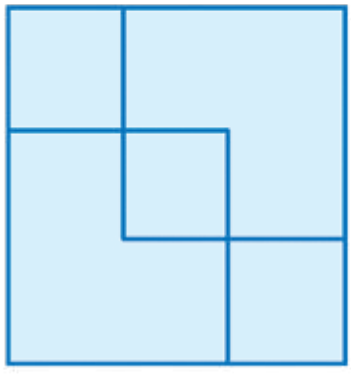
(d) What do you notice in a rectangle? Describe it in your own words.

Same to Same



1. Both have _____ sides.

2. Both have _____ corners.

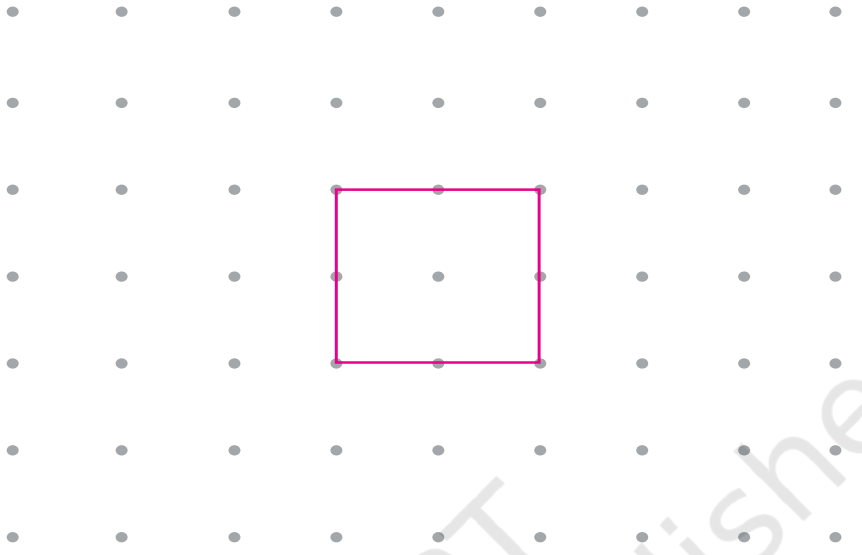


How many squares do you see in this drawing?

Teacher's Note: Allow children to make a square with 4 sticks. Observe if children have developed an intuitive sense of a square and right angle.

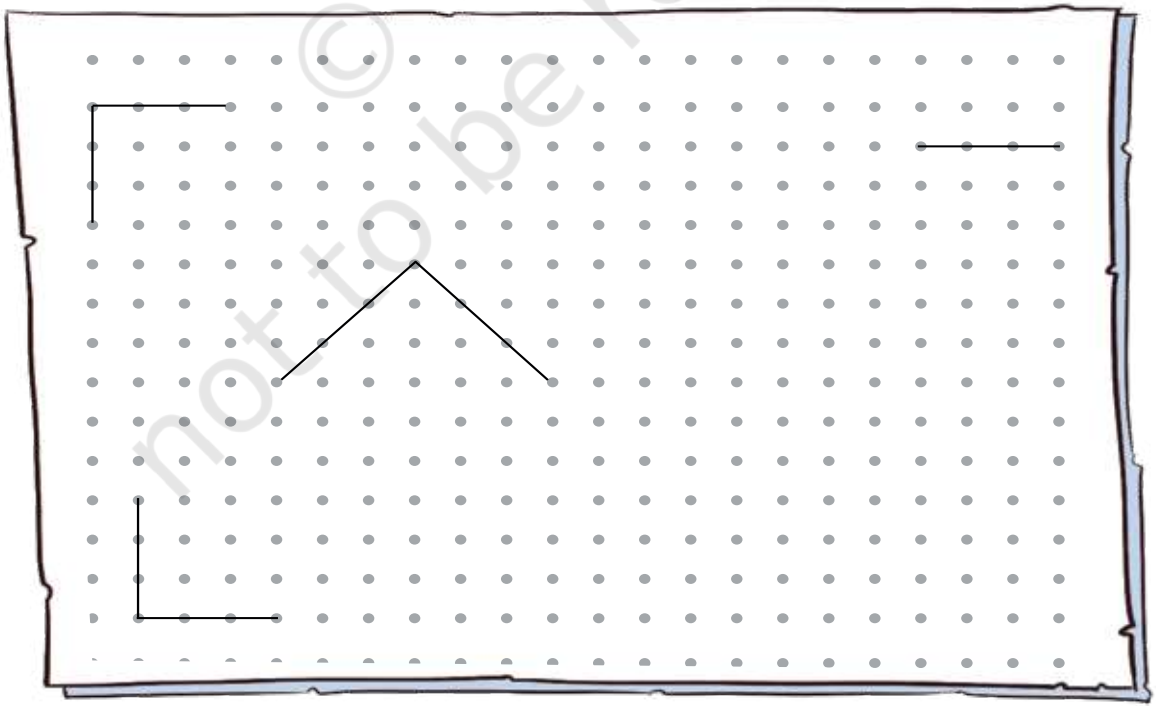
Let us Do

1. Here is a square. Draw 2 bigger squares around this square.



2. Use matchsticks to make a square so that it has squares on all its sides. How many squares did you get?

3. Complete the squares using the sides given below.



4. Use the square cutouts from the book to do this activity.

How many different shapes can you make by joining

(a) 2 squares

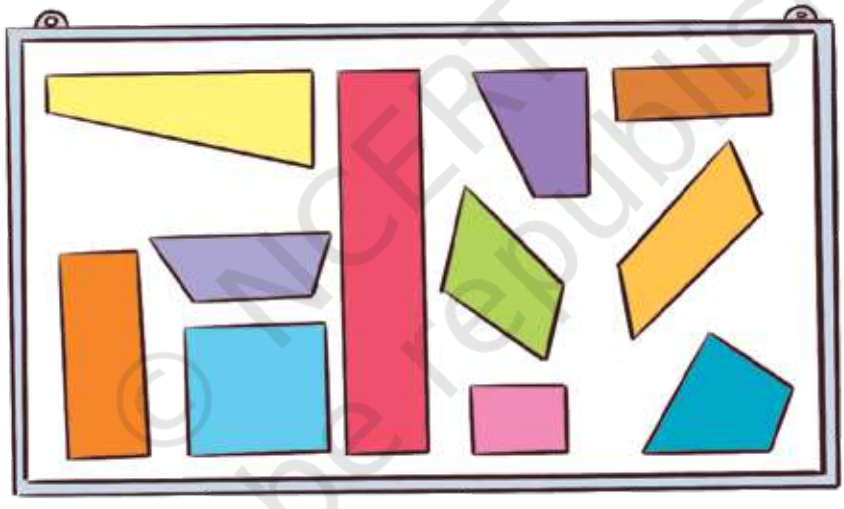
(b) 3 squares

(c) 4 squares

Show them in a dot grid. Some dot grids are provided in the back of the book.

Let us Explore

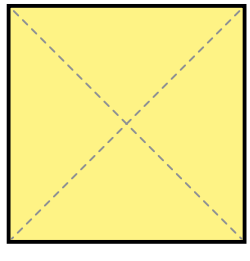
1. Tick ✓ the shapes that are rectangles.



Which figures are not rectangles? Explain why.

2. Can you fold all the corners of a square sheet in such a way that the number of corners remains the same?

3. Make a square on a cardboard sheet and cut along the dotted lines marked on the square as shown to get 4 triangles. Make as many different shapes as possible by joining three triangles together. How many shapes can you make?



Now try with four triangles together.

Square corners

Are the corners of a square the same?_____

How do you know?

Pile up some squares over one another and see.

Are the corners of a rectangle the same?

How do you know?

Pile up some rectangles over one another and see.

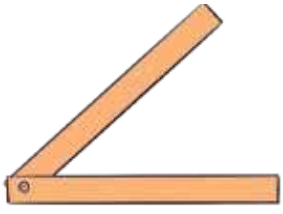
Are the corners of the square and a rectangle the same?

Name some objects in your class that have only square corners.

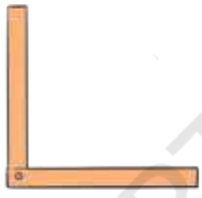
_____

Let us Do

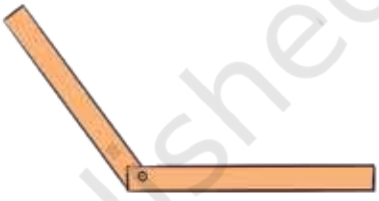
You can join two paper strips to show different corners.



Less than a square corner



Square corner

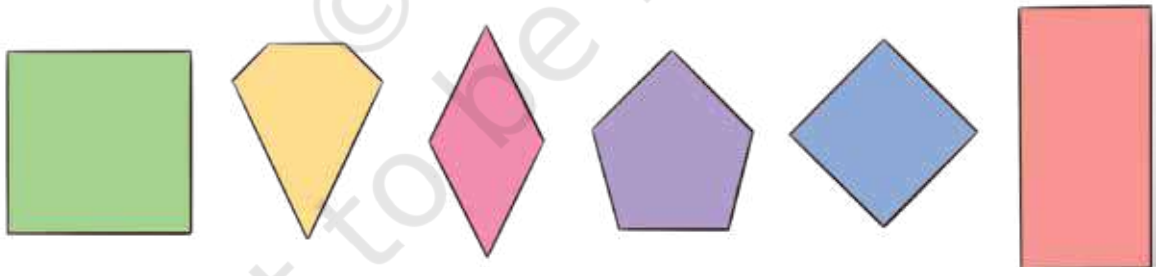


More than a square corner

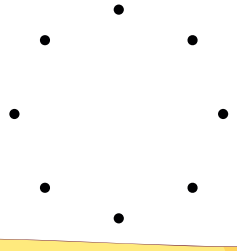
Use the strips to show a square corner, more than a square corner and less than a square corner.

Can you use the strip to check whether the corner of your table and the board are square corners?

1. Mark the square corners in these shapes.



2. Connect the dots to make some squares.



How many different squares did you get?

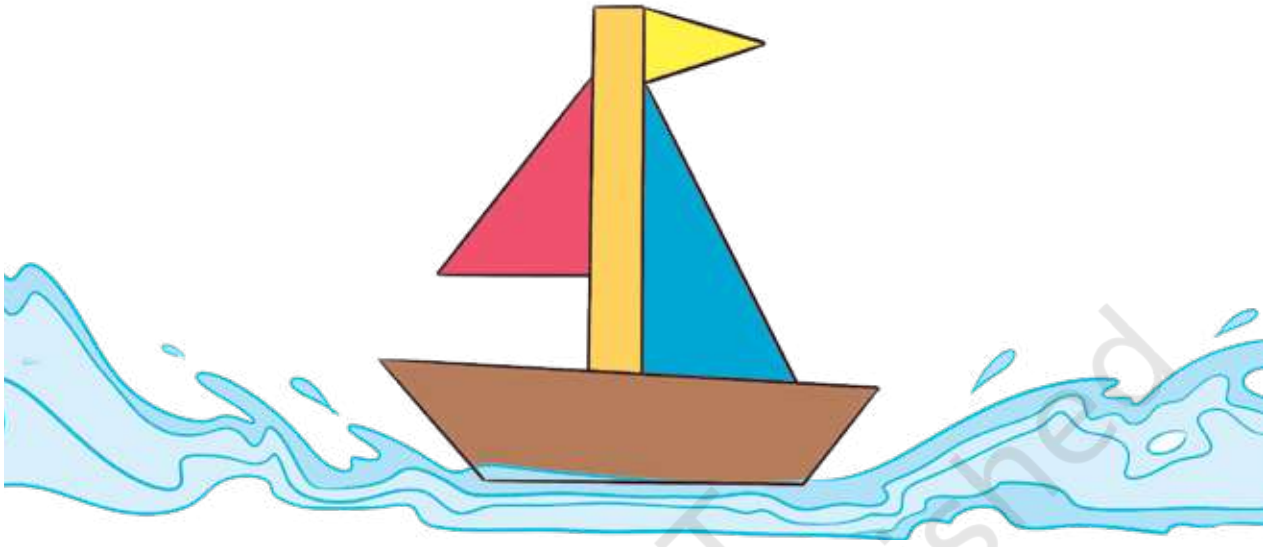
_____

Teacher's Note: Encourage children to classify shapes with only a square corner, shapes with less than a square corner, and shapes with more than a square corner. Some shapes will have more than one type of corner. Make such shapes using matchsticks.

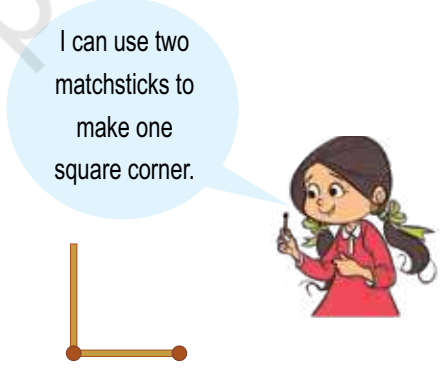
3. Look at the picture given below and answer the following.

a. Count and write the number of corners.

b. Circle the square corners.

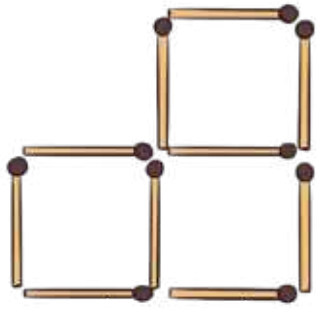


4. Use two matchsticks to make two square corners and then four square corners. Draw and show it in the space given below:



5. Murugan made three squares with 10 matchsticks.

How many squares can you make with 12 matchsticks?



Triangle - Triangle ...so many Triangles

Describe a Triangle

Triangles have _____ sides. They have _____ corners.

Let us Do

1. Draw and name some triangular objects that you see around you, in your notebook.

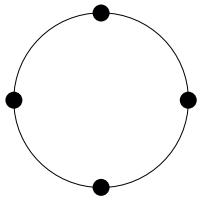
2. Count the number of triangles in the given rangoli.

(a) 

(b) 

_____ _____

3. How many different triangles can be made using the dots on this circle?

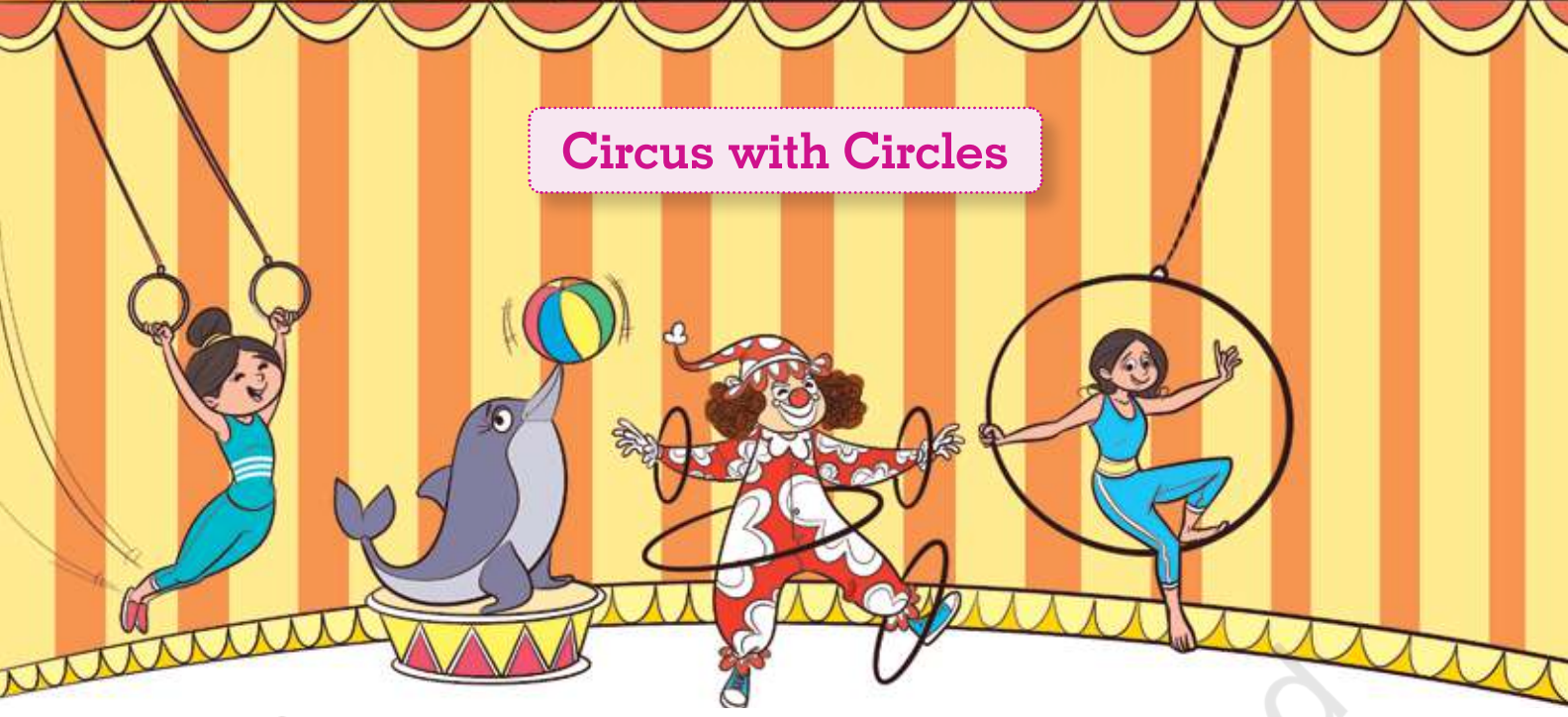


4. Move two matchsticks to turn the one triangle into two triangles.

Teacher's Note: Paper folding and cutting to be used to create different types of triangles.

Students should be encouraged to build triangles with sticks and clay.

Circus with Circles



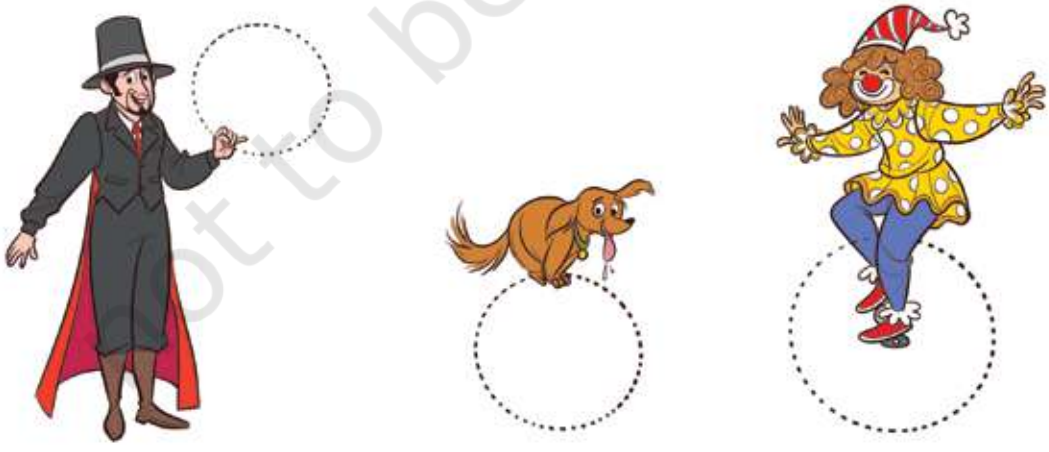
Let us Discuss

1. Have you been to a circus?
2. What does a circle look like? How is a circle different from a rectangle?

Let us Do

1. Name some objects that are like circles.

2. Draw colourful circles to complete the circus scene.



3. Draw circles by tracing bottle caps, bangles, and rings in your notebook.

Children are playing a game. They have made a circle on the ground.

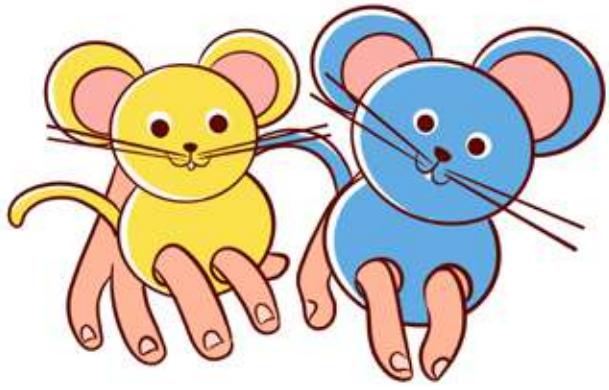
Have you played any game where you need to draw a circle? _____

Try to make a
circle on the playground.

Let us take a paper plate and fold it in half the same ways as the children did.

The point where the lines meet is the center of the circle.

Make some puppets using circular shapes and play with them.



Let us Do

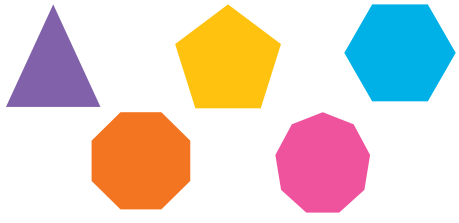
1. Look at these two shapes and discuss their similarities and differences. Tick ✓ the appropriate word.

Both the square and the triangle have straight edges.

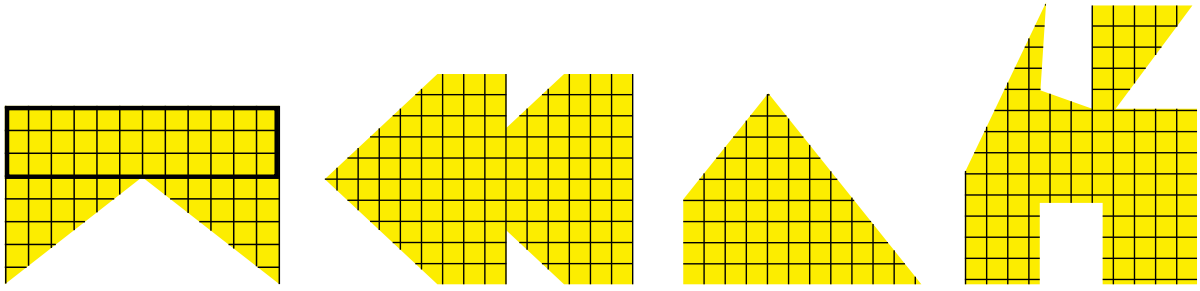
a. Their corners are: same ◯ different ◯

b. Number of sides is: same ◯ different ◯

2. Choose any pair of shapes. Share the similarities and differences in these shapes with your friends.



3. Find the largest rectangle in these shapes.

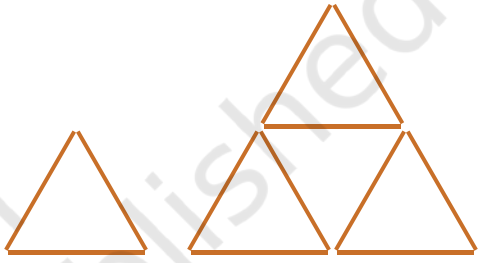


4. I made one triangle. Then I made another row of triangles.

How many triangles are there in the second figure?

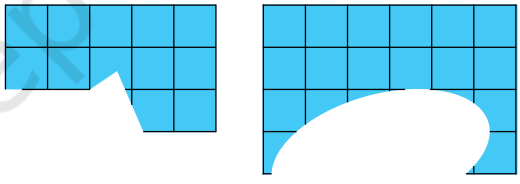
_____

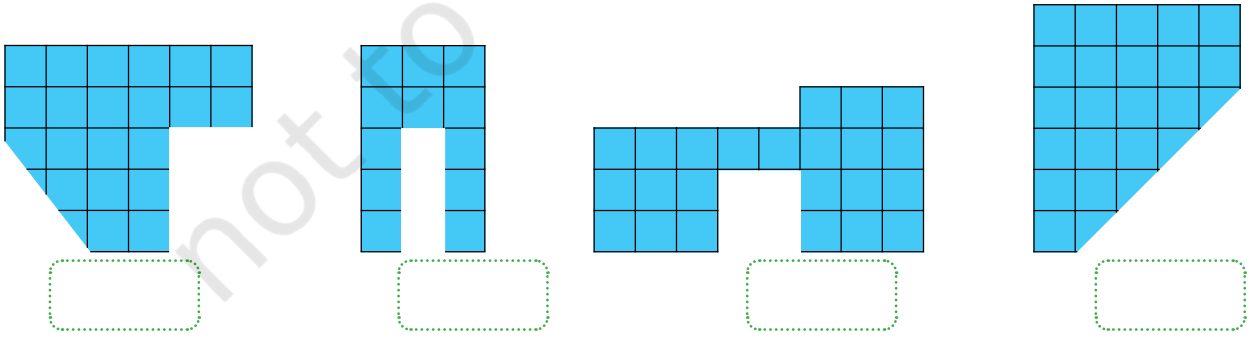
If I make one more row, how many triangles will be there in the third figure? _____



5. Here are some rectangles that are torn. How many square pieces have been torn from each shape?

_____



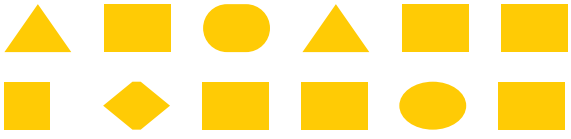


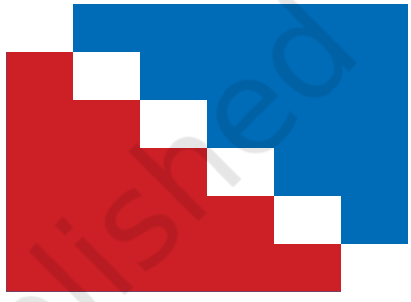
Teacher's Note: Children can play 'Find my rectangle game':
Use dot paper. One child marks 2 opposite vertices of a rectangle on the dot paper. The second child has to complete the rectangle shape(s).

