DEVI SANSTHAN
Dignity Education
Vision International
Leave no one behind

ALfA PROGRAM FOR FAST-TRACK & HOLISTIC
FLN: Foundational Literacy & Numeracy

ALfA Accelerating Learning for All

NUMERACY

Sunita Gandhi
Pedagogy & Program Creator

PATH

Pioneering
Academic
Transformative
Holistic Education

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NIPUN BHARAT

मेरी माटी
मेरा देश

सर्व शिक्षा अभियान
सब पढ़ें सब बढ़ें

www.dignityeducation.org

एक भी बच्चा छूटे ना, संकल्प हमारा टूटे ना।

Dear Teacher,

ALfA is based on some key principles:

Importance of RANDOM pairing

Children work only in pairs. Pairs are selected at random. In a mixed class of different age groups, you can create random pairs within different age groups.

Only one book between two children

Please have only one book per two children, so that they can learn the art of taking turns and working together on each module. The booklets are divided into small modules. These are designed for learning in pairs.

A faster way to learn and study

Children need to be taught this new skill of working in pairs by taking turns, not just by repeating after each other. Children should not be asked to come forward, rather they should do all the sharing with their partner only. With this, every child is able to do more work in less time.

A Holistic Education as per NEP 2020

Learning together develops citizenship and other essential qualities in children which are a part of the values prescribed by NEP 2020.

This is a very important component of holistic education. For shy, hyperactive and special needs children, 1:1 learning is more effective.

Multiple Grade Levels

Self Books are designed with the multifaceted needs of each child and different skill levels within the classroom in mind.

Why multiple levels? – Children who are in upper grades and struggle with a concept may work below their grade level. Some young children may progress beyond their grade level. There is no limit to development.

We salute you for your hard work towards making India litreate.

Dr Sunita Gandhi

Founder-CEO, DEVI Sansthan, India

Former Economist, The World Bank, USA

Ph.D. Cambridge University, UK

Chief Academic Advisor, City Montessori School, Lucknow (Family-run World's Largest School—A Guinness Record holder, and recipient UNESCO Prize for Peace Education)

Module Levels

This ALfA book has been divided into modules. There is no restriction on students as per class. In each module, a level is given.

LEVEL A	BALVATIKA & GRADE 1
	MODULES

1	2	3	4	7
11	15	19	24	27
34				

LEVEL B	GRADES 2 & 3
	MODULES

5	6	8	10	12	
14	16	17	20	22	
25	26	28	30	32	
33	35	40	43	44	45

LEVEL C	GRADES 4 & 5
	MODULES

9	13	18	21	23
29	31	36	37	38
39	41	42	46	47
48				

Read and understand ALfA books in pairs. After completing these, learners gain proficiency by completing their textbooks at a faster pace and with better understanding.

Module 1: We know numbers from 0 to 10
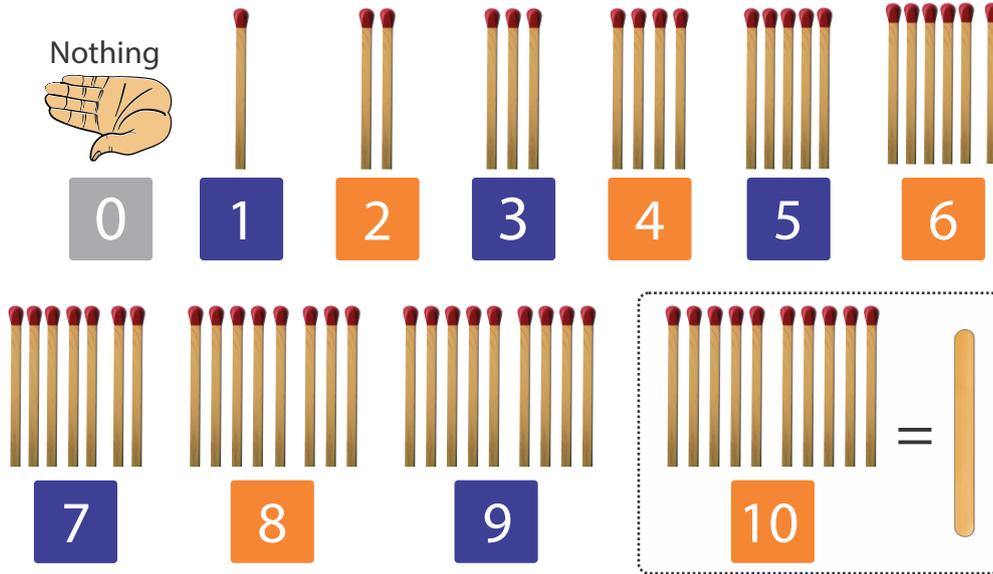
Nothing
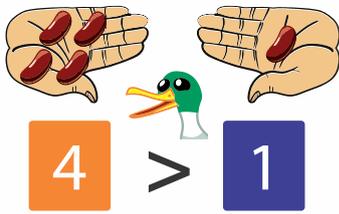
| 0 | 1 | 2 | 3 | 4 | 5 | 6 |