6. Each of these shapes can be the odd one out.

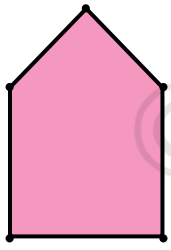
How is each one odd? Discuss.

7. To complete the rectangle, tick ✓ the appropriate shapes from the left side to fill the gaps in the shape on the right side.

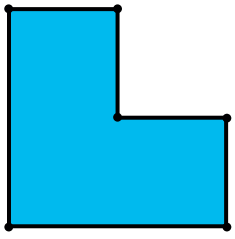




8. Draw two lines to split the shape into three triangles.



9. Draw one line to split the shape into 3 triangles.



10. Make the following shapes with different sizes and orientations (angular positions) in your notebook.

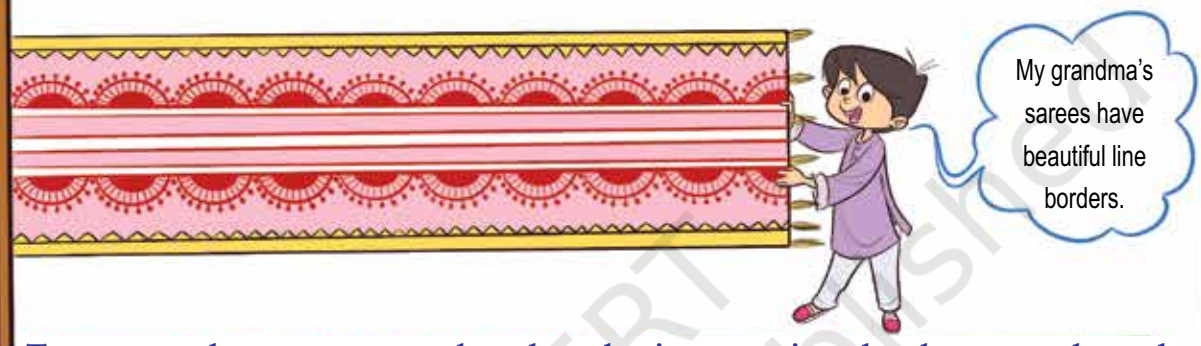
(a) Triangle

(b) Rectangle

(c) Circle

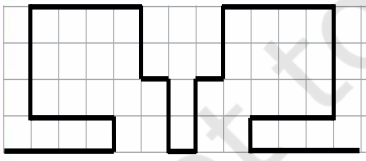
(d) Other shape

Doors-dots-lines



Try to make your own border designs using both curved and straight lines.

Continue the following line pattern.



Tangram

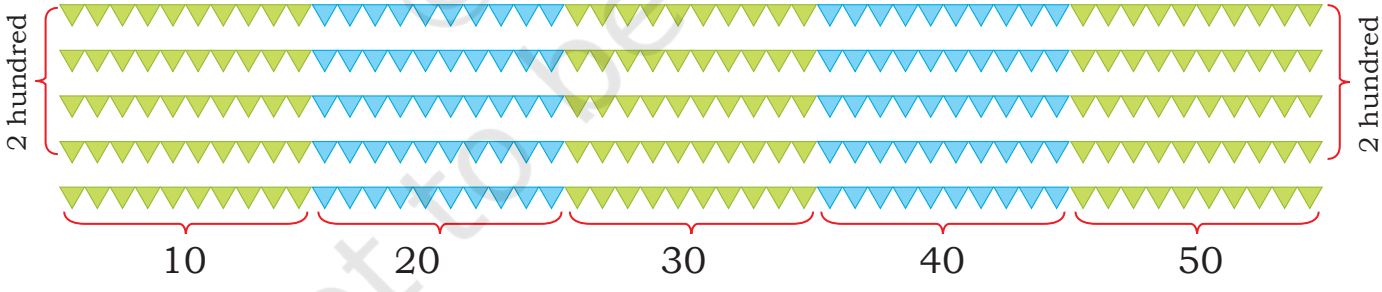
Use the pieces from the tangram puzzle given in the end of the book. Can you create these shapes using some of the pieces?

6 House of Hundreds – I

0333CH06

Ajji, Teji and Jojo have come to the mela. Guess the number of 'triangular *torans*'.

Now find out how many there are.

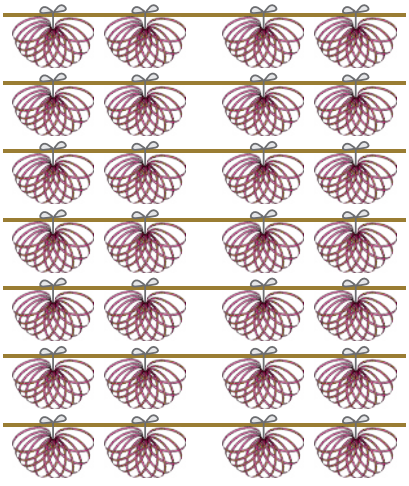


How many triangles are there in a line of triangular *toran*? ☐

Try counting all the triangles.

Total triangle: 50 more than 200, which is 250.

Teacher's Note: Help children to count objects beyond 200 and show how the counting can be done as earlier using the same number names.



Guess how many bangles there are. ☐

Try counting the total number of bangles.

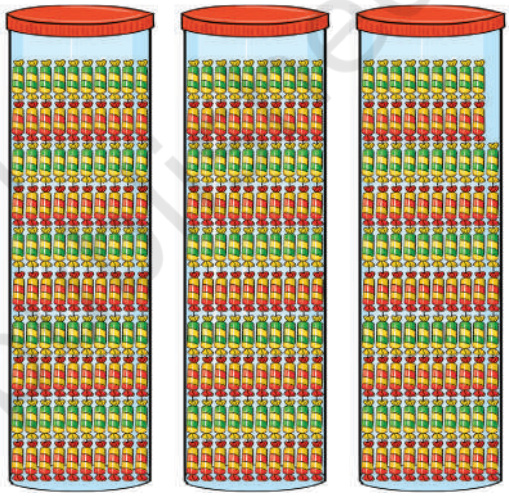
See how Teji is counting.

Total bangles: 200 and 80 more is 280.

Bangles! Let's count.
10, 20, 30, ... 100, 110,
120 ... 200, 210, ...
270, 271, 272 ... 279, 280

Guess how many toffees there are in the boxes. ☐

Count and check. ☐



These are lots of toffees!
Let's count. 10, 20, 30,...
100, 110, 120, ...190, 200,
210, ...290, 291, 292,
293, ..., 298

Jojo has 2 toffees in his hand.

How many toffees are there altogether? ☐

298 and one more is 299;
299 and one more is 300.

298 + 1 = 299

299 + 1 = 300

How many more triangles to make 300? ☐

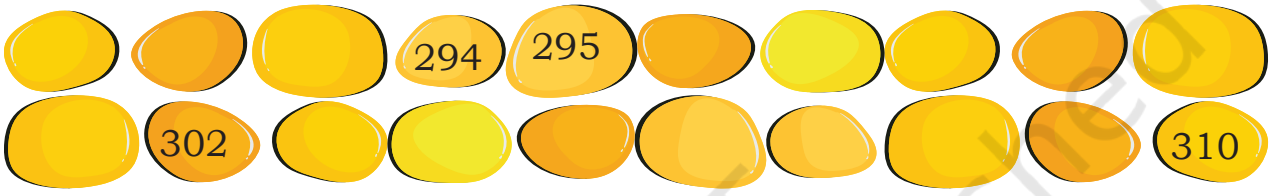
How many bangles less than 300? ☐

Which is more: bangles or triangles?

Let us Do

1. Jojo is jumping on a tiled path inside the mela.
Fill in the empty tiles with numbers.

2. Fill in the blanks with the correct numbers.



3. 

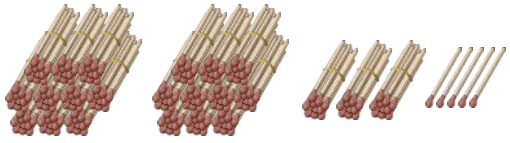
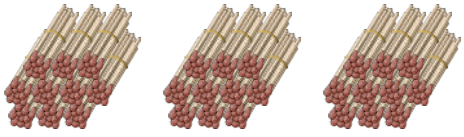
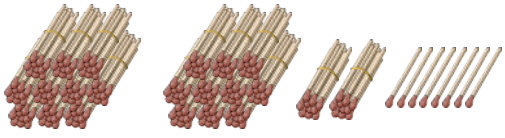
4. 

5. Ants have found food on the ground. Guess how many ants there are. Count and check.

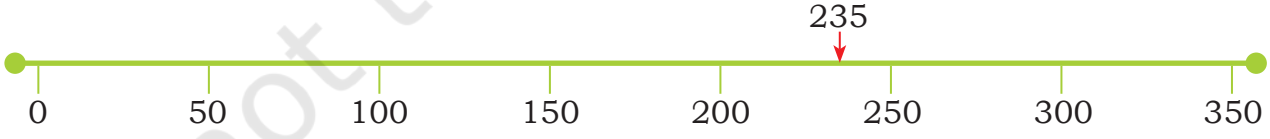
Teacher's Note: Ask why children got different answers and how one can get better at counting. The differences in the answers should be used as an opportunity to show why groups of 10 are more effective in counting correctly even large numbers. Help children arrive at a strategy to count correctly.

Teji and Jojo have learnt to write numbers with the help of matchstick bundles. They can also write number sentences in more than one way.

6. Fill in the blanks appropriately.

Matchsticks	Number	Number sentence
	235	200 and 35 more (200 + 35) 15 less than 250 (250 – 15)
		
		
		300 and 16 more
	109	

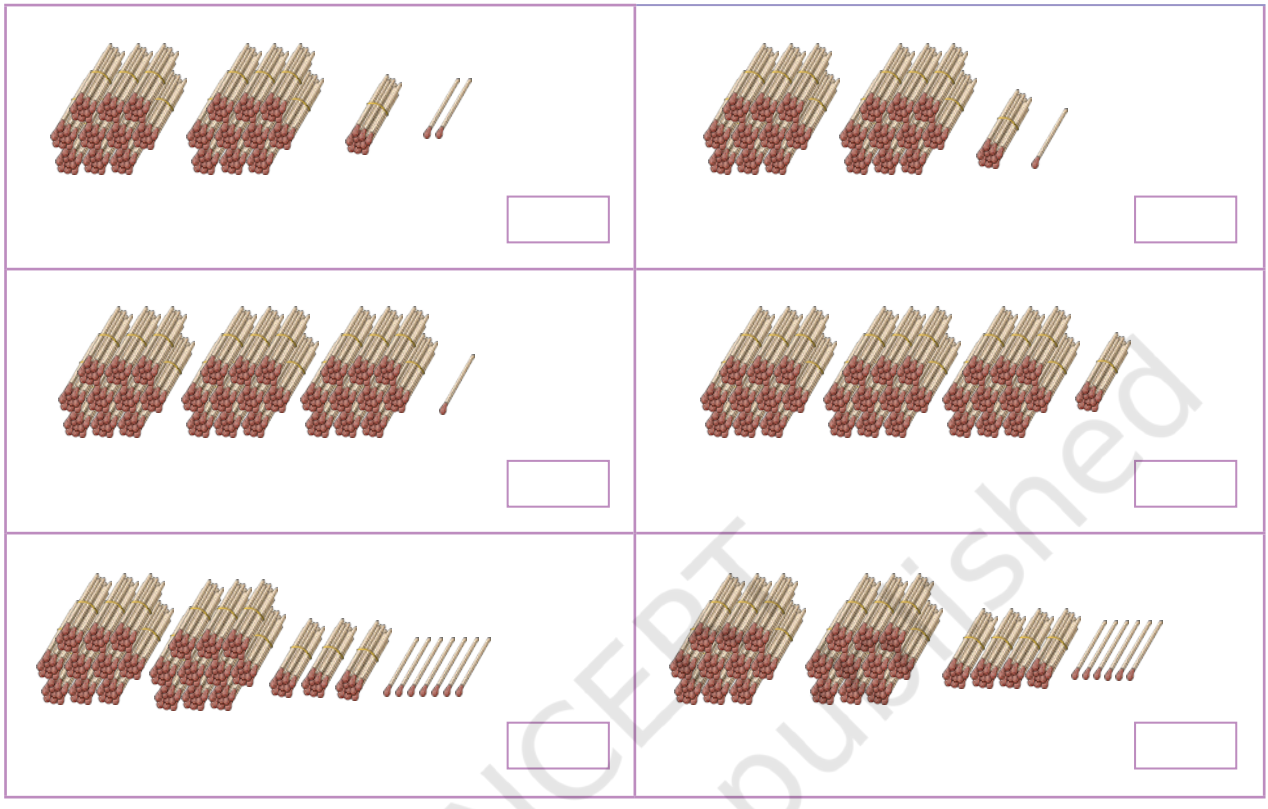
7. Place the numbers given above on the number line.



235 lies between 200 and 250.

Teacher's Note: Ask children to make large numbers using matchsticks or any other readily available material at home and bring to school.

8. Look at the pictures and write the corresponding numbers.



9. Make the number slider as shown in the picture. Increase or decrease the number as given below:

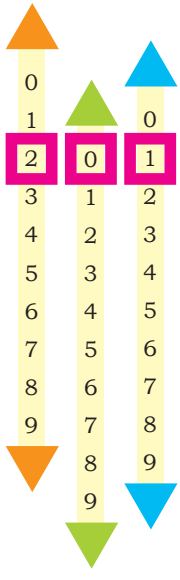
a. 285 – increase the number by one

b. 147 – increase the number by ten

c. 367 – decrease the number by 2

d. 289 – decrease the number by 10

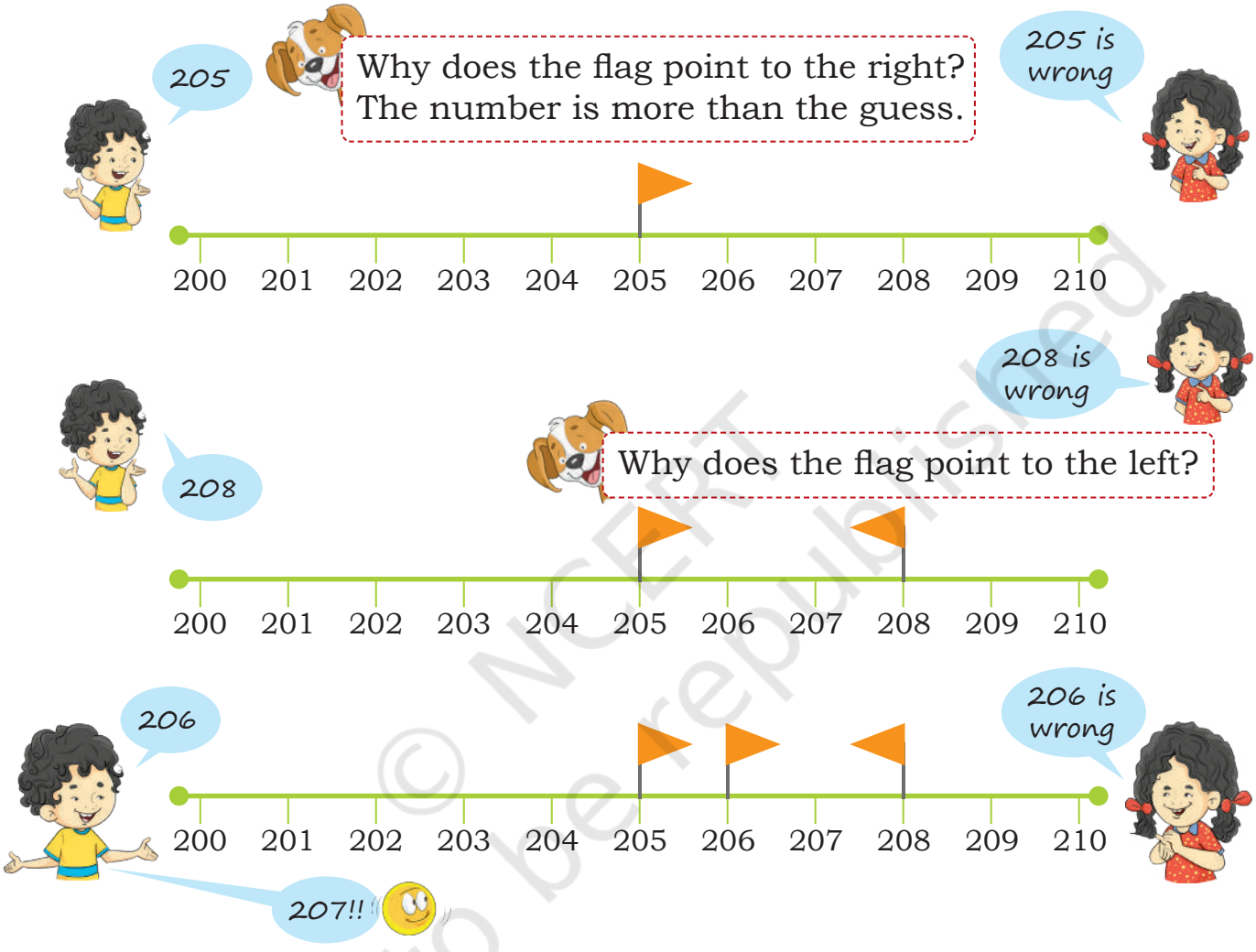
e. 290 – increase the number by 20



Teacher's Note: Teacher to make the TLM and play with children.

Let us Play

Flag game: Let us play a guessing game. Teji has thought of a number between 200 and 210. Jojo has to guess it.



Now you try and play with your friends and guess the number.

Teacher's Note: Play this game on the board with children; later, children can play in pairs or small groups in their notebooks. The teacher can also make the game more exciting by changing the range of the numbers and restricting the number of guesses allowed.

Magical count

Write down any number name. Count the number of letters in that number name and write the name of that new number down. Keep repeating — what happens?

235

Two hundred and Thirty five — 23 letters

Twenty-three — 11 letters

Eleven — 6 letters

Six — 3 letters

Three — 5 letters

Five — 4 letters

Four

187

One hundred and eighty seven

204

Two hundred and four

Numbers on a line

Tell Teji, Jojo and Bholu what will be the next hundred number. Write it on the number line below.
Can you show the number using matchsticks?

One hundred, ...two hundred, ...three hundred, ...and ??? FOUR HUNDRED

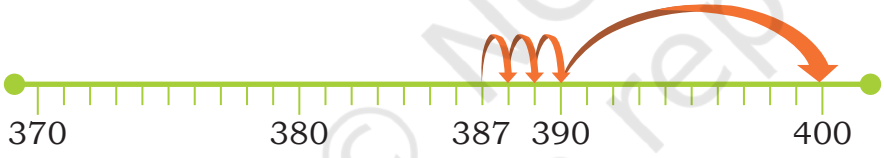
Let us Do

Teji and Jojo are trying to put their numbers on the following number lines.

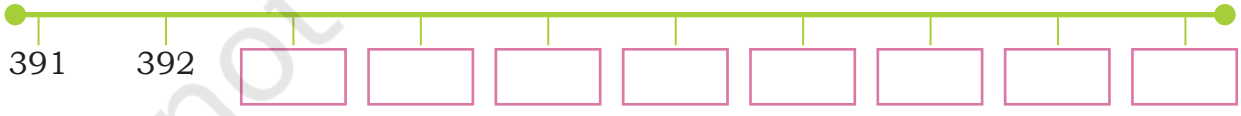
1. Locate 216, 243, 257 on the number line below.

2. Locate 329, 332, 337, 375 and 387 on the number line below.

3. Tell how far is 387 from 400: .....



4. Which is more: 393 or 400? Use a number line and show. Fill the numbers on the number line below and show by jumping how far 393 is from 400.



Teacher's Note: Support children to pay attention to the different jumps required in the above number lines. Teacher to also support children to understand quantities that the numbers represent using matchstick bundles or any other similar material.

5. Teji and Jojo are hungry after all the running around. They go to Farooq Chacha's Sweet Shop.

a. How many pieces of *Mysore pak* are in one tray? .....

b. How many pieces of *Mysore pak* are there in total? .....

c. How many laddoos does chacha have in the trays? .....

d. How many *dhoklas* does chacha have? .....

e. Chacha is going to fill the tray with more laddoos. How many more laddoos will make the tray full? .....

f. How many total laddoos will he have after the last tray is full? .....

g. Mark the following numbers on the number line below: 423, 487, 438, 476.

Mark Five Hundred (500) on this number line!

413 423 433 443 453 463 473 483 493

Let us Do

1. Teji and Jojo saw a big apartment.

Find the house numbers of the shaded houses without counting. Share your strategies.

Fill in the shaded boxes with the correct house numbers.

Teacher's Note: Let children fill the first blank cell by counting, but encourage them to look for patterns while filling in the rest.

2. Arvind Dada has to deliver sweets from Farooq chacha's shop to different houses. Colour the houses to which he has to deliver sweets.

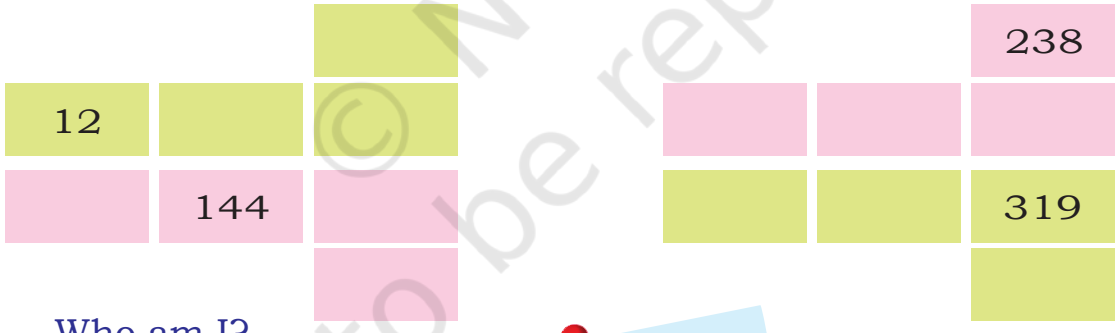
The house numbers are:

209, 228, 242, 258, 267, 276, 290, 315, 346, 367, 389, 395.

3. Write the floor and column number for each of the following houses.

House number	Floor	Column
13	1st	3
67		
106		
159		
192		
231		
245		
328		
380		
399		

4. Find the following house numbers from the building and write the appropriate house numbers in the blank spaces. What do you notice? Discuss how the house numbers change when moving up and down and left to right.



5. Who am I?

I have digits 9, 1 and 5.
I am less than 200.
I have 9 ones.
Which number am I? .....

I am a 3-digit number. I have only digits 4 and 0.
Which number am I? .....

I am greater than 300 but less than 400.
I have no tens.
My ones and hundreds digits are the same.
Which number am I? .....

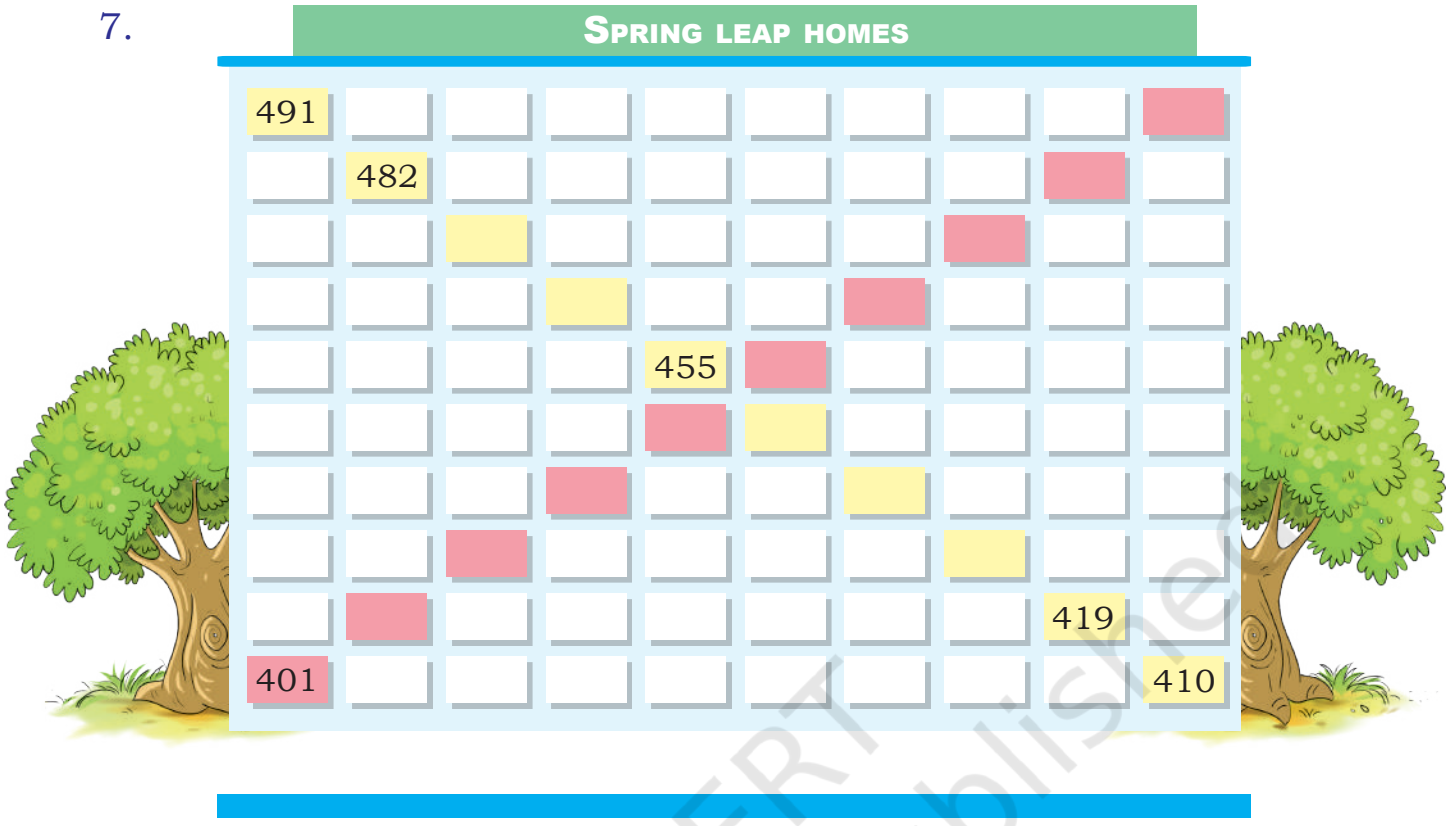
Arvind Dada packs sweets in boxes of 100 (H), 10 (T) and as packets of loose sweets (O). The number of sweets for every house is the same as the house number.

6. Draw sweets for each of the following house numbers.

House numbers	Draw sweet boxes	Types of boxes and packets	Number sentence
211	H  T  O 	2 H + 1 T + 1 O	200 + 10 +1
309			
275			
423			
365			
343			
458			
562			
606			
800			

Teacher's Note: Children are supposed to show the sweets using Dienes blocks. One set is provided at the end of the book. These can be easily made using square math notebooks. Children can make a model using Dienes blocks before drawing.

7.



a. Write the house numbers of the yellow and pink houses.

b. Write the pattern you see in these numbers.

.....

.....

8. Arvind dada wants to pack small boxes of 10 in a big box of 100.

a. How many boxes of 10 can he fit in a box of 100? .....

b. How many boxes of 10 can he fit in two boxes of 100? .....

c. How many boxes of 10 can he fit in four boxes of 100? .....

d. How many boxes of 10 will he find if he opens a box of 100?

.....

Teacher's Note: Teacher can encourage children to identify patterns in the numbers, some of the digits, how the digits change, etc. Also, help children find the relationships among the 100's box, 10's box and 1's box.

9. Number hunt

Write the numbers between 200 and 300 that have 5 as a digit. Is 245 one such number? Write the other numbers.

.....

.....

Let us Play

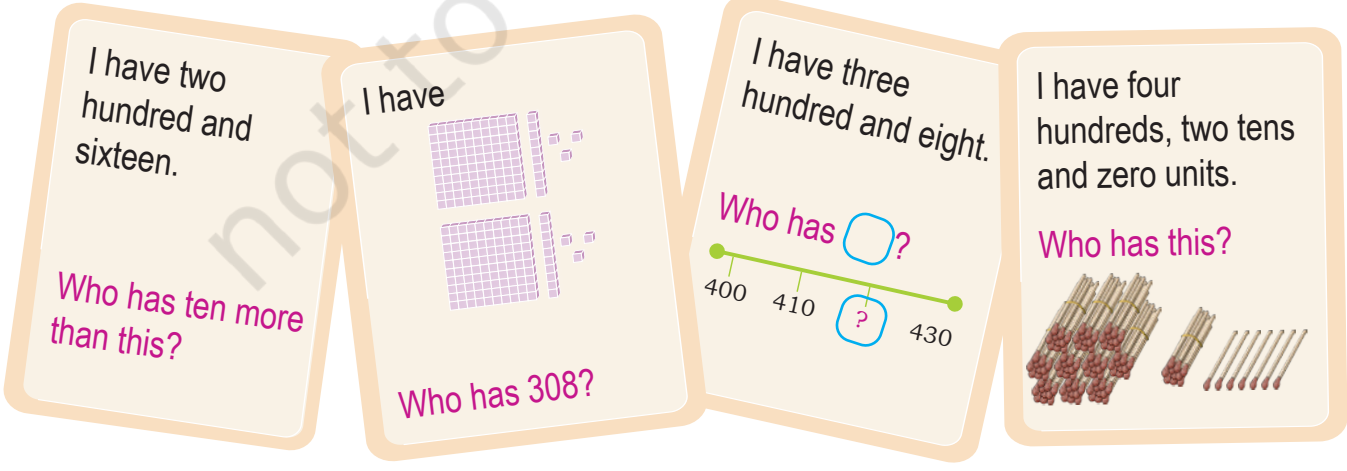
Do you remember this game? Let us play it again. We will record the actions in the table below. One is done for you.

Hundreds	Tens	Ones	Number
Clap Clap	Snap	Pat	211

Show and tell

Create a chain of cards such that every next card answers the question of the previous card. Distribute these cards among the children in the class. A child reads aloud their card and the other child having the answer identifies himself/herself. The game ends when every child has answered a question using their card.

One example is given below:



Let us compare who has more laddoos and show it using the sign more than (>) or less than (<) appropriately.

487 laddoos is more than 423 laddoos

423 laddoos is less than 487 laddoos

487 > 423

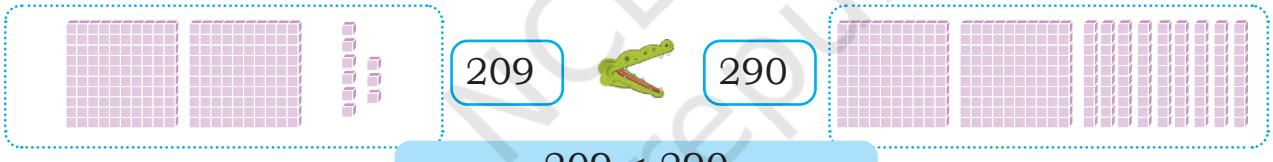
Open mouth points towards the bigger number

423 < 487

Now compare 321 and 231. 3 hundreds are more than 2 hundreds. Do the other digits in the numbers matter here? No. So, 321 is more than (>) 231.

321 > 231

Let us take another example. We are comparing 209 with 290. Both numbers have two hundreds. But 9 ones are less than 9 tens. So, 209 is less than (<) 290.

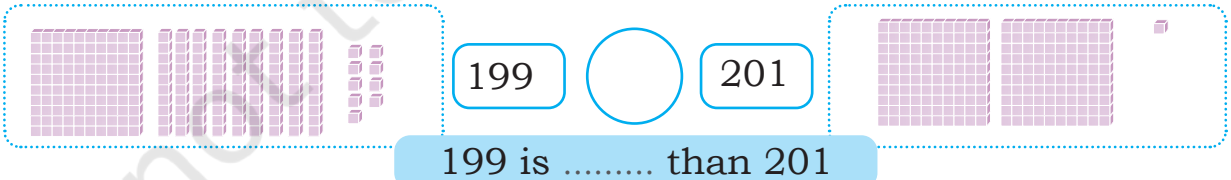


209 < 290

Let us Do

1. Compare the following numbers and use the signs >, < appropriately.

(a)

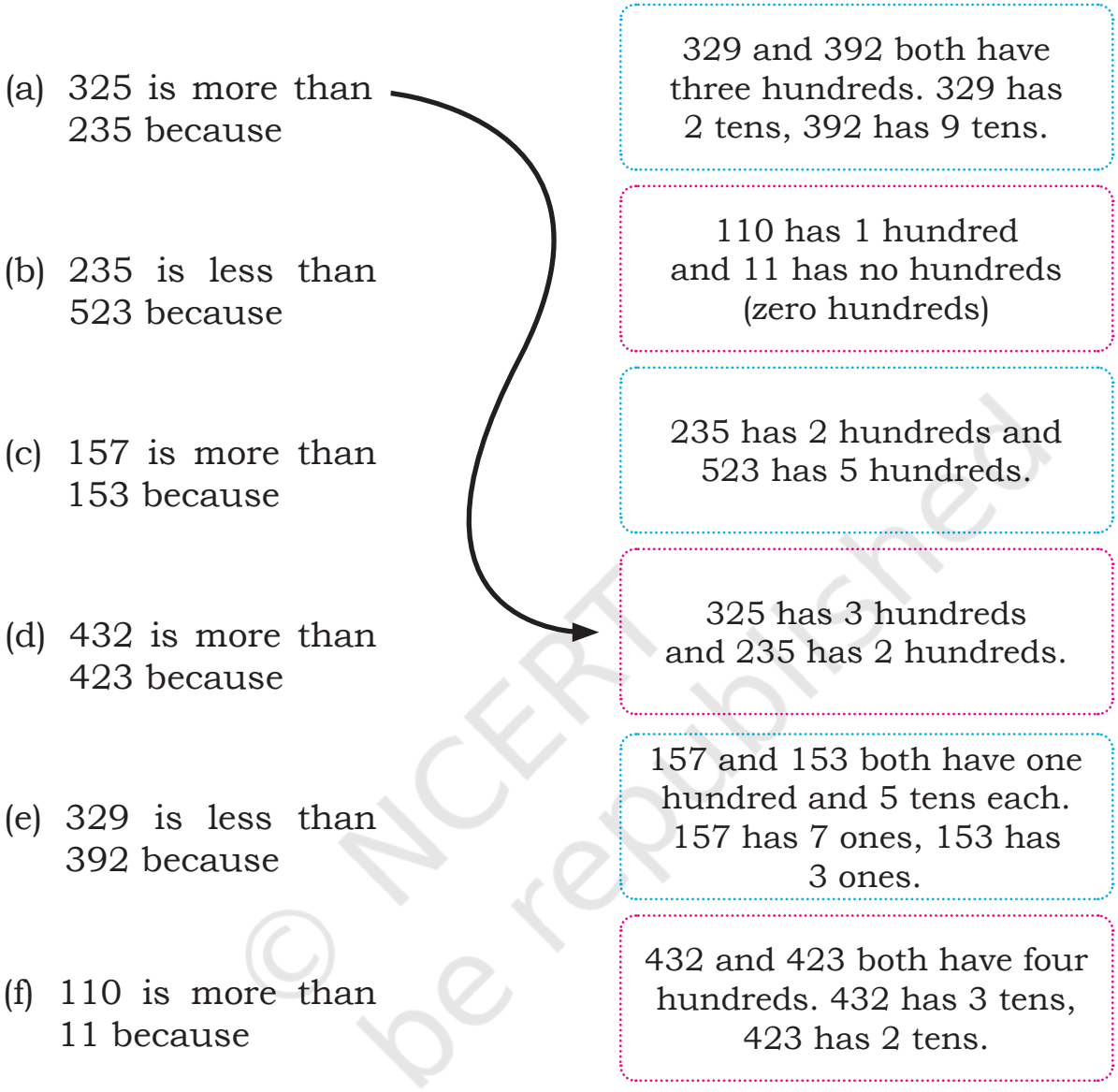


199 is ..... than 201

(b)

285 is ..... than 275

2. Think and match the following.



3. Circle the smallest number in each row:

(a) 374, 473, 347, 437

(b) 239, 123, 321, 456

4. Circle the greatest number in each row:

(a) 466, 437, 439, 447, 483

(b) 464, 387, 123, 256, 348

5. Make 3-digit numbers using 3, 2, and 4 without repeating any digit and colour the greatest number with red and smallest number with yellow.

6. Now make more 3-digit numbers using 3, 2 and 4 where you may repeat the digits. Colour the greatest number with red and smallest number with yellow.

7. (a) Arrange the following numbers from smallest to biggest.

456, 389, 207, 99, 110

.....

(b) Arrange the following numbers from biggest to smallest.

67, 376, 294, 249, 494

.....

Teacher's Note: While comparing two numbers, help children focus on the quantities that the numbers represent. Use Dienes block representation to help them see that 1 H is more than 1 T and 1 O. Similarly, 1 T is more than 1 O.

7 Raksha Bandhan

0333CH07

Tomorrow is Gopal's favourite festival.

Gopal and Dhara are very excited. Their beloved Atya (father's sister) is visiting them today. They have cleaned and decorated their house.

Carefully observe Gopal's house.

What do you find interesting here?

.....

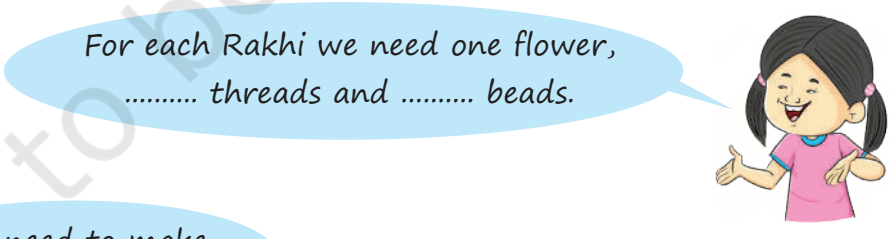
Find and count the number of each of these objects and write.

Leaves ◯ Glasses ◯ Pomegranate ◯ Flowers ◯

Celebration begins!

Dhara's mother has bought some material for the festival. Guess the festival they are preparing for.

Let's make Rakhis



How many threads, flowers and beads do they need?

Each Rakhi uses 1 flower. We need to make 5 Rakhis.

Dhara takes

1 + 1 + 1 + 1 + 1 = ...

This can also be said as 5 times 1

or 5 × 1 = 5

For 5 *Rakhis*, we need ..... flowers.

Each Rakhi uses 2 threads. We need to make 5 Rakhis.

Dhara takes

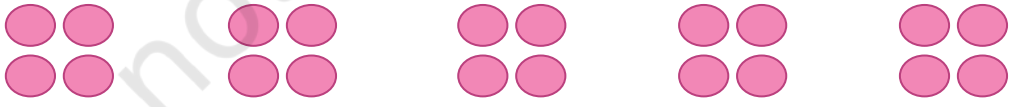
2 + 2 + 2 + 2 + 2 = ...

or 5 times 2

or 5 × 2

For 5 *Rakhis*, we need ..... threads.

Each Rakhi uses 4 beads. We need to make 5 Rakhis.



4 + 4 + 4 + 4 + 4 = ...

or 5 times 4

or 5 × 4

For 5 *Rakhis*, we need ..... beads.

Try it Out!

For making 10 such *Rakhis*, we need ..... flowers, ... threads and ..... beads.

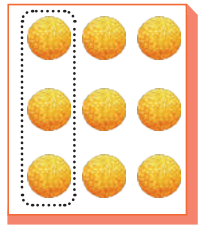
There are 30 flowers, 30 threads and 30 beads. How many *Rakhis* can you make with this material? Use drawings if needed to find out the answer.

FUN ACTIVITY

Try making a colourful *Rakhi* at your home. Show it in the class.

Jagannath Sweet Shop

How would we count the laddoos in this box?

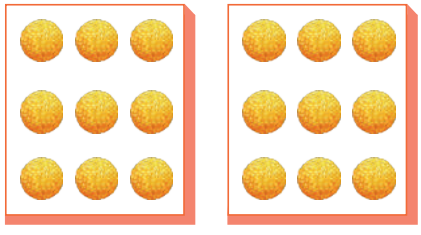


3 + 3 + 3 = ...

or, three times three equals 9

or, 3 × 3 = ...

There are ..... laddoos in this box.



9 + 9 = 18

Two times nine equals 18.

2 × 9 = 18

There are 18 laddoos.

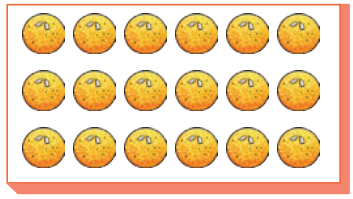
3 + 3 + 3 + 3 + 3 + 3 = ...

Or, 6 times 3 equals 18.

Or, 6 × 3 = 18

There are 18 laddoos.

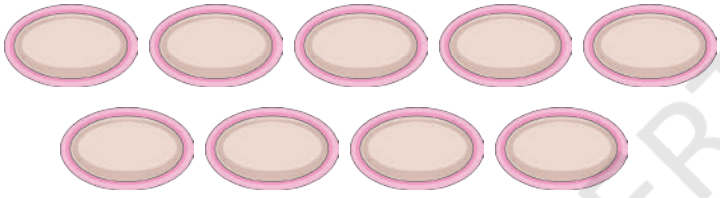
After Atya and children come, we will be 9 people in the house. When we distribute 18 laddoos equally to all, how many will each of us get?

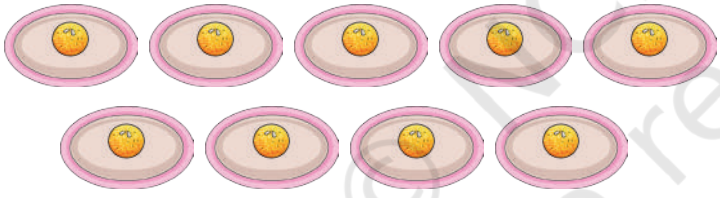


Can you help Dhara find this out?

Imagine yourself to be Dhara. Distribute 18 laddoos equally among nine of your friends.

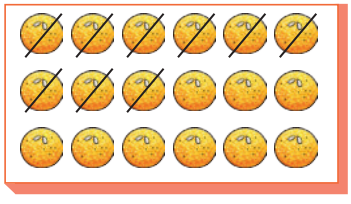
Let's see how Dhara has done it.

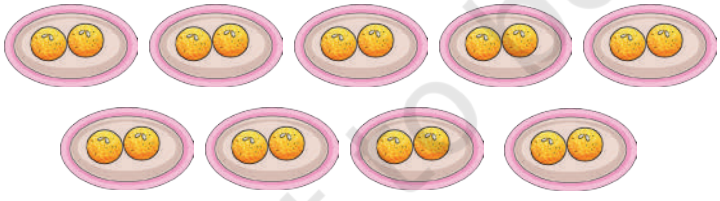




Items left:

.....





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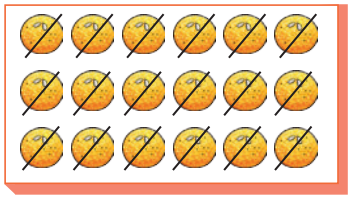


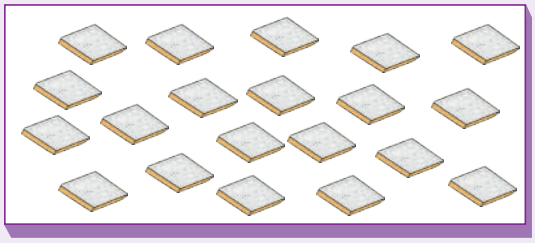
When 18 laddoos are shared equally among nine people, each of them gets ..... laddoos.

18 equally shared by 9 is 2 each.

Or, 18 ÷ 9 = 2 laddoos.

Try it Out!

Look at the figure carefully. Estimate the number of *kaju katlis*.



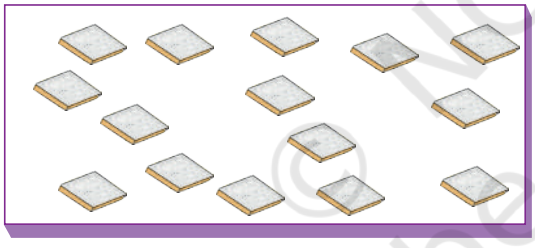
Count and write the number of *kaju katlis*.

Total number of *kaju katlis* = ...

Distribute all *kaju katlis* equally among 5 people. You can do it by drawing *kaju katlis* on the plates. How many will each get?

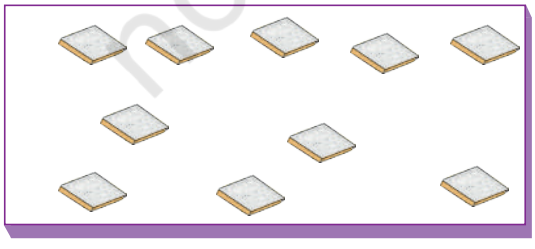
Compare your work with Dhara's work.

1 1 1 1 1



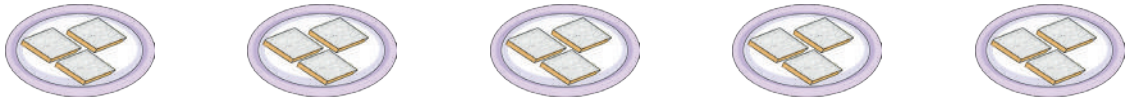
	2	0
–		5
Items left:		

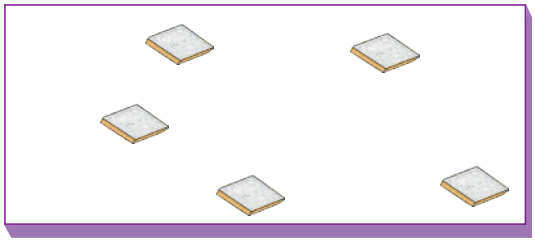
1 + 1 1 + 1 1 + 1 1 + 1 1 + 1



	2	0
–		5
	1	5
–		5
Items left:	1	0

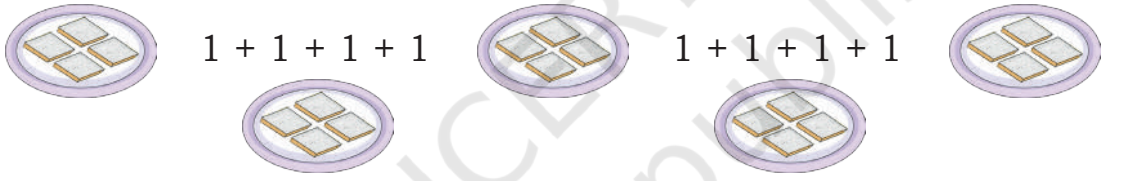
1 + 1 + 1 | 1 + 1 + 1 | 1 + 1 + 1 | 1 + 1 + 1 | 1 + 1 + 1





	2	0
–		5
	1	5
–		5
	1	0
–		5
Items left:		5

1 + 1 + 1 + 1 | 1 + 1 + 1 + 1 | 1 + 1 + 1 + 1 | 1 + 1 + 1 + 1 | 1 + 1 + 1 + 1



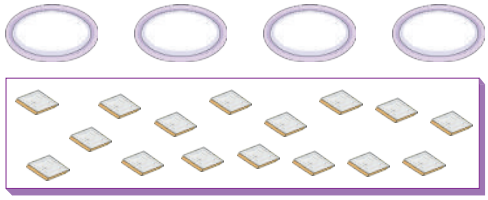
	2	0
–		5
	1	5
–		5
	1	0
–		5
		5
–		5
Items left:		0

20 equally shared by 5 is 4 each.

20 ÷ 5 = 4

Let us Do

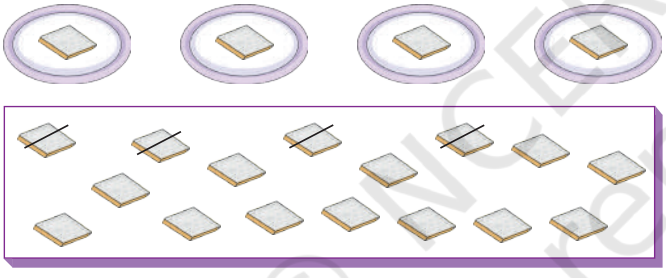
1. Distribute all the *kaju katlis* equally among 4 people. How many *kaju katlis* will each get?

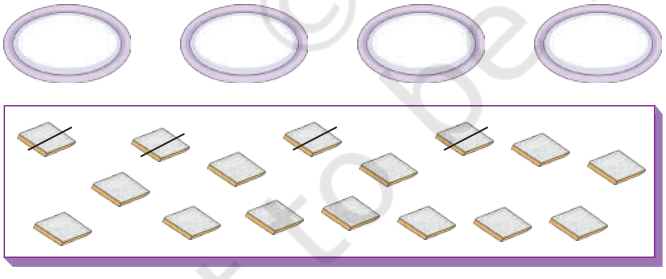


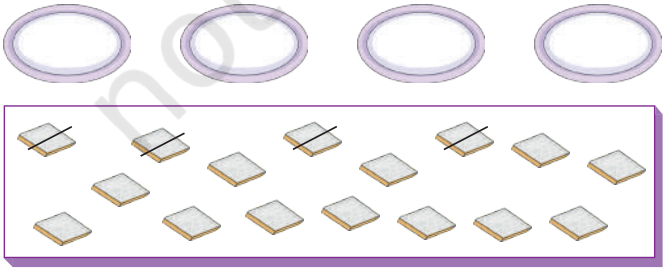
Let us do this in the picture given below. Strike out the *kaju katlis* from the tray and draw them in the plates.

The first step has been done for you.

1 1 1 1







	1	6
–		4

Items left: _____

	1	2
–		

Items left: _____

		8
–		

Items left: _____

		4
–		

Items left: _____

Each will get ..... *kaju katlis*.

16 ÷ 4 = ...