| 7 | 8 | 9 | 10 |

10 matchsticks = 1 ice cream stick

10 = |

Play: Tell, what else is less

4 > 1

The mouth of a hungry duck is always open towards the bigger number

2 < 3
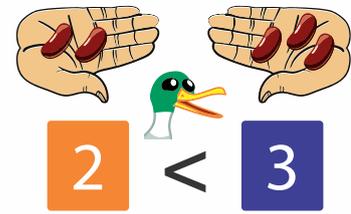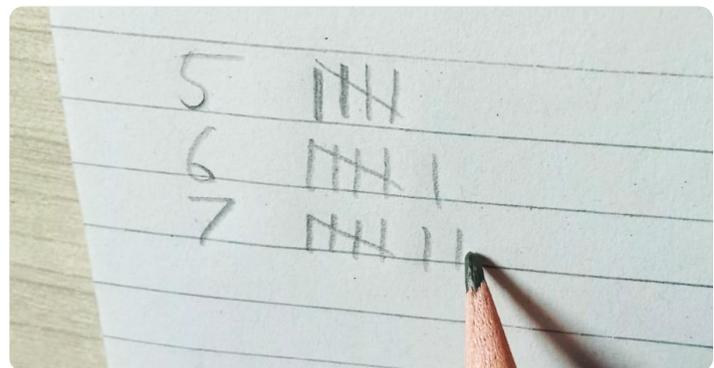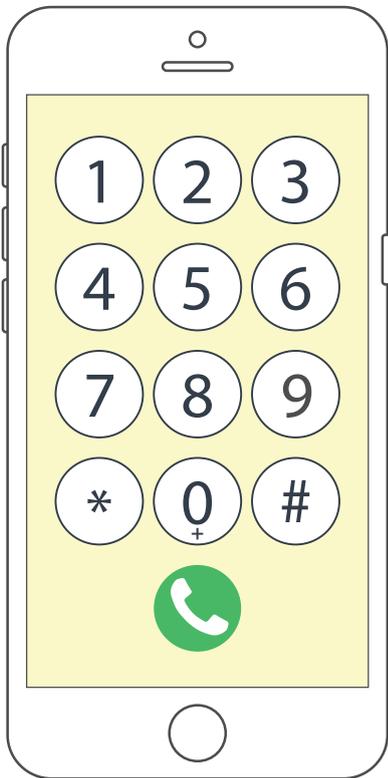
Module 2: We can write numbers from 1 to 10
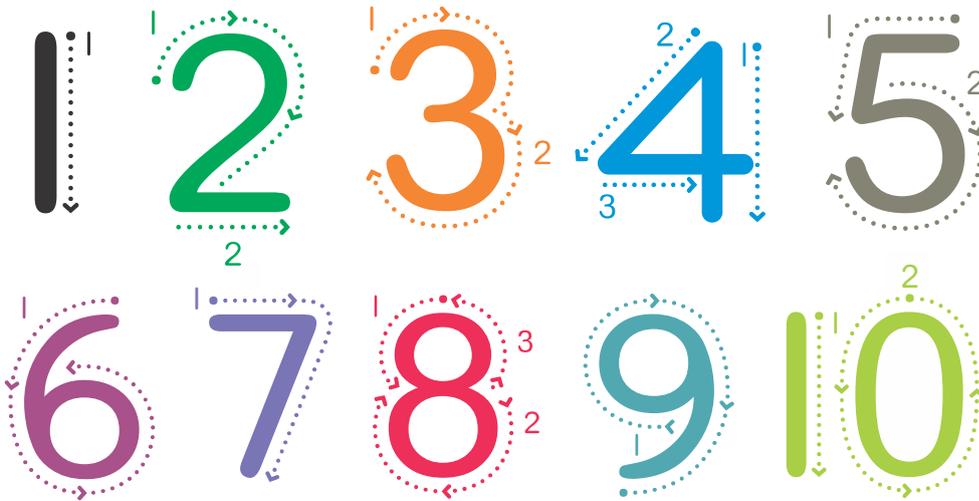
1 2 3 4 5
6 7 8 9 10

Tally line

1	I	6	IIII I
2	II	7	IIII II
3	III	8	IIII III
4	IIII	9	IIII IIII
5	IIII	10	IIII IIII

POLICE   **FIRE**   **AMBULANCE**

112 EMERGENCY

MOTHER (9)(7)(2)(4)(5)(0)(2)(6)( )( )

FATHER (9)(8)( )( )( )( )( )( )( )( )

Triggers: Pair up and take turns

a. Draw a mobile phone on paper or cardboard, and pretend to call each other.

b. Call 112 for emergency services such as police, fire and ambulance.

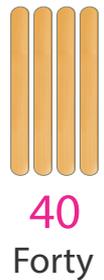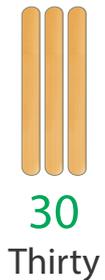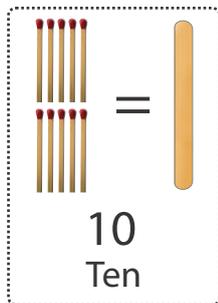c. Memorise and write down the numbers of other members of your family.

Module 4: We can count in tens

Level A

10	20	30	40	50	60
Ten	Twenty	Thirty	Forty	Fifty	Sixty

70	80	90	100
Seventy	Eighty	Ninety	Hundred
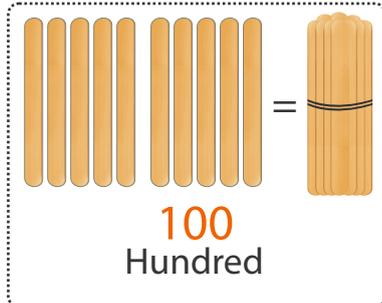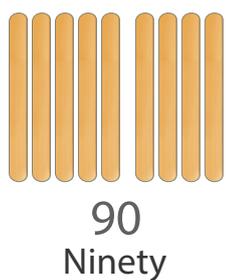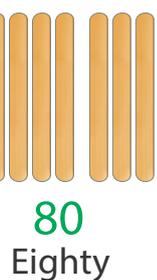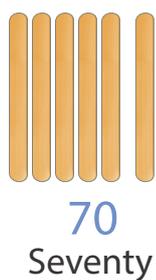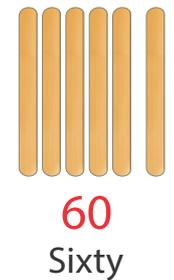
Triggers: Pair up and take turns

a. Count in tens with an ice cream stick, such as ten, twenty, thirty...............

b. One child can tell the number, the other child should take out an ice cream stick and show it.
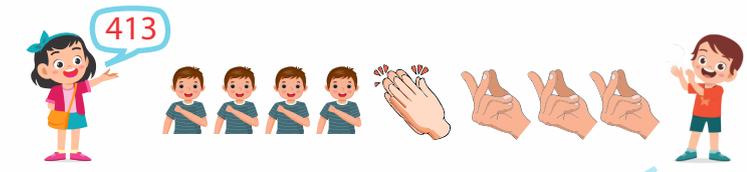
c. Practice writing this also.

Thirty

Increasing Order	30	40	50		
Decreasing Order	90	80	70		40

Module 5: We play claps and snaps

Thousands 1000	Hundreds 100	Tens 10	Ones 1
CLAP UP	SHOULDER TAP	CLAP	SNAP

Games: Shoulder Tap, Clap and Snap

Triggers: Pair up and take turns

a. One child can clap and snap and the other should tell what number was formed. Then switch roles.

b. One child calls out the number and the other shoulder taps, claps and snaps. Switch roles and repeat these exercises.

32

413

Thousands	Hundreds	Tens	Ones	Number
				5102

Shall I make a bigger number for you now?