2. Distribute all the 15 *pedas* in plates equally among 5 people. How many *pedas* will each get?

Total *pedas*:

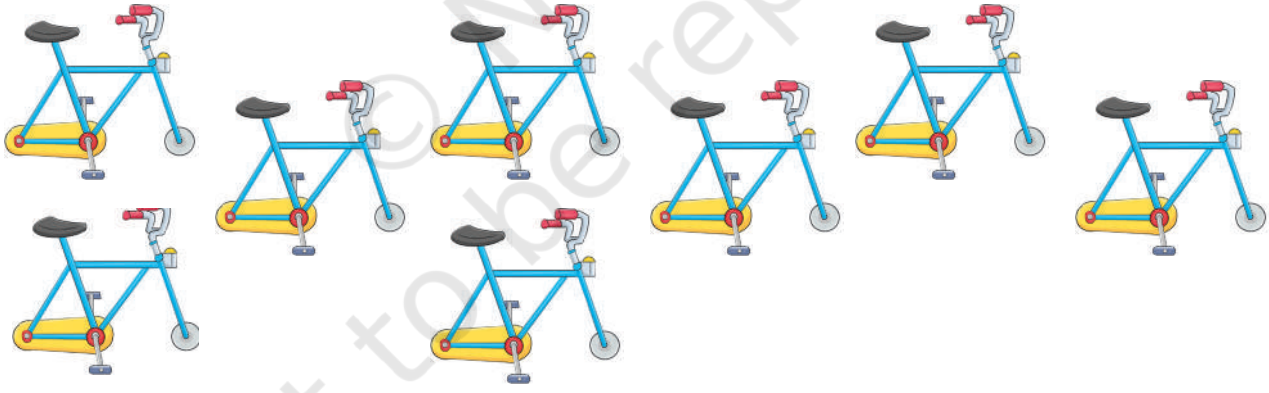
	1	5
–		5
–		
–		

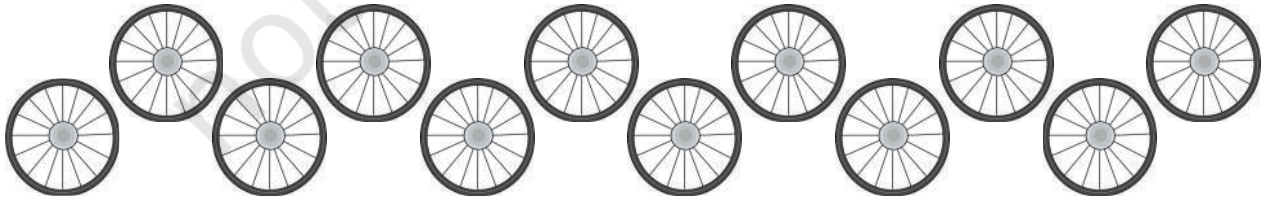
15 equally shared by 5 is ..... each.

15 ÷ 5 = ...

Let us Think

1. Each cycle needs 2 wheels. How many cycles can be fitted with 12 wheels?





12 equally divided by 2 is ..... .

12 ÷ 2 = ...

2. Look at the picture carefully. Count the number of jalebis.

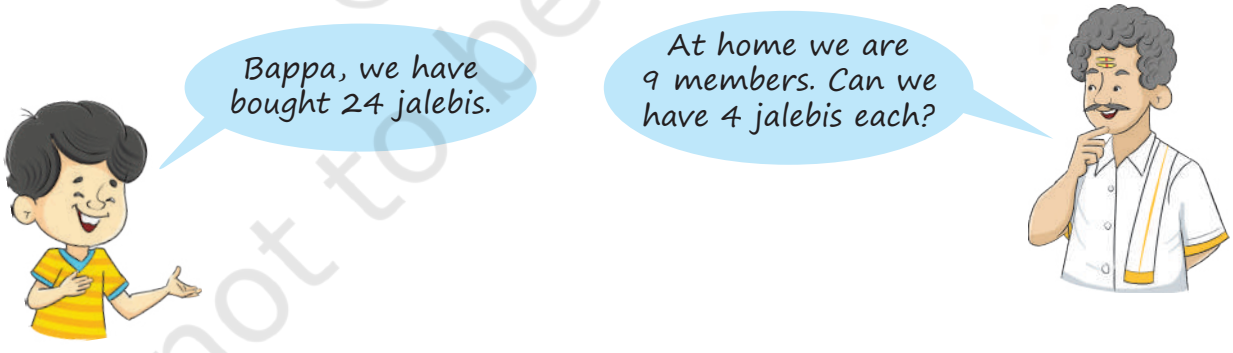
There are ..... jalebis.

How did you count? Discuss with your friends.

Counting in groups, we see there are six groups of four jalebis each,

or, 4 + 4 + 4 + 4 + 4 + 4 = ...

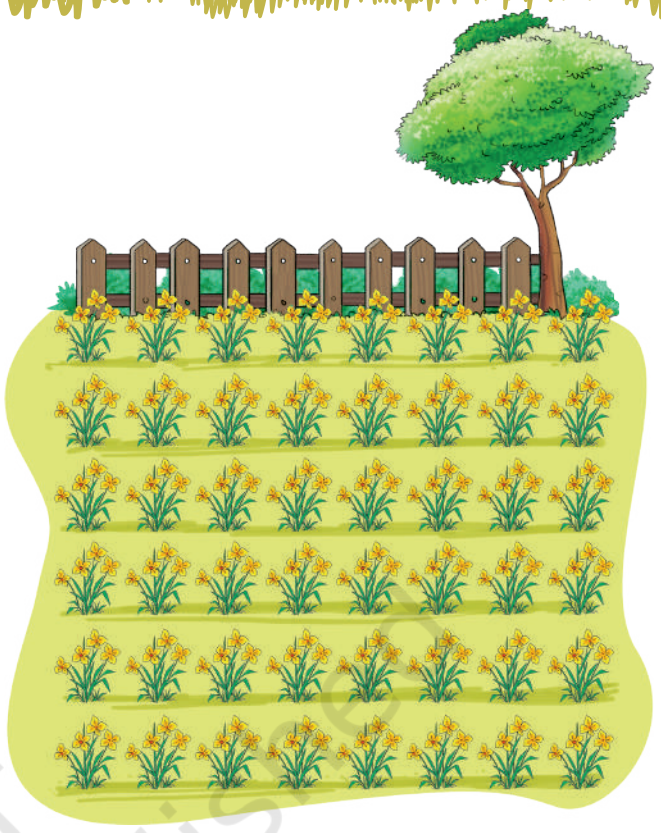
or ..... × 4 = ... jalebis.



Are there enough jalebis for everyone in Dhara's family to have four each? Share your thoughts in the class.

How many jalebis should Dhara buy so that everyone can get four each?

Plants in the garden



Dhara and Gopal see a flower bed on their way home.

Dhara: The number of plants is

6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 = ...

8 times 6 =

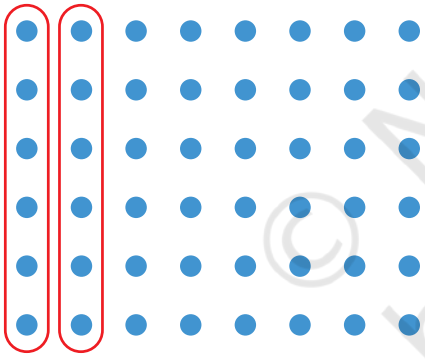
= 8 × 6 =

Gopal: No, it is 8 + 8 + 8 + 8 + 8 + 8

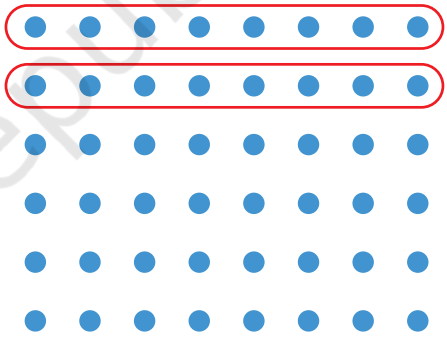
= 6 × 8

Who do you think is correct?

Different ways of grouping.



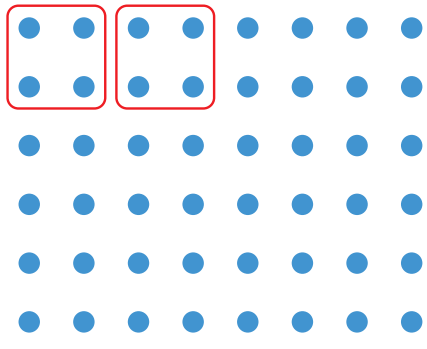
Dhara
8 × 6



Dhara
6 × 8

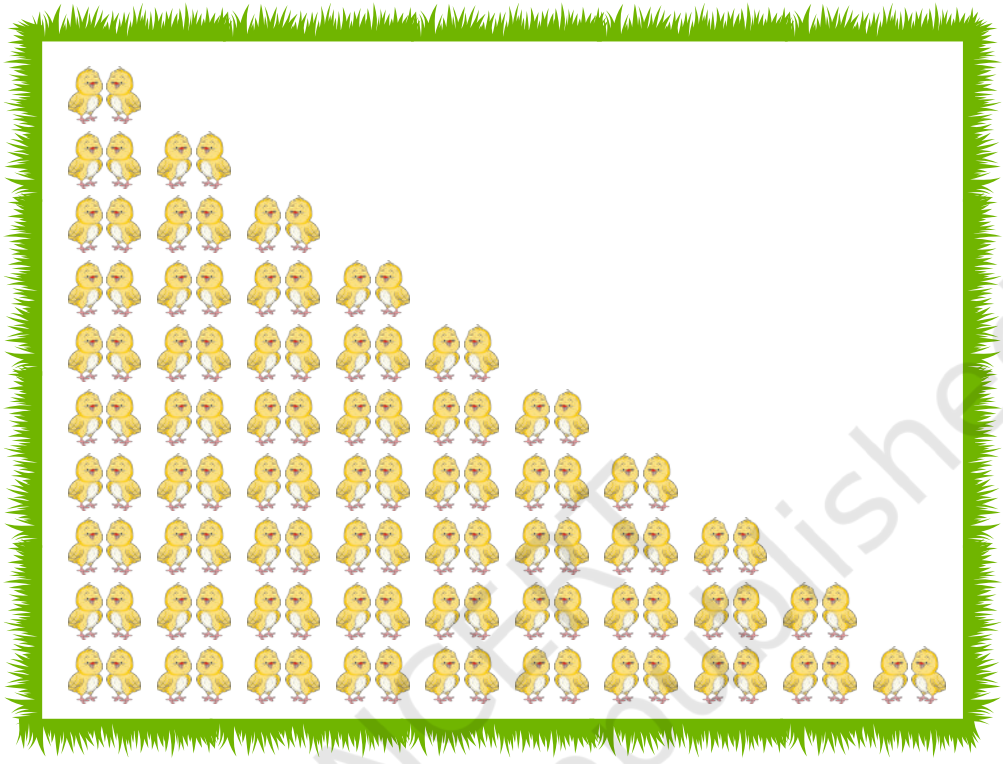
Can you complete this equal grouping and write it as multiplication?

Can you find more equal groups of different sizes? Draw them and write as multiplication.



Visit to a Farm

The next day the children take their Appa and cousins to the farm. They see a lot of chickens there. Let us count chickens in the farm!

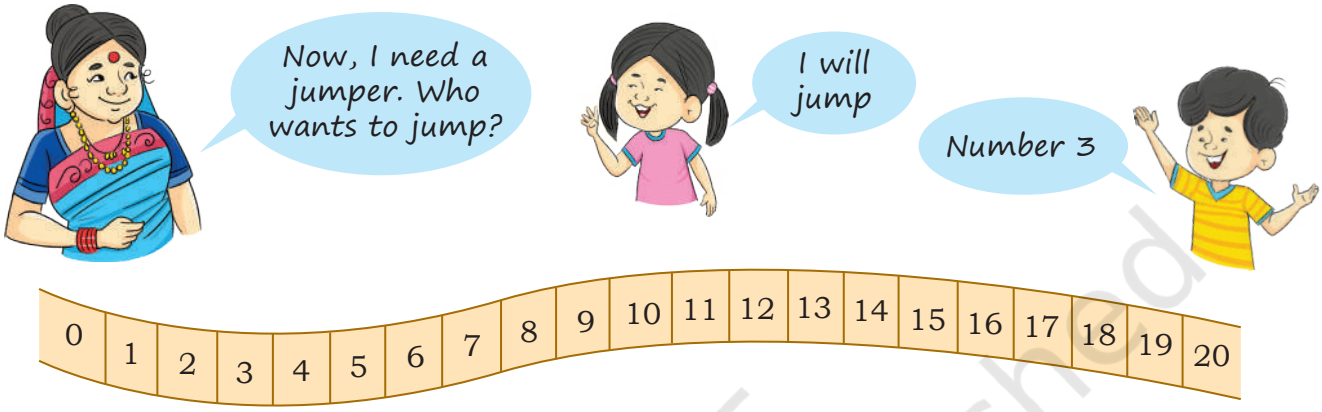


1 times 2	is 2	or 1 × 2	= 2
2 times 2	is 4	or 2 × 2	= 4
3 times 2	is 6	or 3 × 2	= 6
4 times 2	is	or 4 × 2	= .....
5 times 2	is	or 5 × 2	= .....
6 times 2	is	or 6 × 2	= .....
..... times 2	is	or ..... × 2	= .....
..... times	is	or 8 × 2	= .....
..... times	is	or 9 × 2	= .....
..... times	is	or 10 × 2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

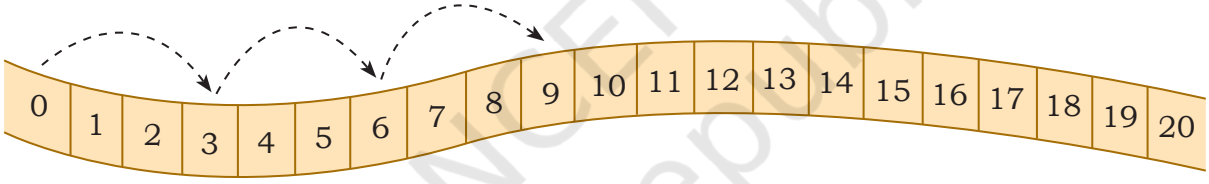
Skip Jumping Game

In the evening, the family goes to the playing field.

Atya draws a curvy number track on the ground with a stick. She asks Dhara to write numbers starting from 0.



Starting from 0, Dhara jumps to 3. From 3 she goes to 6. From 6 she goes to 9. Now continue to see how Dhara jumps after 9.



Dhara is SKIP JUMPING BY 3.

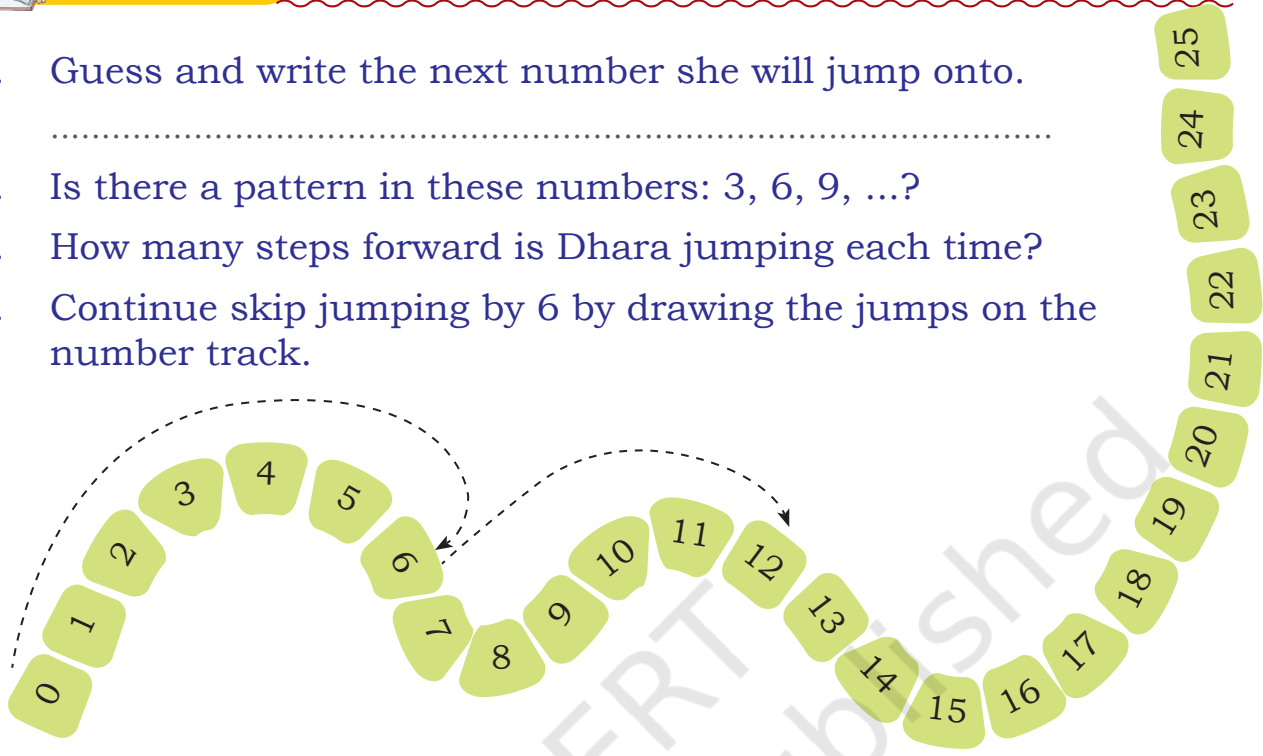
Number of jumps		Number reached
1 jump	→	3
2 jumps	→	3 + 3 = 6 = 2 x 3
3 jumps	→	3 + 3 + 3 = 9 = 3 x 3
4 jumps	→	.....
5 jumps	→	.....
6 jumps	→	.....
7 jumps	→	.....
8 jumps	→	.....
9 jumps	→	.....
10 jumps	→	.....

Let us Do

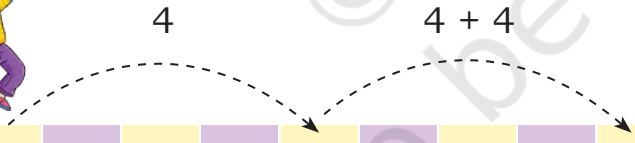
1. Guess and write the next number she will jump onto.

   .....

2. Is there a pattern in these numbers: 3, 6, 9, ...?
3. How many steps forward is Dhara jumping each time?
4. Continue skip jumping by 6 by drawing the jumps on the number track.

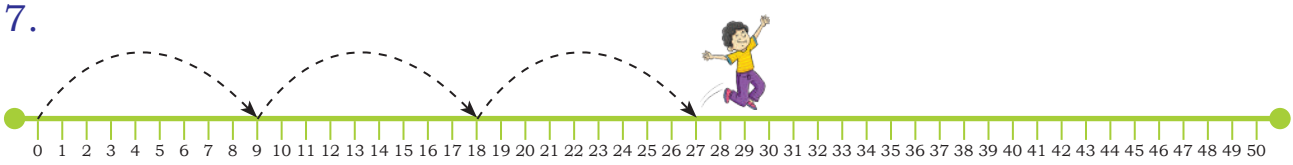


5. Can this skip jumping be used to form times-6 table? Write times-6 table in your notebook.
6. Is there repeated addition happening? Make times-4 table using repeated addition in the picture given below.



0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
		1 × 4				2 × 4									16
32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17
33															
34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49
															50

7.



Gopal is doing skip jumping of ..... steps.

After 27 he will jump on ....., ...

8. What times table can you construct from Gopal's jumps? Make it in your notebook.

9. Dhara also skip jumps. Gopal notes down the jumps but he misses the first few numbers.

 32, 40, 48, 56

By what numbers was Dhara skip jumping? Construct the times table of this number in your notebook.

Let us Play

Atya places a flower on 12.

Skip jump with equal steps to reach the flower.

No direct jumping to the flower is allowed.

The one who reaches the flower in the smallest number of jumps wins.

What skip jumping number will you choose? .....

Play this game with your friends by putting the flower on different numbers on the track. See who is able to reach in the minimum number of jumps.

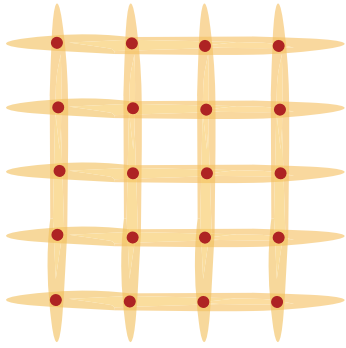
Are there numbers that can be reached only through skip jumping by 1? Find 3 such numbers.

Fun Way of Writing Tables

Mithu figures out another way of writing multiplication tables by drawing sticks! Do you see repeated addition in this?

Mithu had some sticks.
He arranged them like this:

He counted the red dots showing the intersection of sticks.

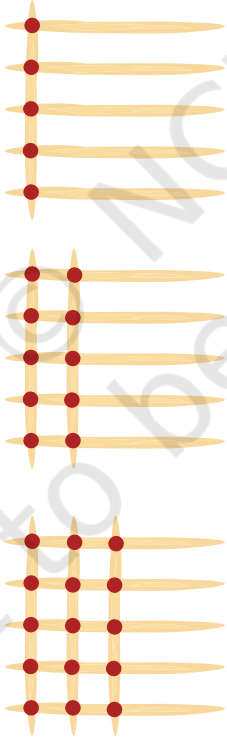


Let's try making a 5 times table with sticks.

1 times 5 = 5

2 times 5 = 10

3 times 5 = 15



1	×	5	=	5
2	×	5	=	10
3	×	5	=	15
4	×	5	=	
5	×	5	=	
6	×	5	=	
7	×	5	=	
8	×	5	=	
9	×	5	=	

Complete the times-5 table using sticks

Make times-6 to times-10 tables using the sticks method shown above.

Multiplication Tables

1 × 1 = 1	1 × 2 = 2	1 × 3 = 3	1 × 4 = 4	1 × 5 = 5
2 × 1 = 2	2 × 2 = 4	2 × 3 = 6	2 × 4 = 8	2 × 5 = 10
3 × 1 = 3	3 × 2 = 6	3 × 3 = 9	3 × 4 = 12	3 × 5 = 15
4 × 1 = 4	4 × 2 = 8	4 × 3 = 12	4 × 4 = 16	4 × 5 = 20
5 × 1 = 5	5 × 2 = 10	5 × 3 = 15	5 × 4 = 20	5 × 5 = 25
6 × 1 = 6	6 × 2 = 12	6 × 3 = 18	6 × 4 = 24	6 × 5 = 30
7 × 1 = 7	7 × 2 = 14	7 × 3 = 21	7 × 4 = 28	7 × 5 = 35
8 × 1 = 8	8 × 2 = 16	8 × 3 = 24	8 × 4 = 32	8 × 5 = 40
9 × 1 = 9	9 × 2 = 18	9 × 3 = 27	9 × 4 = 36	9 × 5 = 45
10 × 1 = 10	10 × 2 = 20	10 × 3 = 30	10 × 4 = 40	10 × 5 = 50

1 × 6 = 6	1 × 7 = 7	1 × 8 = 8	1 × 9 = 9	1 × 10 = 10
2 × 6 = 12	2 × 7 = 14	2 × 8 = 16	2 × 9 = 18	2 × 10 = 20
3 × 6 = 18	3 × 7 = 21	3 × 8 = 24	3 × 9 = 27	3 × 10 = 30
4 × 6 = 24	4 × 7 = 28	4 × 8 = 32	4 × 9 = 36	4 × 10 = 40
5 × 6 = 30	5 × 7 = 35	5 × 8 = 40	5 × 9 = 45	5 × 10 = 50
6 × 6 = 36	6 × 7 = 42	6 × 8 = 48	6 × 9 = 54	6 × 10 = 60
7 × 6 = 42	7 × 7 = 49	7 × 8 = 56	7 × 9 = 63	7 × 10 = 70
8 × 6 = 48	8 × 7 = 56	8 × 8 = 64	8 × 9 = 72	8 × 10 = 80
9 × 6 = 54	9 × 7 = 63	9 × 8 = 72	9 × 9 = 81	9 × 10 = 90
10 × 6 = 60	10 × 7 = 70	10 × 8 = 80	10 × 9 = 90	10 × 10 = 100

Seeing Patterns in Multiplication Tables

Look at the times-5 table. What patterns do you see?

Guess what will be the last digits of 11 × 5 and 12 × 5.

Give 3 examples of numbers that when taken 5 times gives an answer ending with

(i) 0 ....

(ii) 5 ....

Without finding the answer, can you tell the last digits of 18 × 5, 23 × 5, 32 × 5, 50 × 5.

Look at the times tables of 2, 3, 5. They have a relation between them. Can you see it?

$1 \times 2 = (2)$	$1 \times 3 = (3)$	$1 \times 5 = \boxed{5}$
$2 \times 2 = 4$	$2 \times 3 = 6$	$2 \times 5 = 10$
$3 \times 2 = 6$	$3 \times 3 = 9$	$3 \times 5 = 15$
$4 \times 2 = 8$	$4 \times 3 = 12$	$4 \times 5 = 20$

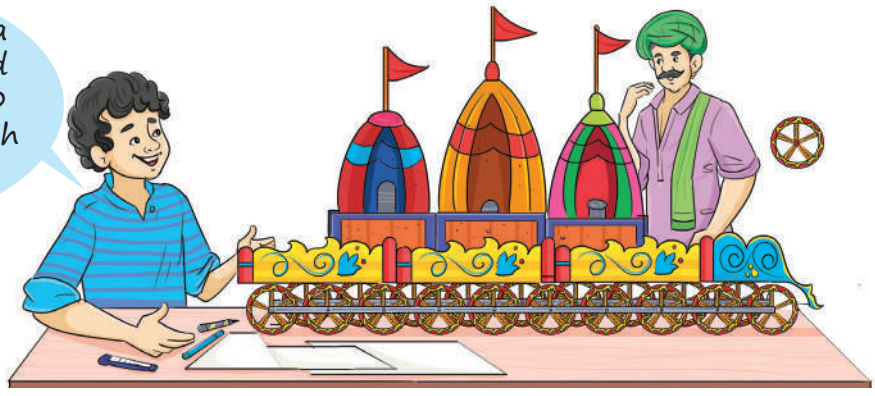
Is there a relation between the two circled numbers and the boxed number? Does this happen for the next rows also?

Can you find other examples of two tables adding up to a third table?

Let us Do

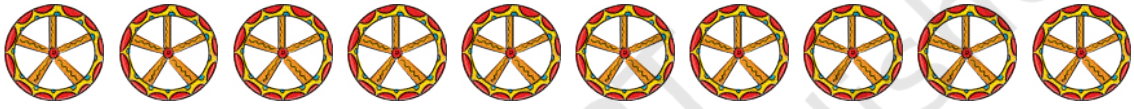
1. Draw pictures for each of the following problems in your notebook. Use counting, number line jumps or any other method to solve the problems.
   a. There are 5 jars with 4 cookies in each jar. How many cookies are there?
   b. An *idli* vessel contains 6 *idli* plates. In each plate we can make 4 idlis. How many *idlis* can be cooked in one go?
   c. 30 cookies are to be distributed among 5 children equally. How many cookies will each child get?
   d. Roro starts from 0 and takes 6 jumps to reach 18. All his jumps are of the same size. What is the size of Roro's jump?
   e. Toto does not take jumps of the same size and still reaches 18 in 6 jumps. How did Toto jump?
   f. Suma saves ₹ 8 every day. After how many days will she have ₹ 56?
   g. Mary has 63 sea shells. She gives 7 sea shells to each of her 5 friends. How many does she have left?

2. Solve the following problems. Try constructing a word problem.
   a. 4×9 b. $32 \div 8$ c. 6×7 d. $45 \div 5$



Help Bhim! Bhim will need ..... spokes.
Think and share with your friends how you found the answer.
Let us see how Bhim did it.

10 wheels will need:



5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5 + 5

= 10 × 5 = ... spokes.

Another 10 wheels will need ..... × ..... = ... spokes.

So, the total number of spokes needed is ..... + ... = ... spokes.

Try these

30 × 5 = ...

(Hint: You can find this by counting the spokes in 30 wheels.)

First 10 wheels will have ..... spokes

Next 10 wheels will have ..... spokes

Next 10 wheels will have ..... spokes

Total = ... spokes

30 × 5 = ... spokes

Describe the patterns you see here

Complete the following

40 × 5 = ...	70 × 5 = ...	100 × 5 = ...
50 × 5 = ...	80 × 5 = ...	
60 × 5 = ...	90 × 5 = ...	

Dhara collected 45 spokes. How many wheels can she make?

Does Dhara have enough spokes to make 10 wheels?

How many wheels can you make with 60 spokes?

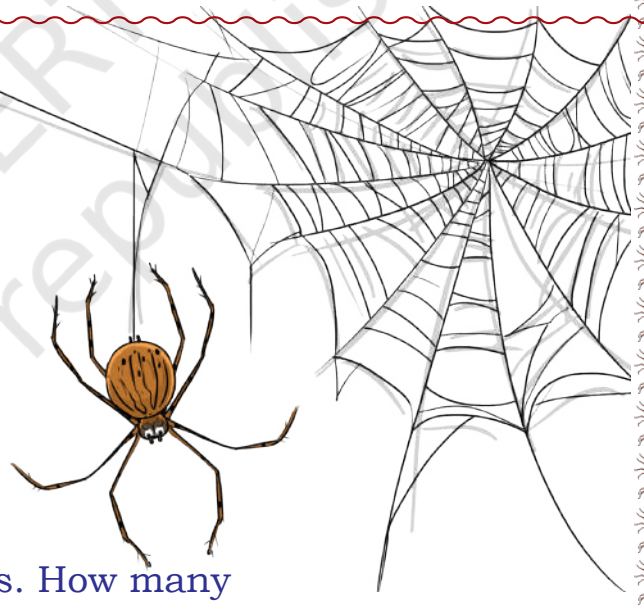
Let us Do

1. A spider has 8 legs.

   5 spiders will have ..... legs.

   10 spiders will have ..... legs.

   15 spiders will have ..... legs.



2. How many legs will 23 spiders have?

3. A group of spiders have 32 legs. How many spiders are there in the group?

4. Here is a 3-wheeled auto rickshaw. How many wheels are there in

   a. 18 auto rickshaws?

   b. 34 auto rickshaws?

5. Auto rickshaws in a garage have a total of 36 wheels. How many auto rickshaws are there in the garage?

6. There is a line of 55 ants (one ant has 6 legs). What is the total number of legs in the line?

7. Micky, the mouse, can see 48 legs of cows in the shed. How many cows are there in the shed?

8. Karry, the crow, can see 24 horns of cows in the shed. What is the total number of legs in the shed?

Let us Think

1. A frog is at 0. It takes jumps of only 7. What would be the largest number that the frog will reach before crossing 50?

2. A frog wants to jump backwards from 50. It continues to take jumps of 7. What is the number after which it is not possible for the frog to make a jump of 7?

3. What numbers should the frog start from to reach 0, taking jumps of 7 each time? What do you observe?

Puri Beach

1. One wall-hanging costs ₹ 42. How much do two wall hangings cost?

   Two wall hangings cost ₹ 42 + ₹ 42 = 2 × ₹ 42

   The cost of the two wall hangings: .....

2. One *Rabdi* cup costs ₹ 75. Preeti buys 5 cups of *Rabdi*. She has her mother's purse which has only ₹ 100 notes.

   How many ₹ 100 notes should she give the shopkeeper? How much will the shopkeeper then return to Preeti?

   What is the total cost of 5 cups of *Rabdi*?

Sea Shells

Dhruv lives near the sea. He thought of making a necklace for each of his three friends. He looked for sea-shells the whole day. He collected 112 sea-shells by the evening. Now, he has many different coloured and shiny shells.

He took 28 shells for one necklace.

112 – 28 = 84

Now he was left with 84 shells. Again he took 28 more shells for the second necklace.

- How many shells are left now?
- Then he took shells for the third necklace.
- So he was left with ..... shells.
- Are the shells enough for making necklaces for all his friends? .....
- How many necklaces can Dhruv make from 112 shells? .....

Try these

1. Kannu makes a necklace of 17 sea-shells. How many such necklaces can be made using 100 sea-shells?
2. While searching for sea-shells, Dhruv also finds 127 shiny pebbles. He distributes them equally to his 3 friends. How many will each get?
3. Preeti has a ₹ 500 note and wants to exchange it for lower denomination notes. How many notes will she get if she wants—
   (i) All 50 rupees notes?
   (ii) All 20 rupees notes?
   (iii) All 10 rupees notes?

Teacher's Note: Encourage children to solve questions based on division with large numbers, for which they do not know multiplication tables, using repeated subtraction. More problems based on real life contexts can be given.

Let us Explore

There are ten number cards from 1–10. There are five sealed envelopes. Each has two cards On the top of each envelope the multiplication of the numbers contained in it is written.

The 5th envelope contains the cards 5 and 9. The number 5 × 9 = 45 is written on the envelope.

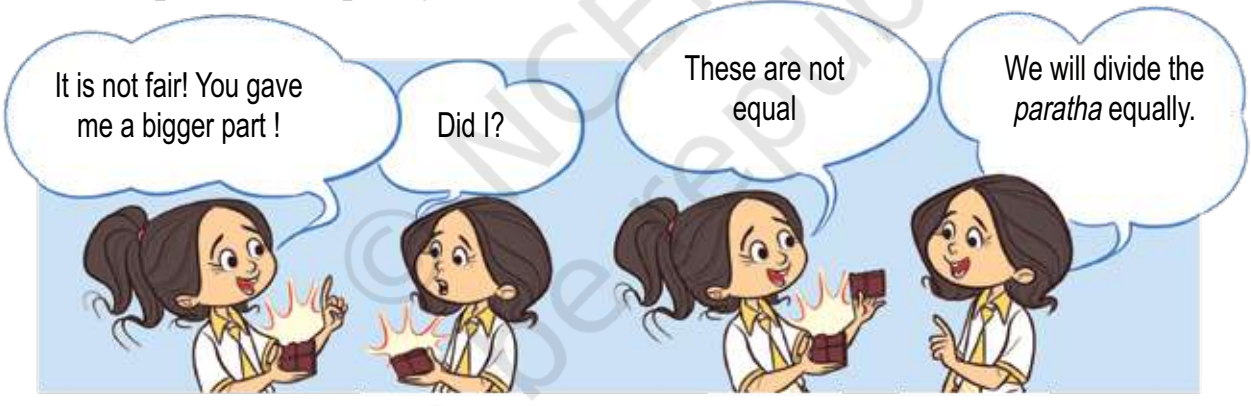
Identify the number cards inside each of the envelopes.

8 Fair Share

0333CH08

Shabnam and Mukta are enjoying their lunch break.

How do you think they are going to share the chocolate and the *paratha* equally?



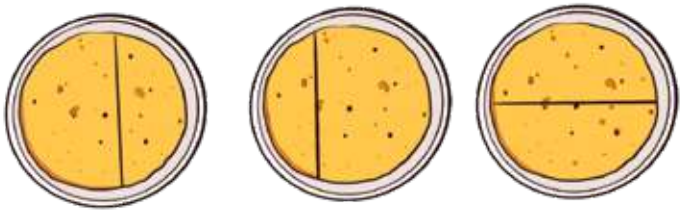
Think about a strategy that you can use to check whether two pieces are equal or not.

Let us Discuss

1. How do you share objects equally?
2. Why is Shabnam folding the *paratha* over itself ?

This is a whole *paratha*.

Tick ✓ the *paratha* that has been cut equally.



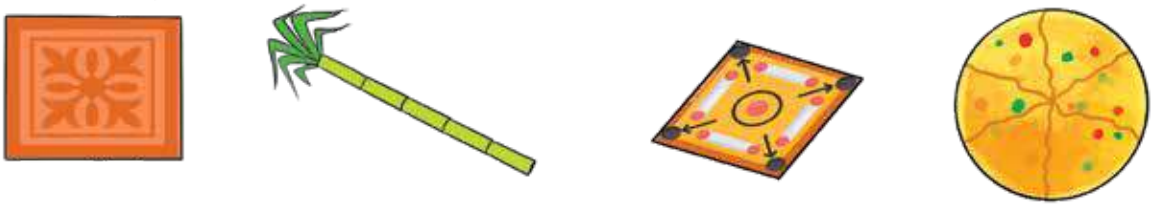
When 1 whole is shared equally between 2 people, each share is called a half!

How many halves make one whole? Check with some halves.

Let us Do

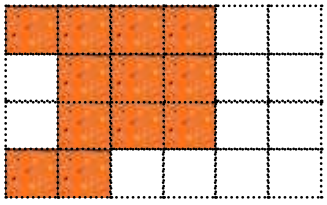
1. Circle the shapes where half of the whole is shaded.

2. Draw a line to show one-half of the whole.

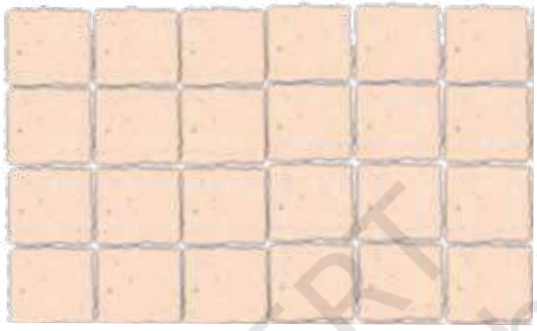


3. Shabnam has eaten some *chikki* from 3 sides.
Tick ✓ how much *chikki* is left?

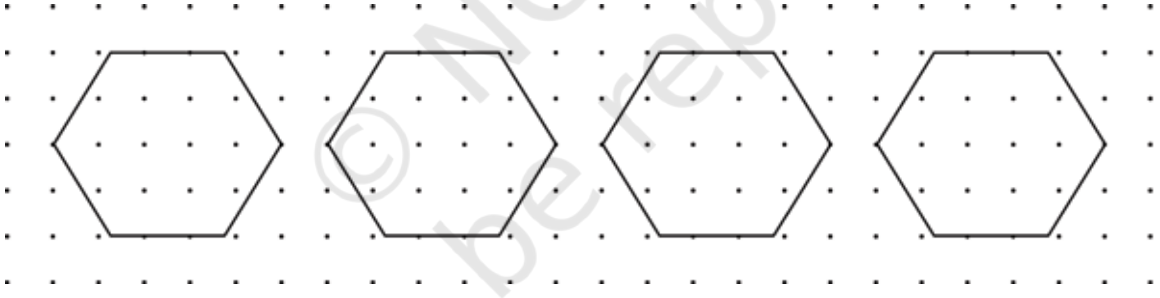
(a) less than half (b) more than Half (c) half



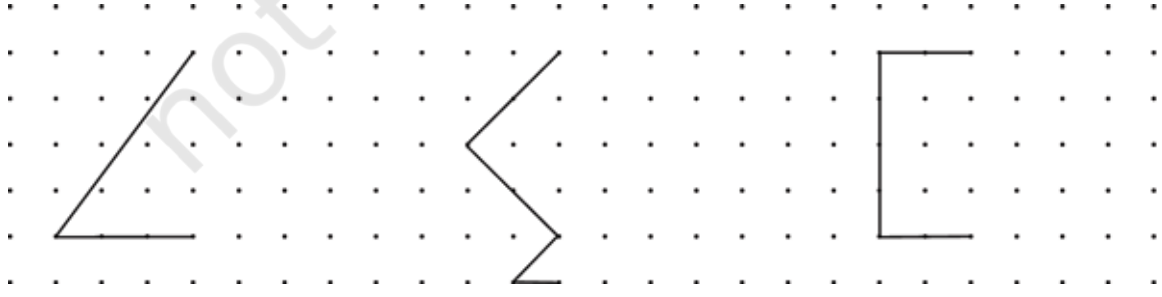
4. Show by colouring half a *chikki* that has been eaten from 2 sides.



5. Draw lines to show different ways of making a half.



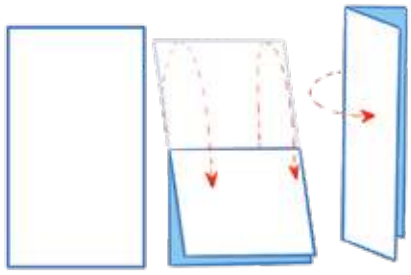
6. Complete the whole picture by drawing the other half.



Let us Explore

Take a rectangular sheet of paper and fold it in half. Find all the different ways to make a half.

Take a square piece of paper and fold it in half. Find all the different ways to make a half.



Let us Discuss

There was an old man with two sons Amit and Bala. He gave a mango tree, a solar lamp and a woollen blanket to them. He asked them to share these things among themselves. Amit was a cunning man. He told his brother 'Let us share the objects equally. I will keep the fruits, you keep the tree. I will keep the lamp during the night, you can keep it during the day. I will keep the blanket for half the year during winter. You can keep it for half the year during summer.' Bala agreed.

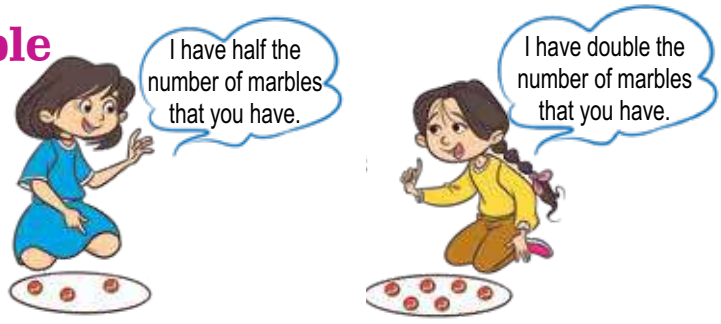
Is this a fair way of sharing? Is there another way to share it fairly?

Let us Do

Here are some mangoes. Share them equally between the two children.

Teacher's Note: Get students to show halves with paper folding in different ways. Please refer to the fraction as one half and not as 1 out of 2.

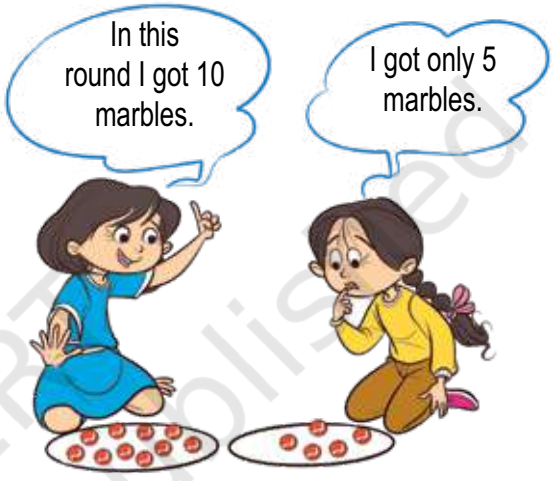
Half and double



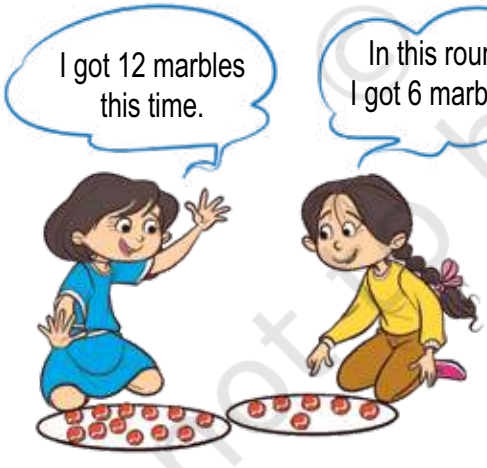
3 is half of 6. 6 is double of 3.

Fill in the following blanks using double or half.

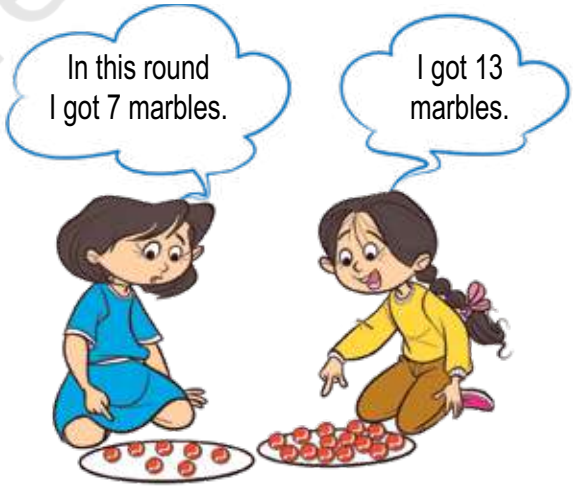
4 marbles are _____ of 8 marbles.
8 marbles are _____ of 4 marbles.



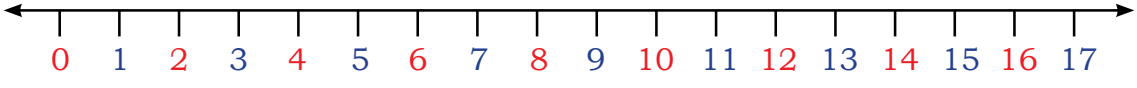
10 marbles are _____ of 5 marbles.
5 marbles are _____ of 10 marbles.



6 marbles are _____ of 12 marbles.
12 marbles are _____ of 6 marbles.



On a number line how far is 13 from the double of 7?
How far is 5 from half of 14?



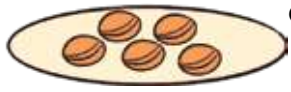
Guess who am I?

Use the clues to find the right fraction. Tick ✓ the correct box from the given 3 options.

1. I have less than double of 3 marbles.

   I have more than half of 8 marbles.

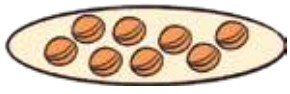
a)  4 Marbles

b)  5 Marbles

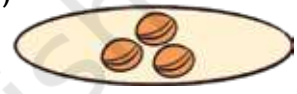
c)  6 Marbles

2. I have less than double of 4 marbles.

   I have more than half of 10 marbles.

a)  8 Marbles

b)  6 Marbles

c)  3 Marbles

Quarter   Quarter

Quarter   Quarter

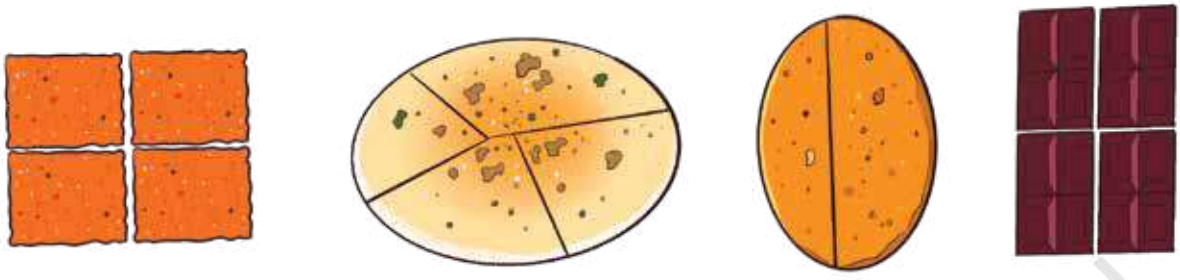
What part of the chikki did each get?

How many quarters in a whole?

Teacher's Note: Students may also say one fourth or half of half. Teacher could encourage various ways of expressing and help them to come up with precise expressions.

Let us Do

1. Tick ✓ the objects that show quarters.



2. Draw lines to make a quarter of the whole.

3. Draw the remaining three quarters and complete the whole.

(a) 

(b) 

4. Draw the remaining quarters to complete the whole.

(a) 

(b) 

Teacher's Note: Discuss how division of a whole into four equal parts leads to pieces of quarter size. Get students to show quarters with paper folding in different ways. Let students convince you that what they folded is actually one quarter of their paper.
Refer to the fraction as one quarter and not as 1 out of 4.

Half or quarter?

Tick ✓ the appropriate word to fill the blanks below.

Shabnam has coloured half/a quarter of the birds.

Mukta has coloured half/a quarter of the birds.

Shabnam has coloured half/double the number of birds that Mukta has coloured.

Lakshanya and Peehu have 16 flowers each.

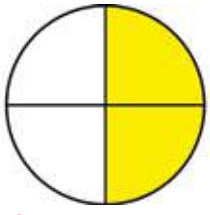
Lakshanya tied half/a quarter of her flowers.

Peehu tied half/a quarter of her flowers.

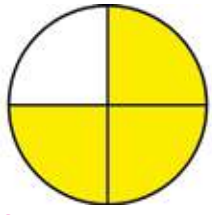
Lakshanya tied half/double the number of flowers that Peehu tied.

Quarters and whole

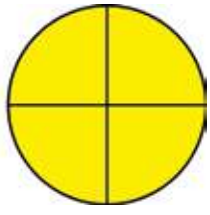
1 quarter



2 quarters (half)



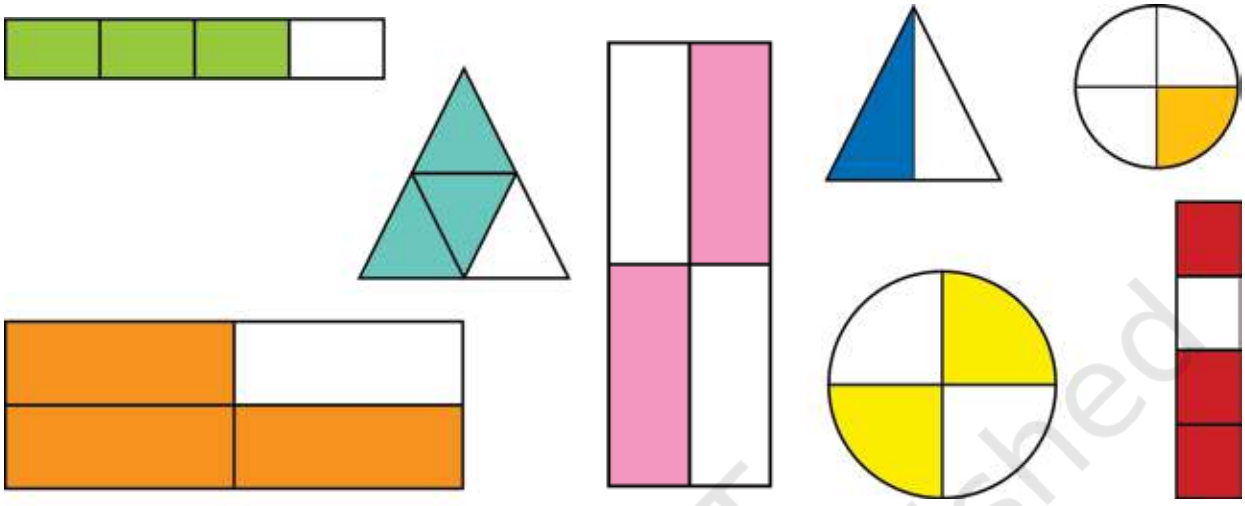
3 quarters



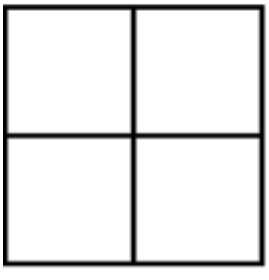
4 quarters (complete whole)

Let us Do

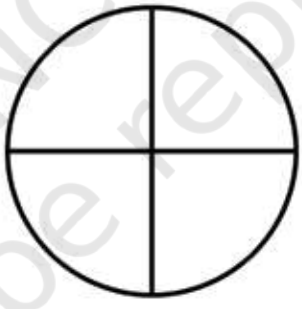
1. Tick ✓ the shapes below that show three-quarters.



2. Colour the shapes below to show the fractions as instructed.

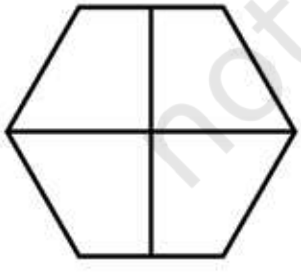


2 quarters

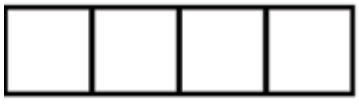


1 quarter

3 quarters



4 quarters

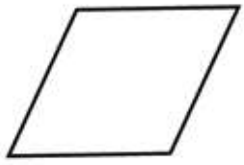


3 quarters

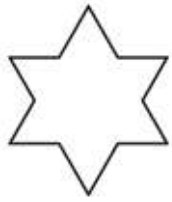
1 quarter

3. Draw lines and colour the shapes below to show the fractions as instructed.

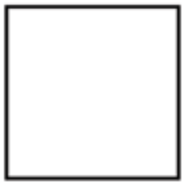
2 quarters



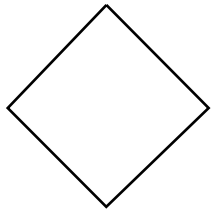
1 quarter



3 quarters



4 quarters

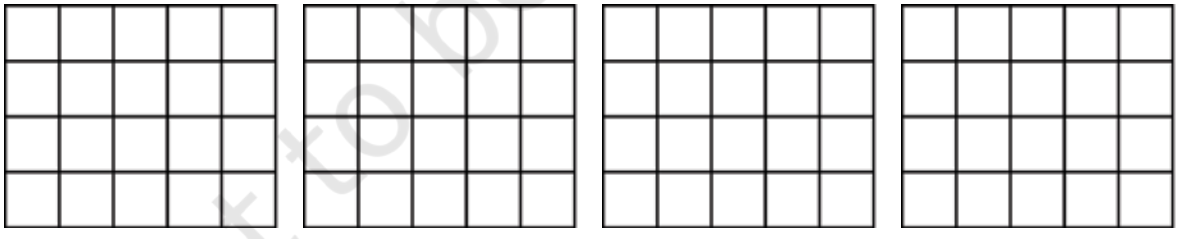


3 quarters

1 quarter

4. Here is a rectangle which shows quarters. Discuss how.

5. Show quarters and halves in different ways in the grids given below.



6. Use the fraction cards from your book to form a whole.

Teacher's Note: Let the children use the shapes from the perforated sheet given at the back to do the puzzle. Ask generic questions such as: how many pieces did you use to make one whole? Superimpose the pieces to see that they are exactly the same.

9 House of Hundreds – II

0333CH09

One day, Akbar and Birbal were walking in a garden. Many crows were flying in the sky around them. Akbar was curious to know how many crows there were. He announced a prize for anyone who could find this out.

People were wondering how to count crows which kept flying from one place to another. Akbar asked Birbal if he could figure this out.

After thinking for a day, Birbal said "There are exactly Nine Hundred and Sixty Three crows in our city".

Akbar was surprised and asked Birbal, "How can you be so sure"?

"You can get them counted," said Birbal.

"What if there are less?" asked Akbar.

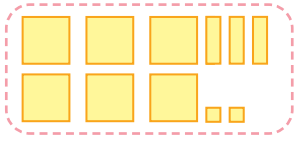
"The other crows would have gone on a holiday," said Birbal.

"What if there are more?" asked Akbar.

"Crows from other places would be visiting the city," said Birbal.

Akbar was happy with Birbal's reply and gave him the reward.

Let us Do



Number of rice sacks ☐

Draw tiles like the driver to show the following numbers. You can do it in your notebook.

a. 832 ☐

b. 947 ☐

c. 726 ☐

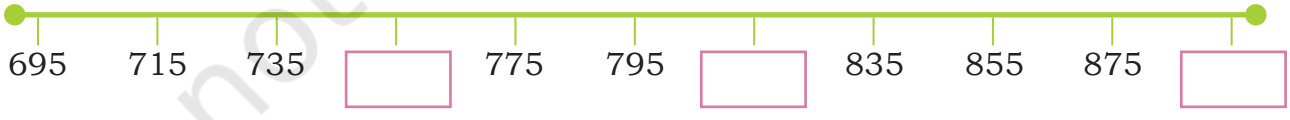
d. 504 ☐

e. 620 ☐

f. 700 ☐

Let us locate the following numbers on the number line: 530, 540, 628, 696, 590

Also locate the following numbers on the number line: 703, 721, 759, 810, 855, 887



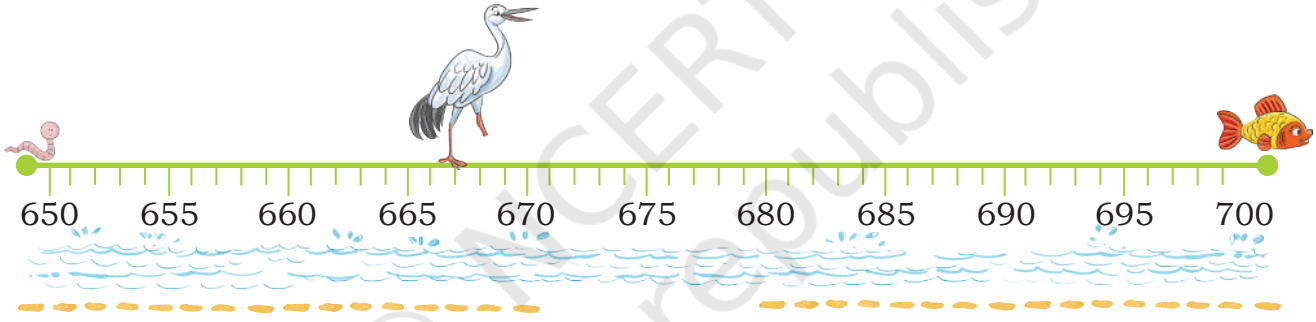
Teacher's Note: Help children to make guesses like the number of students in your class, school, or neighbourhood, or peanuts in a cart. Show a 1000 ginladi to understand how large 1000 is. Also show the hundreds after 500 on this *ginladi*: 600, 700, 800, 900, 1000.

Let us Think

1. Write the appropriate numbers between which each of the given numbers lie.

Number	Neighbouring hundreds	Neighbouring fifties	Neighbouring tens
468	400 and 500	450 and 500	460 and 470
183			
345			
693			
734			
899			

2. Help cranes reach their food using the number line.



To reach the worm

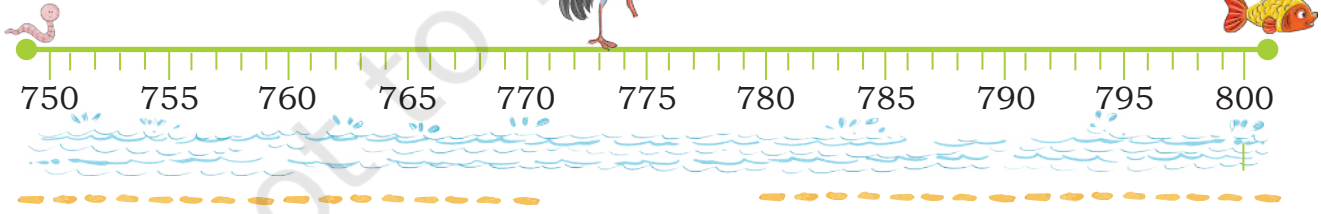
667 – ..... steps = 650

Length of steps: .....

To reach the fish

667 + ... steps = 700

Length of steps: .....



To reach the worm

..... – ..... steps = 750

Length of steps: .....

To reach the fish

..... +..... steps = 800

Length of steps: .....

Teacher's Note: Help children find different jumps or steps to the crane's food. Let them find how the crane can reach its food in 2 or 3 jumps.

Tambola

3. Fill the grid with numbers between 570 and 630. Strike out all the numbers which match the clues below. You can strike out more than one number. The child who has most numbers cancelled is the winner. One example is given below.

Clues

1. 597
2. A number with 4
3. Numbers between 595 and 605
4. A number with 1 as the tens digit
5. Two more than 610
6. 5 less than 625

572	628	579	~~599~~
~~597~~	~~574~~	581	~~600~~
623	573	570	~~602~~
609	~~616~~	~~614~~	626

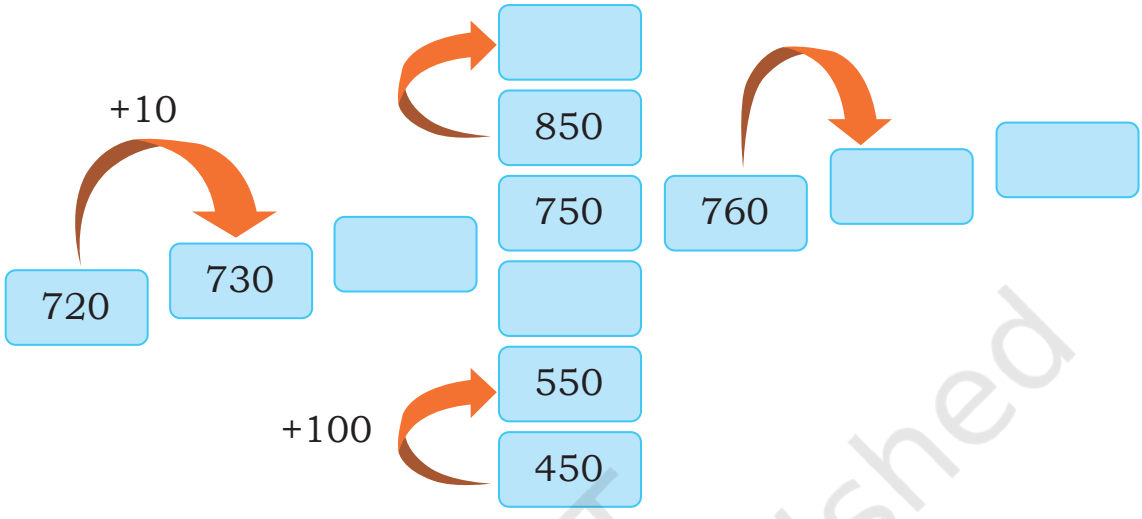
Write different ways of making the following numbers.

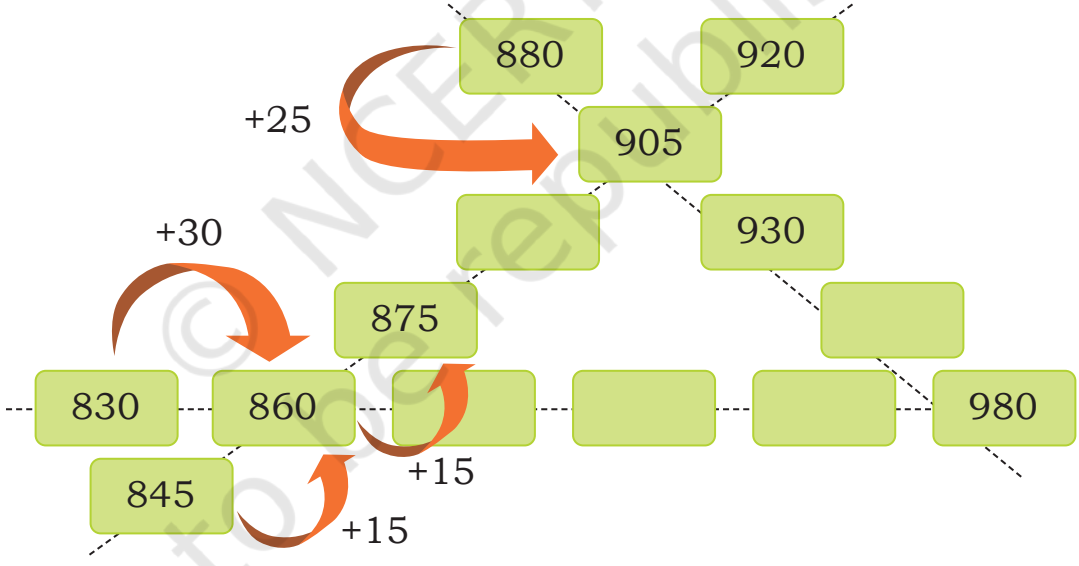
	3 hundreds, 6 tens 8 ones				
68 more than 300	368	32 less than 400 400 - 32		905	
	300+60+8				
	555			736	

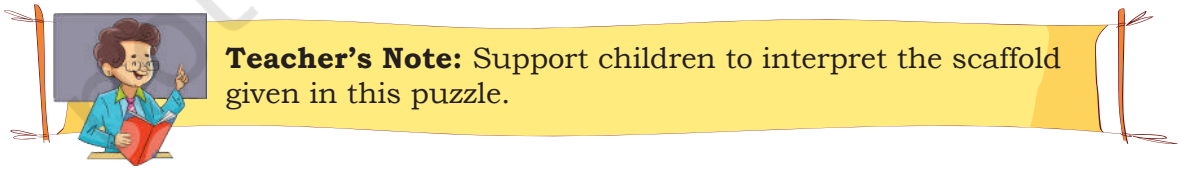
Teacher's Note: Play the Tambola game with different ranges of numbers, different clues and different grids. Teacher to also support children in revising different ways of representing numbers using number sentences as well as concrete representations like matchsticks, blocks or number line.

Skip and solve

Teji and Jojo are resting. Ajji asks them to complete the number patterns. Let us help them fill in the empty boxes.



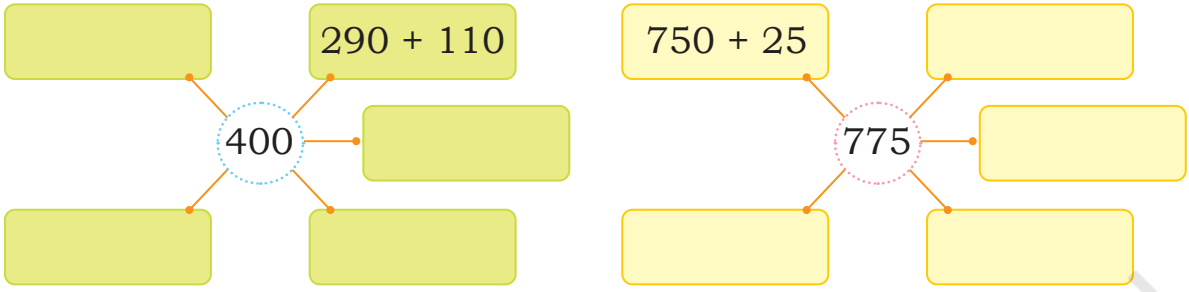




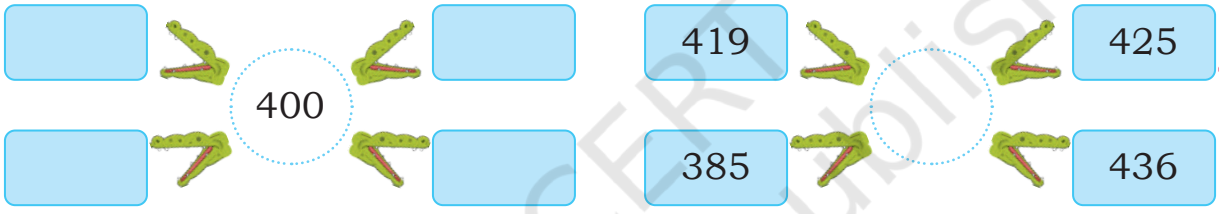
940 941 942 943 944 945 947 948 949 950 951 952 953 954 955 957 958 959 961 962 963 964 965 966 967 968 969

Let us Do

1. Write number sentences for the numbers in the centre.

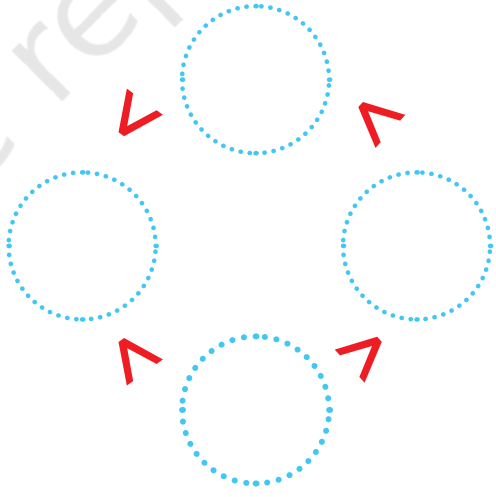


2. Write numbers in the blank spaces such that they meet the conditions.



Number Puzzles

3. Fill the numbers 384, 23, 176, 905 in the empty circles such that they meet the conditions.



4. Match the quantities on the left with the appropriate numbers on the right.

Number of children in your school	0-10
Number of books in your classroom	11-50
Number of people in a bus	51-100
Number of pages in your mathematics book	101-200
Number of steps you walk in a day	201-500
Number of stars in the sky	501-1000
Number of flowers in a garland	More than 1000

5. Match the following such that all the conditions are met.

I have 2 zeroes as digits and am very close to 99	150
I have 3 hundreds, 6 tens and 7 ones	425
I have zero tens and zero ones	367
I am century + half century	400
I come between 400 and 450 and I have 5 as a digit	100

Teacher's Note: Please note that the number ranges on the right can be matched with several quantities on the left. You could also encourage children to identify things which match the number ranges.

The Number Detective

Let us have some fun, with numbers and patterns, everyone!

Look at the hundreds – 100 200 300

Can you find all the hundreds?

Some numbers are special, let's explore, 789 345 and 123,

what more?

Jojo wonders why they're so neat, Teji says 876 and 321 too have the same beat!

Now, numbers that repeat, just the same, 11, 22, 33, have twin digits.

111, 222, 333 are triplet digits.

Can you find more such numbers that follow the pattern?

Here are more numbers that look the same, from left to right, and right to left: 353 868.

Finding them is a fun game. Write other such numbers.

Teji likes numbers with zeroes. She knows numbers like 210 404 and 800.

Write more such numbers:

Teacher's Note: Support children in enumerating and writing numbers systematically to solve these puzzles. Allow children to share their strategies with others.

Let us Do

1. I have 6 blank paper slips. I can write 100, 10 or 1 on each of them. What numbers can I make with these 6 slips? Discuss.

Six slips with 100 written on them. Six hundred.

Four slips with 100 written on them and two slips with 10 on them. 420

100	100	100	100	100	10
100	100	100	100	100	10

a. What will you write on these slips for making 231?

b. What will you write on these slips for making 123?

2. Make other numbers.

a. Number is .....

b. Number is .....

What is the largest number that can be made? .....

Are there numbers which can not be made using these slips? Find out.

What is the smallest number that can be made? .....

Teacher's Note: Construct more such problems and encourage children to play with numbers.

My numbers

Take the digits 3 and 8 and make as many 2 or 3 digit numbers as you can. You can repeat the digits.

Jojo, with 3 and 8, I can make 38.

3 8 8 3 3 8

I can make 338, 388

3 3 8 3 8 8

2 digit numbers	3 digit numbers

Arrange the numbers Smaller to greater

.....

.....

Smallest number:

Largest number:

Let us Think

Teji is making numbers using words! She shows the blue cards and says it is 12. She shows the yellow cards and says 14. Why?

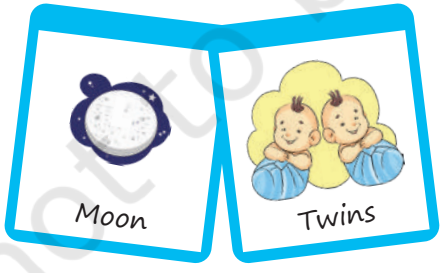


Figure out what Teji is doing.

Teacher's Note: Play such games frequently with different numbers and clues.

Ajji showed some more numbers.

a.

7 1

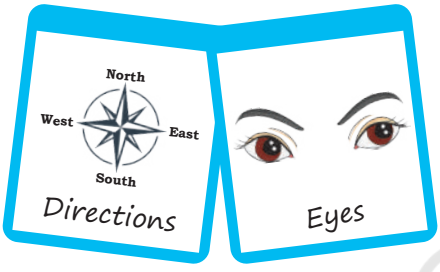
b.

5 3

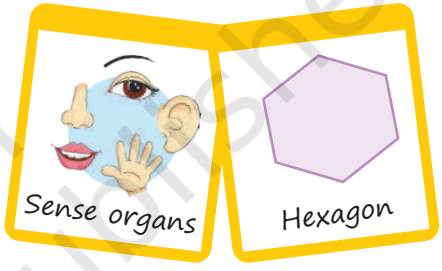
This way of saying numbers using words is called *Bhutasankhya*, which means **Word Numerals**.

1. Write the numbers, for the following cards.

a.



b.



2. Think of other words for 0–9.

Make new cards for the numbers 15, 27, and 94.

Teacher's Note: Use local contexts and languages familiar to children.

10 Fun at Class Party!

0333CH10

Children of Class 3 are preparing for a celebration in the class. Look at the picture.

Let us Do

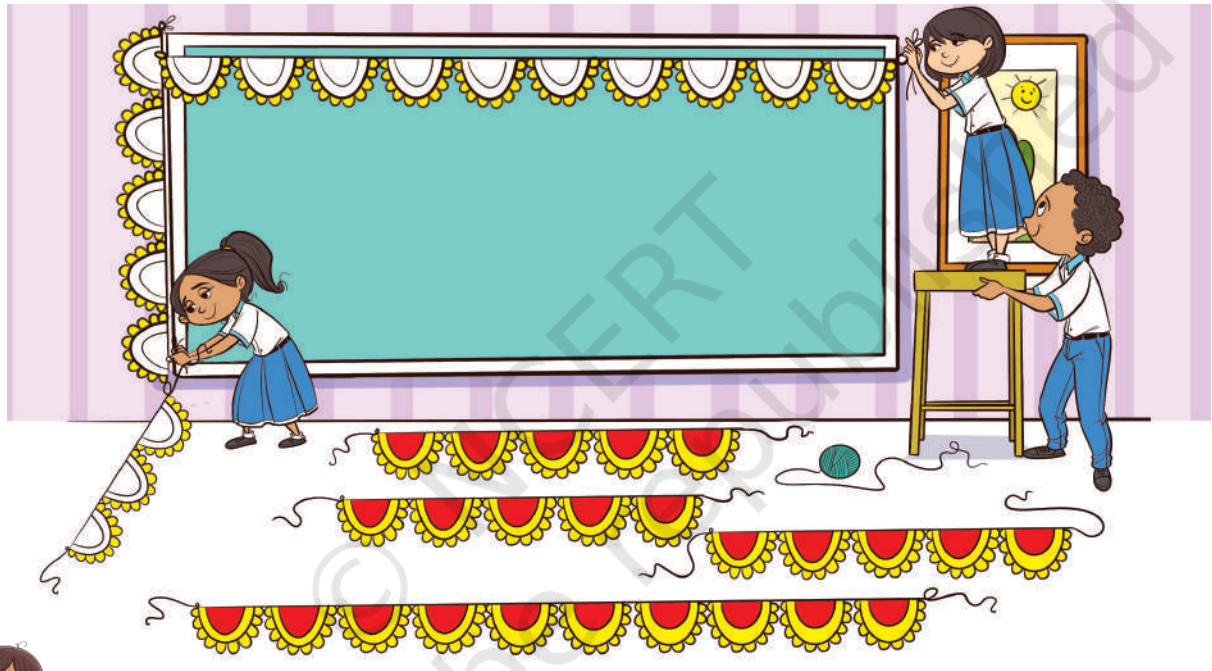
Discuss and explain how you answer these questions based on the picture given above.

1. What are the various activities shown in the picture?
2. How does Shelly find the height of the door?
3. Leena and Adi use their hand spans to measure the length of the same table. Will they both get the same measurement?

Teacher's Note: The picture shows some examples of measurement using informal and formal tools for length. Let children identify the different ways of measuring and use appropriate words like hand span, footstep and paper strings.

4. Circle the child with the longest ponytail.
5. Tick ✓ paper strings in the classroom that are as long as the height of the window.
6. Find the distance between the two walls of the classroom. How did you find it? Can there be other ways of measuring it?
7. Identify all the ways that children are using to measure length in this picture. Which way do you think is better and why?

Children of Class 3 are decorating the board with paper strings of different colours.



Let us Do

1. In the picture above, colour the paper strings as instructed below.
   (a) Colour the shortest paper string with red. Discuss how you identified the shortest string.
   (b) Colour the longest paper string with green. Discuss how you identified the longest string.
2. How many more colourful paper strings will be needed to decorate the border of the green board?
3. How many of  are needed to decorate the entire border of the board?

Let us Do

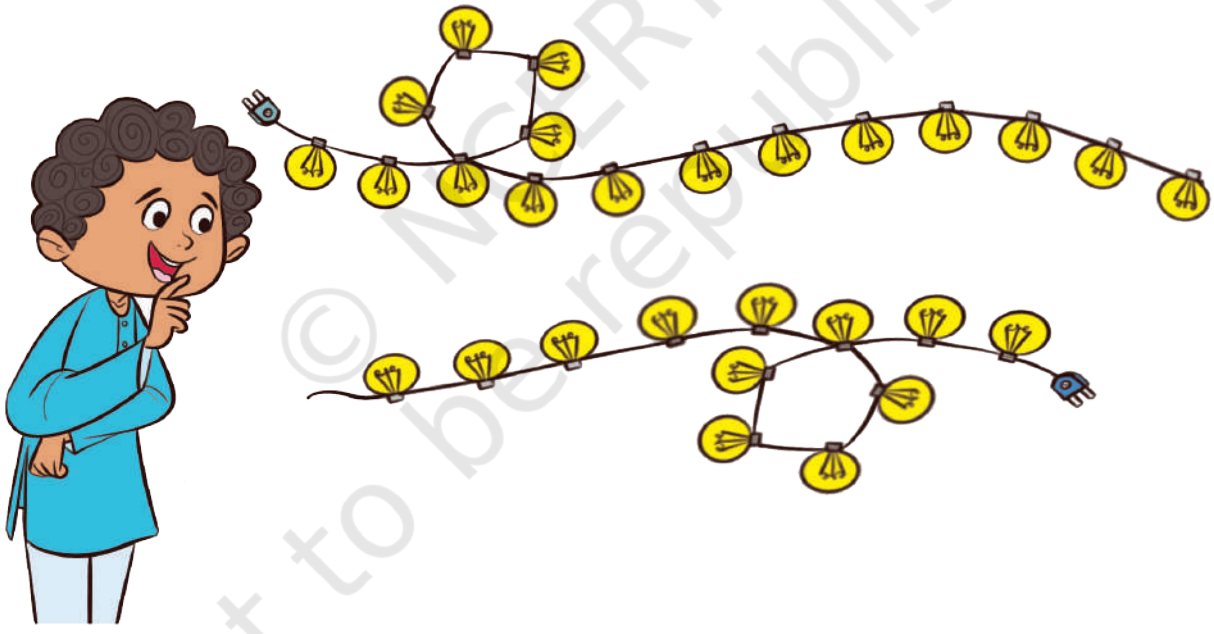
1. Cut and paste a wool or cotton thread as long as the line given below.

2. Draw a string longer than the string given below.

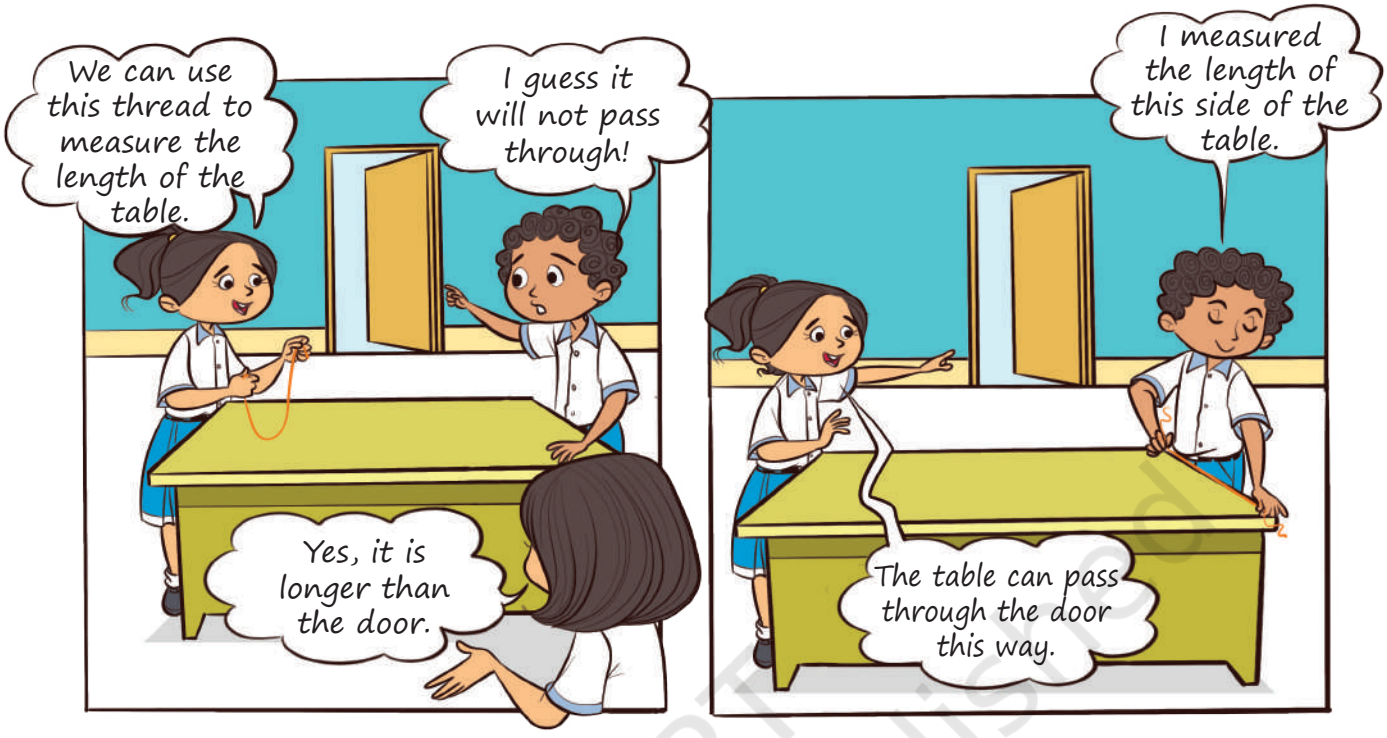
3. Draw a string shorter than the decoration string Shelly and Adi are holding.

4. Draw the other half of the moustache which is as long as the half of the moustache on the face shown in the picture.

5. Look at the strings and help Adi choose the longest one. How did you find out? Discuss.



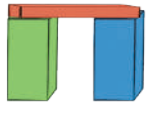
Shelly and Adi need to take a large table inside the classroom for the party. The table is too heavy for both of them to move. Without lifting the table, how can they figure out if the table can go through the door of the classroom? Help them find out what they must do.



Can there be a way to take the table inside the door if both the length and the breadth are more than the width of the door?

Let us Play

Make a bridge using boxes or bags or any other objects available in your class. Place or arrange the boxes so that the bridge does not move. Take some objects from your class and guess if the objects can go through the bridge.



Can you name some things that cannot pass through your school gate? Discuss.

Teacher's Note: Comparing two lengths is not always possible by bringing them next to each other like in the above example of the table and the door. This exercise should help students to figure out that one can measure indirectly using a common unit.

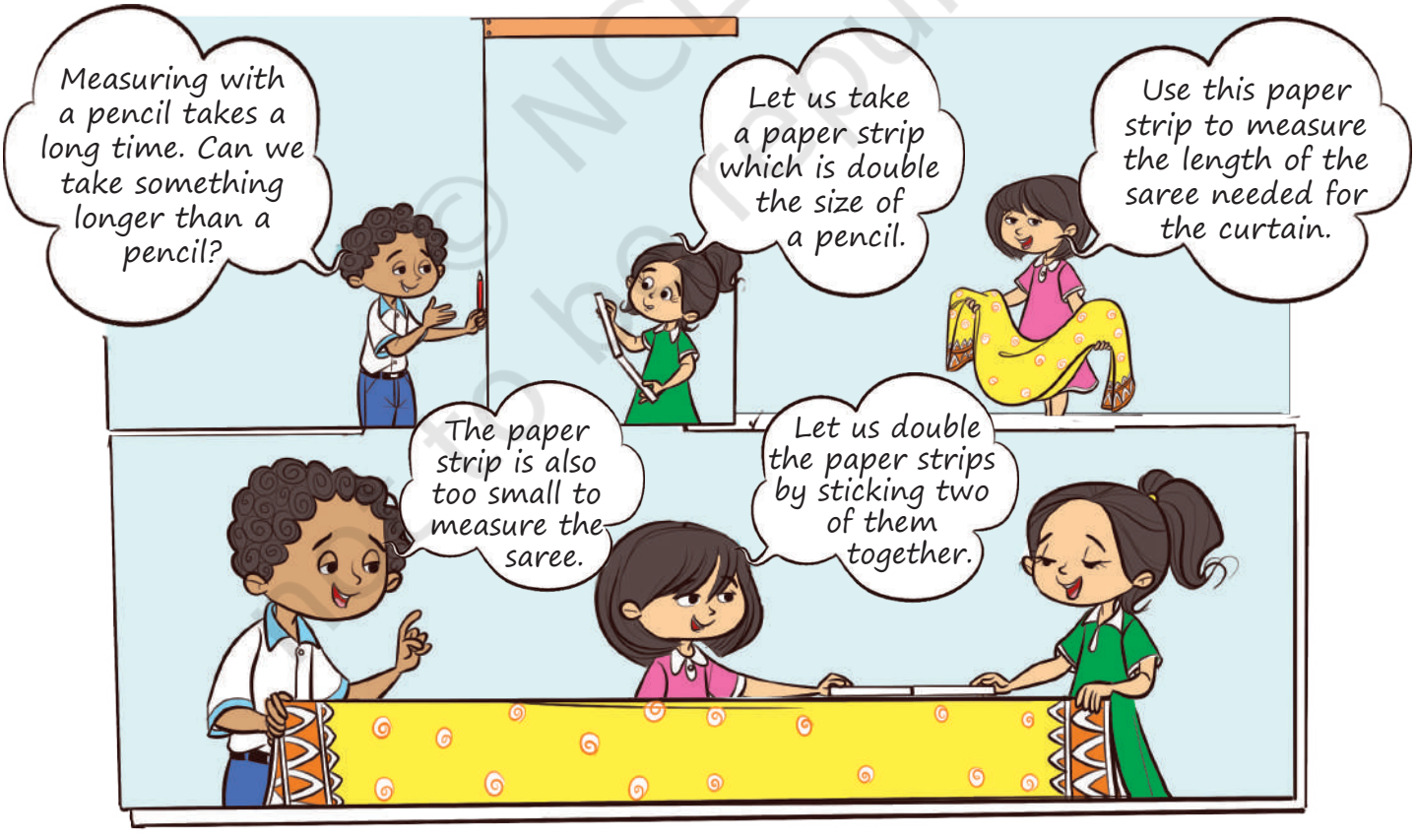
Are these true for all?

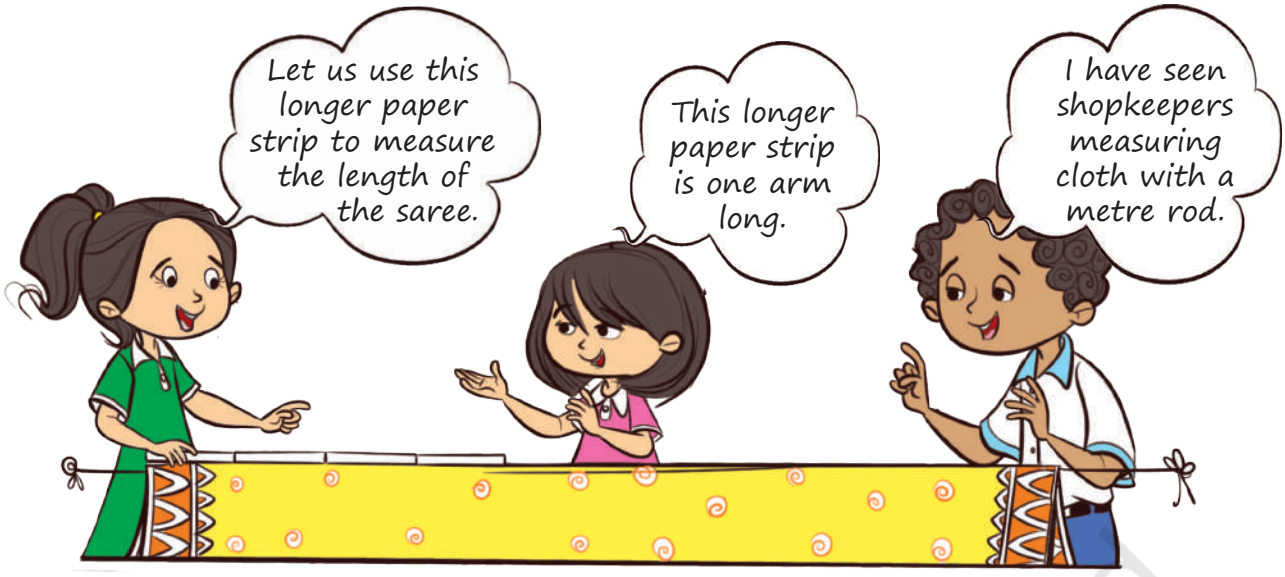
Children are measuring their body parts to make costumes for the drama.

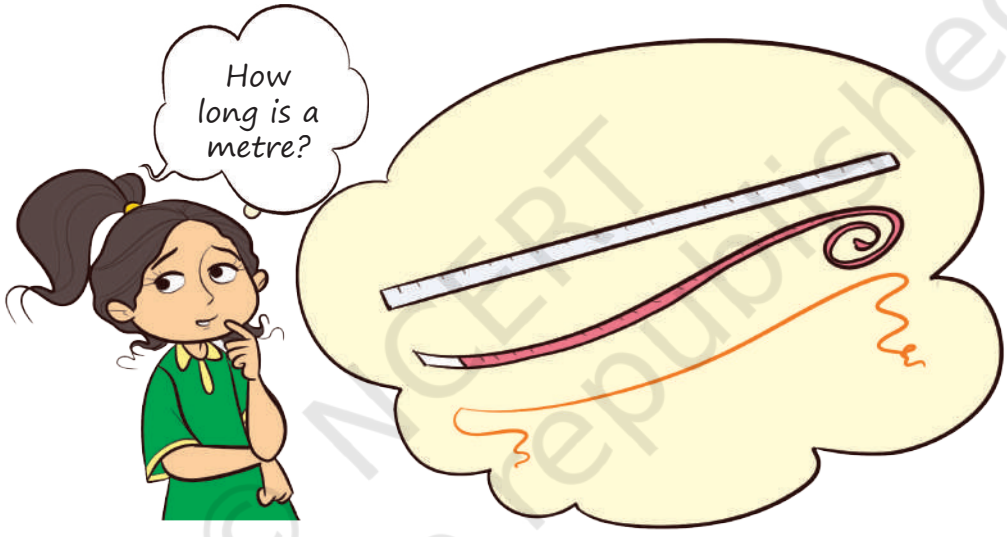
They have made the following statements. Do you think they are true for all children? Let us check. Take help from your friends to measure. Tick ✓ the correct answer.

1. Your head is 3 handspans round. True / False
2. The length of your forearm is equal to the length of your feet. True / False
3. Your height is equal to the length of your arms wide open. True / False

Shelly wants to make curtains for the drama. Leena got her mother's saree. Adi used his pencil to measure the length of the wall.

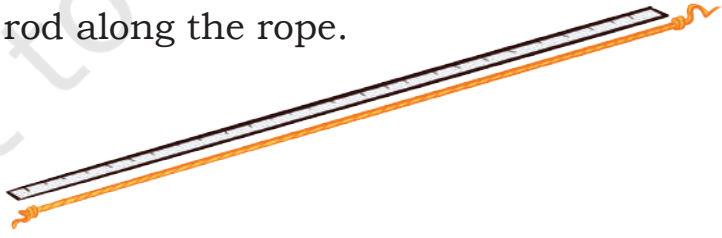






Steps for making a Metre long rope:

1. Take a metre rod or an inch tape and a rope or a thread.
2. Make a knot at one end of it.
3. Keep the metre rod along the rope.



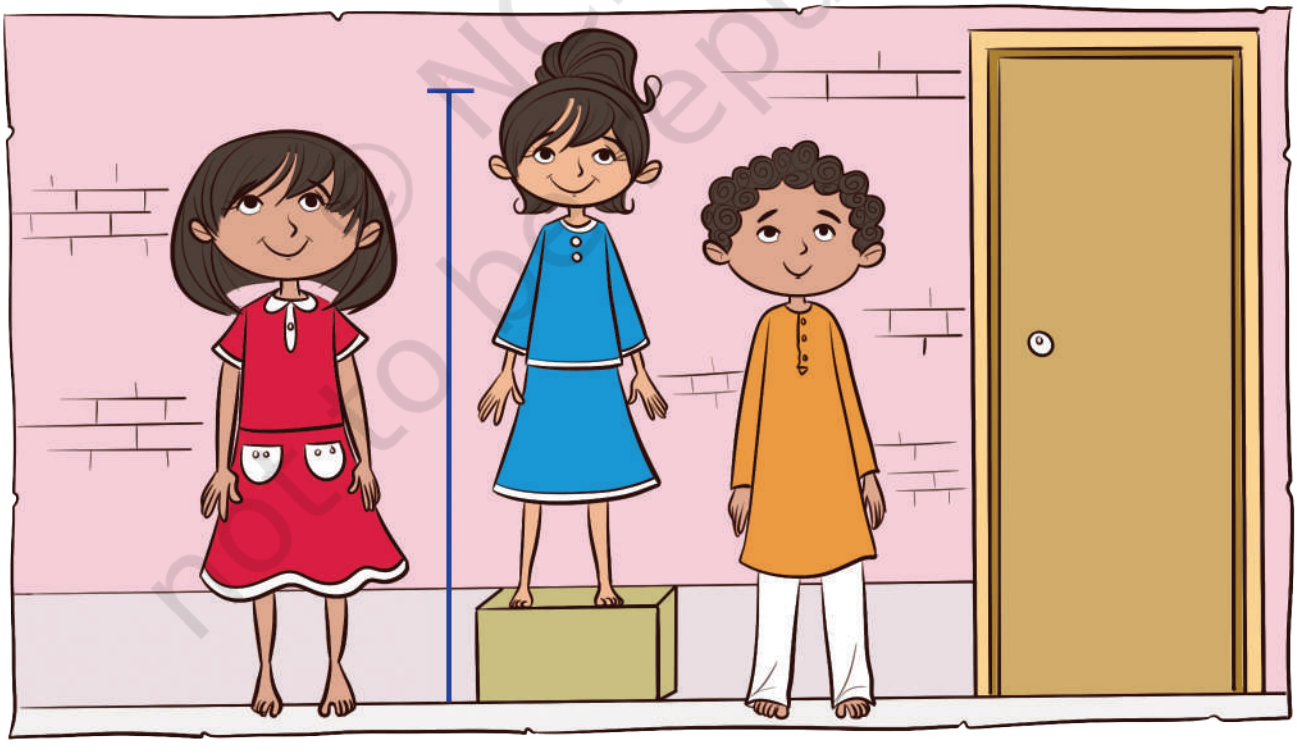
4. Mark one metre on the rope and make a knot there.
5. Now the length between the two knots is one metre. Check again whether the rope measures one metre.

Measure your height by marking one metre on the wall of your class.

Write the names of your friends whose heights are more than one metre and whose heights are less than one metre.

Heights more than one metre	Heights less than one metre
_____ _____	_____ _____
_____ _____	_____ _____
_____ _____	_____ _____
_____ _____	_____ _____
_____ _____	_____ _____

Circle the tallest among these children:



Who is the tallest among them? Discuss.

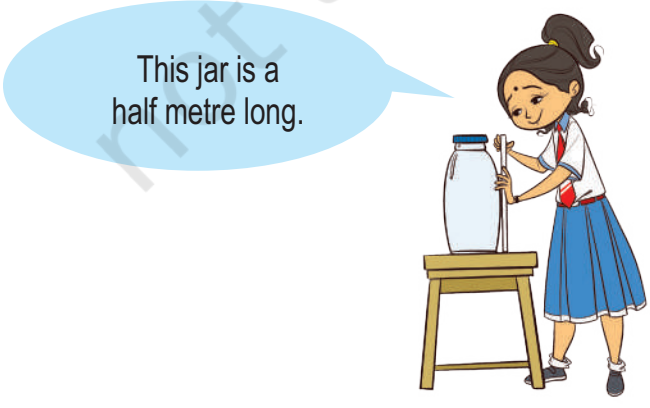
Write the names of the objects around you, whose length is one metre, more than one metre, and less than one metre.

Objects of length more than one metre	Objects of length less than one metre	Objects of length equal to one metre

This is one metre long.

Fold it in half. This will be a half metre long.

Fold it in half again. This is a quarter metre long.



Let us Do

1. Find the lengths of different objects by using one metre, half meter, and quarter metre ropes. Write their names and tick ✓ in the appropriate boxes.

Objects	Less than a quarter metre	More than a quarter metre	Less than a half metre	More than a half metre	Less than one metre	More than one metre

2. Mark a line on the floor as a Start line and then mark another line one metre from the Start line. Stand on the Start line and jump. Write the names of children who jump more than a quarter of a meter, half of a meter and a meter.
3. Take a ball or disc and try to throw it as far as you can. Now measure how far the throw was.

Let us Do

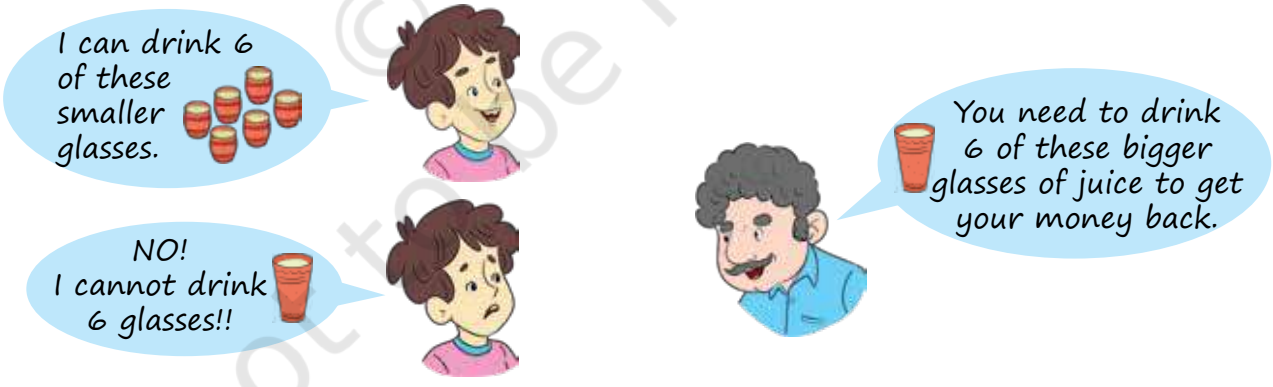
1. Measure the height of your teacher or parent using a metre long rope or a strip.
2. Estimate and cut one-metre long wool or thread. Ask your friends to do the same. Now verify with the help of the metre rope whose estimate is the closest.
3. Cut a one-metre long rope into 4 equal pieces. How many cuts did you make?
4. How many footsteps fit into a metre rope?
5. Use a metre rope to find how long is a side of the class wall.

11 Filling and Lifting

0333CH11

How much can you drink?

Chintu reads the poster and tells Shambhu:



Why do you think Chintu does not take the challenge?
Do you think you can take the challenge?

Teacher's Note: Children should understand that if one takes a bigger glass then we may drink a fewer number of glasses. So one may not take the challenge.

Whose glass holds more?

Nita and Monu visit Ritu's house. Ritu's mother gives them milk in different glasses. Who do you think gets the most milk?

Ritu's elder sister finds out who drinks the most milk like this.

She pours the content of the glasses in three same-sized glasses.


Ritu's glass


Monu's glass


Nita's glass

Ritu's glass

Monu's glass

Nita's glass

Let us Discuss

1. Who drank the most milk?
2. Who drank the least milk?

3. Fill in the blanks with 'more' or 'less'.

a. Nita's glass holds ..... milk than Monu's glass.

b. Monu's glass holds ..... milk than Nita's glass.

c. Ritu's glass holds ..... milk than Nita's glass.

4. Tick ✓ the right name.

a. Nita/Monu/Ritu's glass holds the most milk.

b. Nita/Monu/Ritu's glass holds the least milk.

Let us Do

Get three vessels (like a small bowl  , glass  , and bottle ) of different sizes from your home. Guess: how many small bowls will fill the glass? How many glasses will fill the bottle? First guess and then pour water from one vessel into another to check if your guess is correct.

Vessel	My guess for the number of small bowls	How many bowls
Glass		
Bottle		

1. Fill in the blanks with 'the most' or 'the least'.

a. The glass holds ..... water.

b. The bottle holds ..... water.

2. Name the vessels that are used in your home that can store more water than your bottle.

Teacher's Note: Children may get different vessels but they should be able to draw conclusions about their capacity.

Let us Do

1. How many ladles fill the bowl? .....
2. How many glasses can be filled by the jug? .....
3. What will you use to fill half of the glass?
4. Which of these would you use for distributing the lemonade in glasses? Why?
5. How many glasses can be filled with 3 jugs of lemonade?
6. How many ladles are needed to fill 4 glasses?
7. Can you use a ladle, bowl or a glass to find out how much lemonade a jug can hold?

Teacher's Note: Let children discuss how many times they will have to pour using each thing. Discuss how utensils with less capacity can be used to fill a utensil of larger capacity and how utensils with larger capacity can fill a number of utensils of smaller capacity. Let them conclude that in both cases the quantity remains the same.

A Measuring Bottle

Nita sees the milkman pour milk using a measuring cup everyday.

Why do you think milkmen use measuring cups for giving milk? Discuss with your parents, grandparents and in your class.

Nita pours water from the bottle into the jug. The jug is exactly 1 litre.

Let us Discuss

1. Tick ✓ the appropriate word in the sentences given below.

   a) The glass holds more than/less than 1 litre.

   b) The bowl holds more than/less than 1 litre.

   c) The jug holds more than/less than/exactly 1 litre.

Teacher's Note: Encourage children to do the above activities in the class. Discuss children's findings in the class. Children may get different answers depending on the vessels they choose. Teacher can get a few vessels and ask them to guess if each will hold 1 litre or more or less than a litre.

2. Find the vessels at home that are exactly 1 litre. Use your 1 litre bottle to check.

3. Identify vessels that are more than or less than 1 litre.

Let us Think

Look at the picture and tick ✓ the appropriate word.

a) The mug holds a litre/half litre of water.

b) The glass holds a litre/half litre/quarter litre of water.

Let us Explore

First guess and check with the 1 litre bottle.

a) How much water does a bucket hold at your home: more than/less than/equal to 1 litre.

b) How much water does a mug hold at your home: less than/more than/equal to half a litre.

c) How much water does a glass hold: less than/more than/equal to a quarter litre.

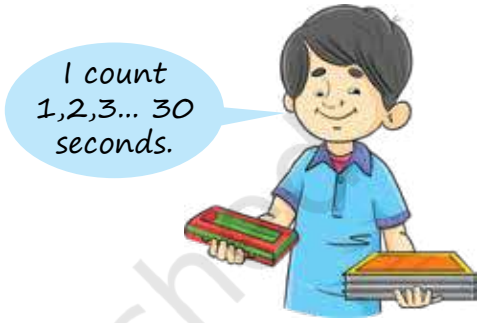
Teacher's Note: Please procure measuring cups or vessels that have a capacity of 1 litre, ½ litre and ¼ litre. Conduct the activities for measuring water in the classroom with children. Also, encourage children to establish in class that 4 quarter litre glasses are equal to 1 litre, and 2 half litre mugs are equal to 1 litre.

Do you Know?

To make a 1 litre single-use plastic water bottle, we need about 5 litres of water! Less water is wasted if we use our own glass or reusable bottle.

Heavy or Light?

Chintu is holding 3 textbooks in one hand and a pencil box in the other hand for 30 seconds.



Discuss in pairs why one hand of Chintu is lower than the other?

Try holding the following things in both hands. Make observations in pairs. Which is heavier and which is lighter?

Do you and your friends agree on which is lighter and heavier?

Things to compare	My observation	My friend's observation
Lunch box and Pencil box	..... is heavier than	..... is heavier than .....
Your school bag and Lunch bag		
Apple and watermelon		
A balloon filled with air and a basketball		

Teacher's Note: Children need to understand that heavier things tend to go down due to their weight. Teacher can bring the pan-balance or invite a vegetable vendor to give children some experience with weighing.

Let us Do

1. Write the names of the objects and their weights in the table given below:

	Object	How many coins or erasers balance the object?
a.	 Pencil	
b.	 Ping Pong Ball	
c.		
d.		
e.		

2. Let us make another weight to measure slightly heavier objects. Fill a matchbox with sand and use this to weigh the following objects. Guess the weight in terms of matchboxes and then verify.

Object	Your guess for the number of matchboxes needed to balance the object	Number of matchboxes used to balance the object
Pencil box 		
A spoon 		
4 marbles 		

Write the names of all things measured in the order of lightest to heaviest.

.....

Teacher's Note: Procure a simple toy pan-balance. Use weights readily available like coins or unused erasers.

Let us Do

Weight hunt

Do this activity in groups. Among your group find a bag that is heavier than yours. Find a bag that is lighter than yours. Discuss.

1. Why is your bag heavier or lighter?
2. Count the number of books to see if there is a difference in the number of books in the bag.
3. Can you make the two bags of about the same weight by moving a book? Discuss.

How much is 1 Kilogram?

With the help of your parents, find objects in your home on which 1 kilogram is written. Feel it with your hand and guess what other objects may be 1 kilogram. Verify by checking on the label of the object or by asking your parents.

4. Write the names of the objects that are 1 kilogram.

....., ...

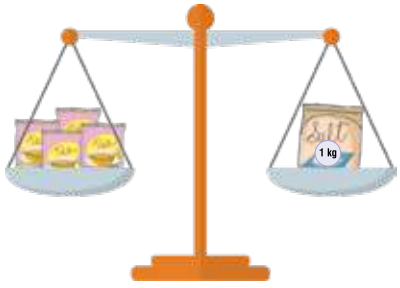
Let us keep a 1 kilogram salt packet or any other readily available packet as our measuring tool.

5. Can you guess which of these things are likely to be lighter or heavier than 1 Kilogram? Put a tick ✓ mark in the appropriate box.

Objects							
More than 1 kg	☐	☐	☐	☐	☐	☐	☐
Less than 1 kg	☐	☐	☐	☐	☐	☐	☐

6. Look at the balance and tick ✓ the correct word.

a) Each *daal* packet weighs a half kilogram/kilogram



b) Each tea packet weighs a half kilogram/quarter kilogram/kilogram.

Let us Explore

Look around your house and identify objects that are about half a kilogram and quarter of a kilogram. Feel these things with your hand and guess what other things are a half or quarter kilogram. List the objects that are about a quarter kilogram and a half kilogram. Verify with the 1 kilogram salt packet.

Teacher's Note: Have discussions with children in the class as to how children are making their guesses. Encourage children to discover/ discuss relationships between 1 kg, ½ kg, and ¼ kg using the pan-balance and the 1 kg salt packet.

Tricky balls

1. Montu poses a puzzle to his friends: 3 balls look similar in size. One of them is heavier and 2 balls are equal in weight. You have only a pan-balance and no weights. Using the 3 balls and the pan-balance, can you identify which is the heavy ball?

   a) How many times will you have to weigh?

   b) Use the balance only one time and tell which is the heavy ball.

2. There are three same-sized balls of different weights and colours: Red, Orange and Green.

   You can use the pan balance for it but cannot use weights.

Red ball Orange ball Green ball

   How will you find which one is the heaviest and which one is the lightest?

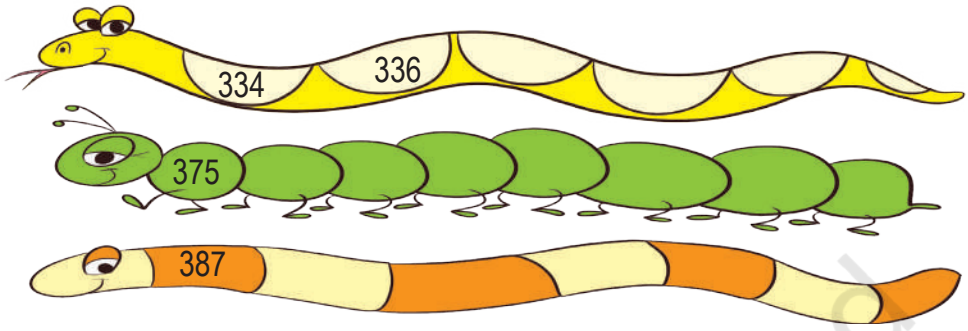
12 Give and Take

0333CH12

Add 2

Add 5

Subtract 5

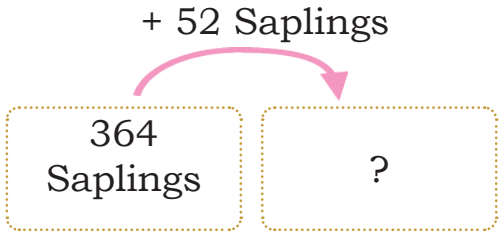


Add 6	234						
Subtract 6	357						
Add 9	288						
Subtract 9	331						

Kishan runs a big plant nursery where he puts different varieties of plants. Villagers often come and take saplings from him to grow in their houses.

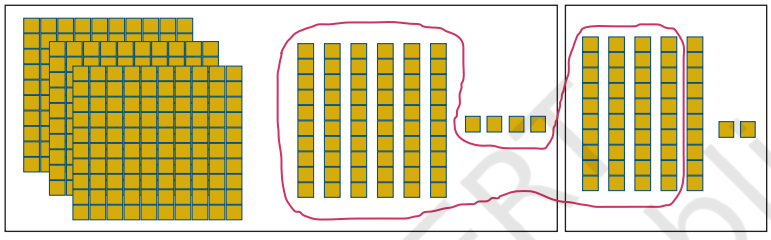
1. Kishan had 364 saplings of different herbs and flowers. Then he went to his friend's village and brought 52 saplings from there. How many saplings does he have now?

Let us draw a box diagram for the problem.



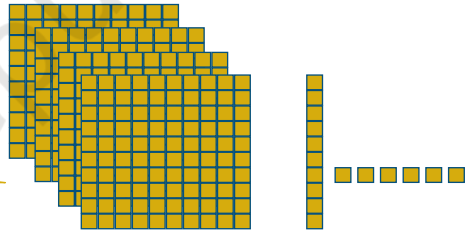
Let us use following systematic procedure to solve the problem.

Combine 10 tens to form 1 hundred



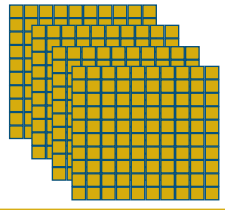
364 Saplings 52 Saplings

Combine 3 hundreds with 1 hundred to get 4 hundreds



How many saplings in all?

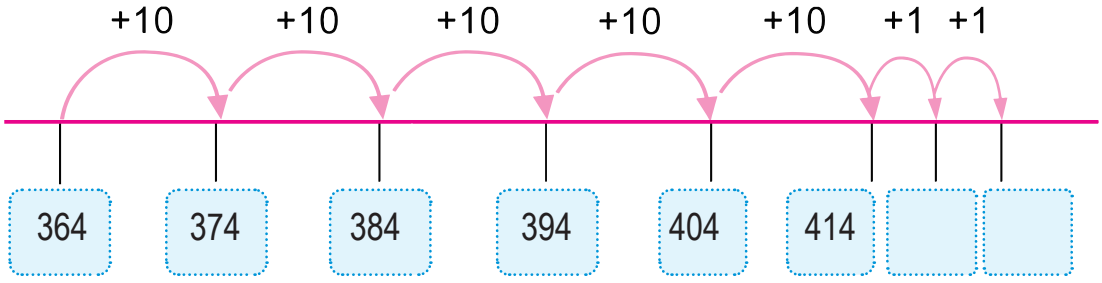
On adding 364 to 52 we get 4 hundreds, 1 ten and 6 ones

Hundreds	Tens	Ones
		
4	1	6

364 Saplings + 52 Saplings = _____ Saplings

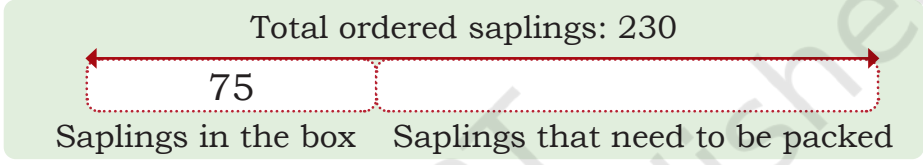
364 + 52 = _____

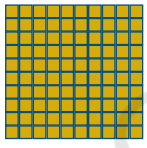
You can also use a number line to solve it.



2. Kishan has got an order to deliver 230 saplings to a school. He has packed 75 saplings in an open box. How many more saplings does he need to pack?

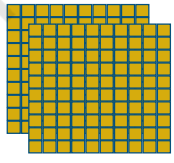
We write the given problem as a box diagram:



Let us use hundreds  , tens  and ones to solve the problem.

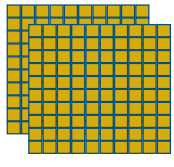
We have to subtract 75 from 230.

Hundreds	Tens	Ones
2	3	0



To take away 5 ones, we change 1 ten into 10 ones.

Hundreds	Tens	Ones

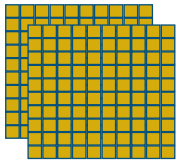
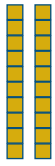


We can now take away 5 ones from 10 ones.

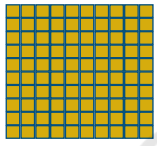
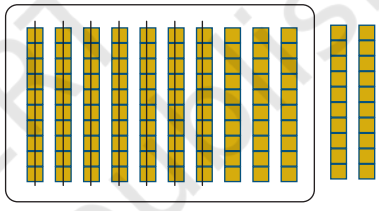
Teacher's Note: Encourage children to use the Dienes Blocks given at the end of the book and the number line for solving these problems. Children can do these problems by taking away and adding numbers in different ways. Discuss the relation between hundreds, tens and ones.

Subtracting 5 ones from 10 ones, we are left with 5 ones.

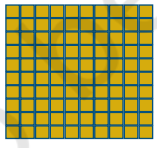
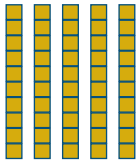
Now we have to take away 70. Remember opening a hundreds block gives us 10 blocks of 10s.

Hundreds	Tens	Ones
2	2	5
		

Take away 70.

Hundreds	Tens	Ones
		

We are left with this.

Hundreds	Tens	Ones
		

Kishan has ..... saplings now.

Teacher's Note: Before going into standard algorithms, students should be encouraged to use Dienes blocks and a number line for solving various problems with different strategies.

Let us Do

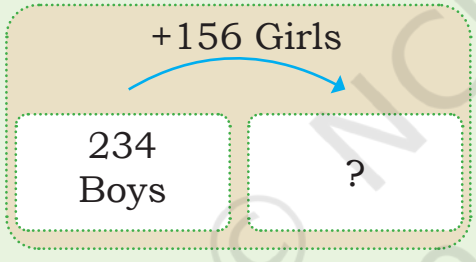
Draw box diagrams, as shown above to solve the following problems. Then use HTO blocks or a number line to solve the problems.

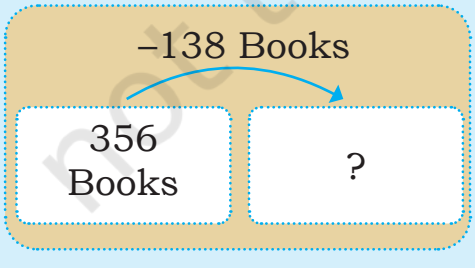
1. Kishan has 456 saplings in August. He distributed 63 saplings. How many saplings are left with him?

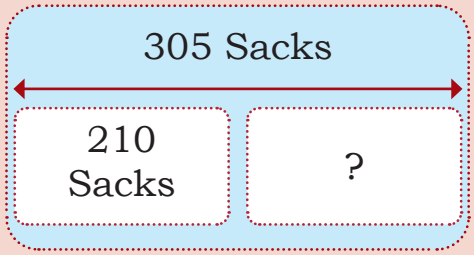
2. Kishan has a collection of 309 saplings. He gets 80 more saplings of flowering plants. How many saplings does he have now?

3. Kishan has 270 saplings of herbs and his friend has 36 saplings of herbs. How many more saplings does Kishan have than his friend?

Write word problems using the numbers given in the box diagrams below and solve them. You can take help from the pictures for appropriate contexts.







Use the grid below to solve the following questions. Colour your answers in the grid.

521	522	523	524	525	526	527	528	529	530
511	512	513	514	515	516	517	518	519	520
501	502	503	504	505	506	507	508	509	510
491	492	493	494	495	496	497	498	499	500
481	482	483	484	485	486	487	488	489	490
471	472	473	474	475	476	477	478	479	480
461	462	463	464	465	466	467	468	469	470
451	452	453	454	455	456	457	458	459	460

456 + 10 466

481 + 19 ____

489 + 21 + 15 ____

405 + 23 ____

467 + 51 ____

519 – 40 ____

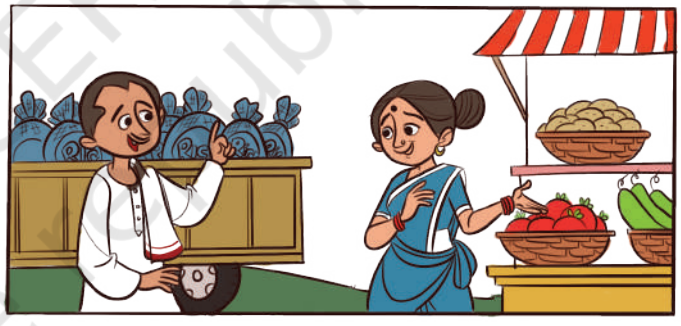
Teacher's Note: Encourage children to solve the problems using the above grid. Draw children's attention to the pattern of change in digits when adding 100,10 and 1.

Do as directed.

Add 100	Add 10	Add 1
269	269	269
369		
	289	

Add 100	Add 10	Add 1
454	454	454
		455

Many years ago, in the Village 'Jadupur', people exchanged things based on their need. Shaamu Kaka gave 5 sacks of rice to Dariya Didi. She in return gave 10 sacks of vegetables. Dariya Didi got 2 sarees from Bablu Dada by giving 5 sacks of onions.



Like this, people in the village exchanged their things. Shamu Kaka got vegetables for the rice he gave. Dariya Didi gave lots of onions to Bablu Dada for the two sarees. Discuss in class why people in this village had to give different quantities while exchanging things.

These days we use money in exchange for things we need. Notes and coins come in different values which are used to buy different things.

For example, one 10-rupee note can buy one *Hawa Mithai* or ten toffees.

One *Hawa Mithai* costs more than a toffee.

Salma buys two bottles of milk for ₹ 100. Kiran buys a basket of pomegranates for ₹ 100.

Circle the one that costs more: a milk bottle or a pomegranate?

Think of two things that we can buy using the same note.

Note	Things you can buy
	
	

Match the notes and coins in the two columns that have the same values.

Teacher's Note: Let children observe different features in original notes like personalities, monuments, embossed images for people with visual impairments, numbers and number names in different languages, etc. Discuss with children the connections between notes and coins.

Use the following notes and coins to buy the things given below. Find at least two ways of giving the money. You may use the notes and coins more than once.






Have you seen this note?

Draw as many notes of ₹ 100 as is equal to one ₹ 500 note.

How many ₹ 100 notes are equal to a ₹ 500 note? _____

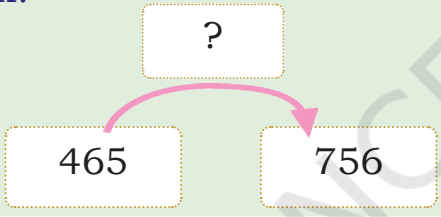
What things can you buy with ₹ 500 ?

_____

_____

In the morning, Peter uncle has ₹ 465 in his money box. By afternoon, he has ₹ 756. How much has he earned since morning?

Let us draw a box diagram for the problem.



My Estimation.

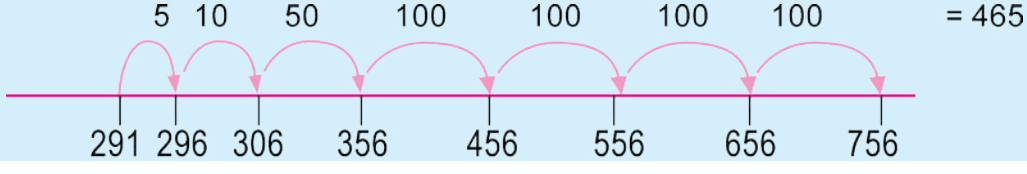
₹ _____

₹ 756

Take out ₹ 465

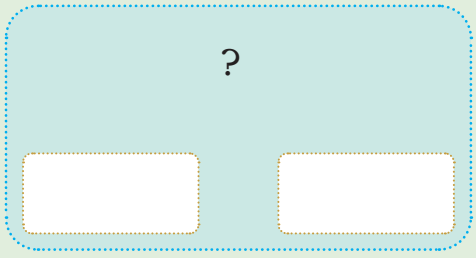
Difference between the two amounts = ₹ 291

He has earned ₹ 291 since morning.



Today, Peter uncle sold rice for ₹ 640 and sugar for ₹ 215. How much money has he earned from this sale?

Draw a box diagram for the problem.



My Estimate.

₹ _____

Use    or a number line to solve it.

Let us Do

Solve the following problems using box diagrams. Estimate the answers. Then use notes of ₹ 100s, ₹ 10s and ₹ 1s or a number line to solve the problems.

1. One day Peter uncle earned ₹ 650. The next day he earned ₹ 250 more. How much money had he earned by the second day?

Teacher's Note: Provide or ask children to make play money. Help children in exchanging denominations of hundreds, tens and ones and use them in solving problems.

2. Reena bought groceries for ₹ 209. She gave a ₹ 500 note to Peter uncle. How much money should Peter uncle return to Reena?

3. Shireen has ₹ 150 in her piggy bank. She puts ₹100 every week in her piggy bank. How much money does she have at the end of four weeks?

4. Peter uncle saved ₹ 250 in the first month, ₹ 125 in the second month and ₹ 350 in the third month. How much has he saved in these three months?

Estimate the answers to the nearest hundred. Share your thinking in the class.

Number Sentence	Nearest Hundred
156 + 34	
125 – 15	
105 + 195	
205 + 215	
500 – 395	
765 – 567	
505 + 405	

Teacher's Note: The teacher can create similar word problems to give children practice of adding and subtracting numbers. Motivate children to draw the problem before solving. Avoid giving keywords to children for solving word problems.

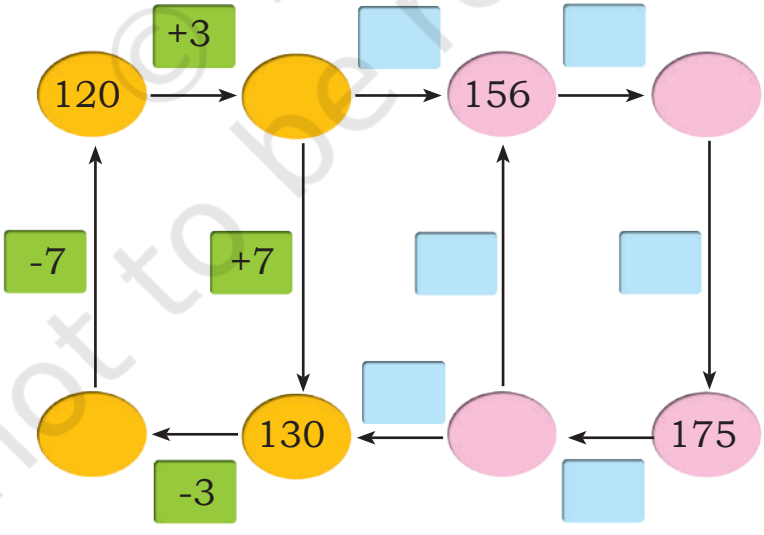
Compare the given problem statements in each row, without calculating. Circle the one that is more. Share your thinking in class.

373 + 23	373 + 40
240 + 10	204 + 10
900 + 9	890 + 60
345 – 45	345 – 54
800 – 8	700 – 8

Find the pairs that are equal. Share your thinking in class.

516 + 100	615 – 200	350 + 50
400 + 15	450 – 50	816 – 200

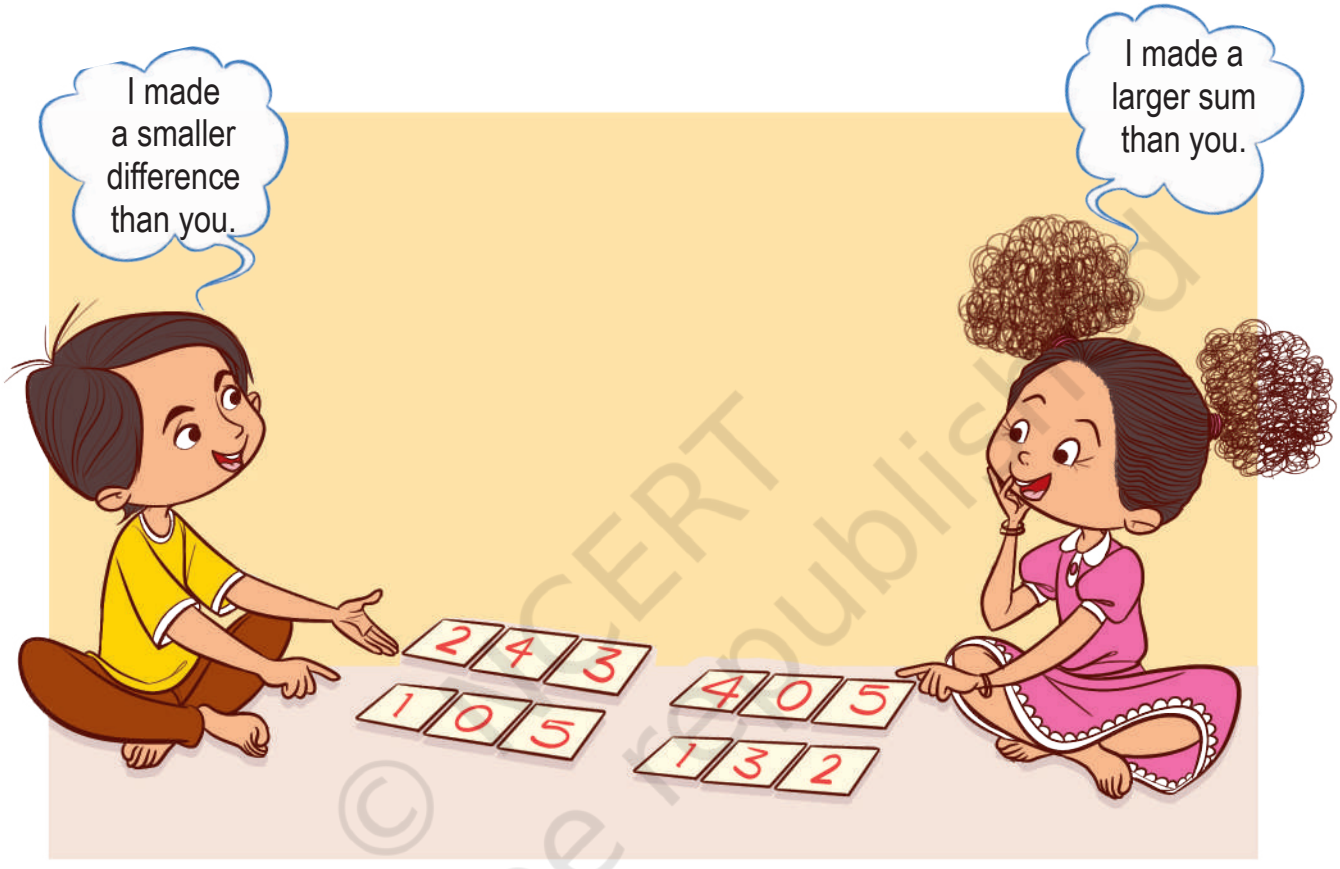
Fill in the boxes with appropriate numbers.



Teacher's Note: Encourage mental calculations in the class to solve the problems above. Ask children to frame many such questions.

Make cards with numbers 0-5. Make two 3-digit numbers using these cards. Add the two numbers and subtract the two numbers. Rearrange the cards and try to get a bigger sum. Rearrange the cards and try to get a smaller difference.

Check with your friends who has got the biggest sum and smallest difference.



Let us Do

(a) 265 + 9

(b) 405 + 56

(c) 825 + 175

(d) 600 – 82

(e) 568 – 5

(f) 653 – 356

Teacher's Note: Allow children to use the number cards from the book to create different numbers. It can be hard for children to do this task with pencil and paper only.