Module 6: We know 3 and 4 digit numbers

Level B

Triggers: Pair up and take turns

a. Let a child take out some ice cream sticks and matchsticks and make a number and arrange them in the correct order. The second child can tell what number is formed.

b. Make new numbers by interchanging some sticks.
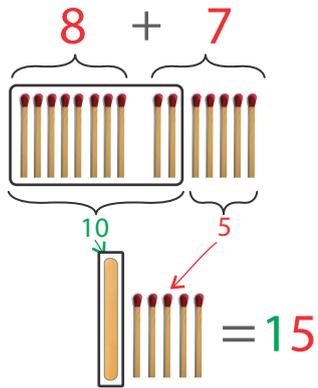
Thousands	Hundreds	Tens	Ones

Also show each other by clapping the number.

2   1   3   5

2000 + 100 + 30 + 5

= **2135**

Module 7: We can add 1 and 2 digit numbers

My brother gave me 8 bananas and sister gave me 7 bananas. How many bananas do I have now?

My father gave me 38 apples and my mother gave me 56 apples. How many apples do I have now?

$$8 + 7$$

$$= 15$$

Triggers: Pair up and take turns

a. Represent any two numbers with matchsticks and ice cream sticks. Always add the matchsticks (unit) first then add the ice cream sticks.

b. If there are more than ten matchsticks, then put the ten matchsticks in the bank and take an ice cream stick, and add that too.
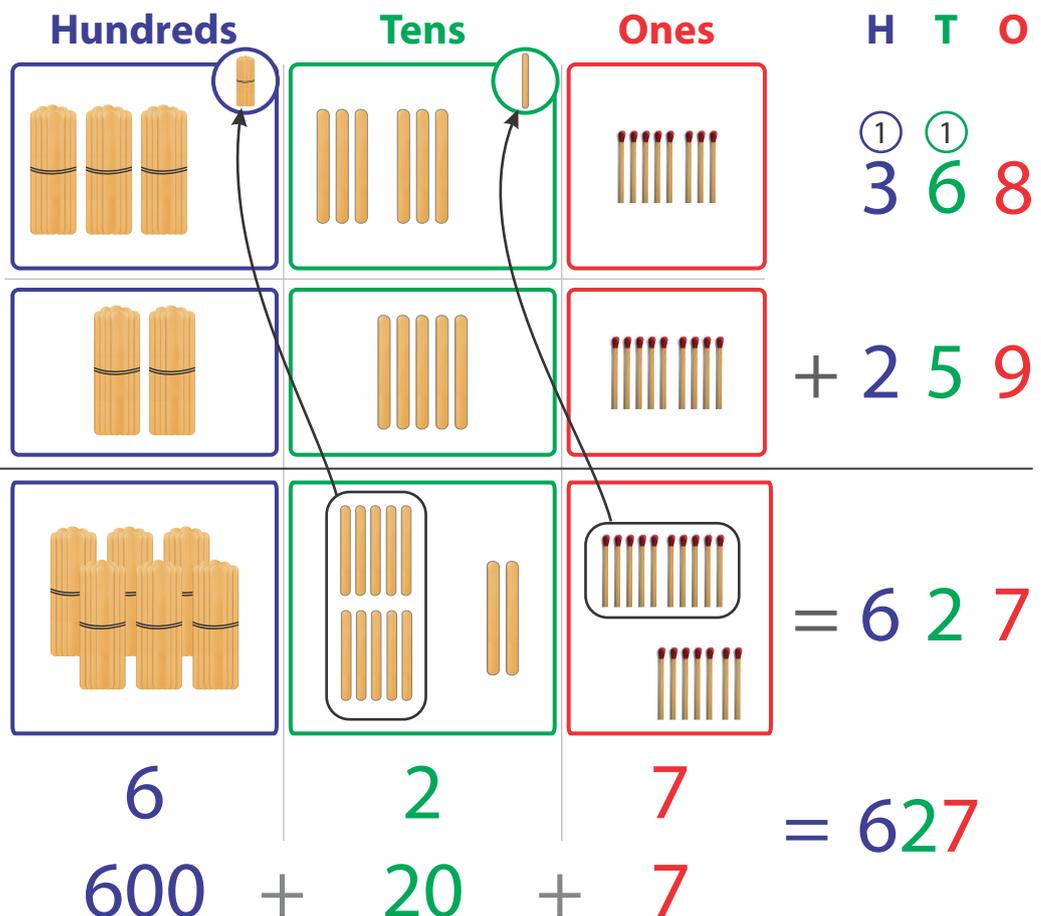
Tens	Ones		T	O
			①	
			3	8
			+5	6
			=9	4
9	4			

$$90 + 4 = 94$$

Module 8: We can add 3 digit numbers
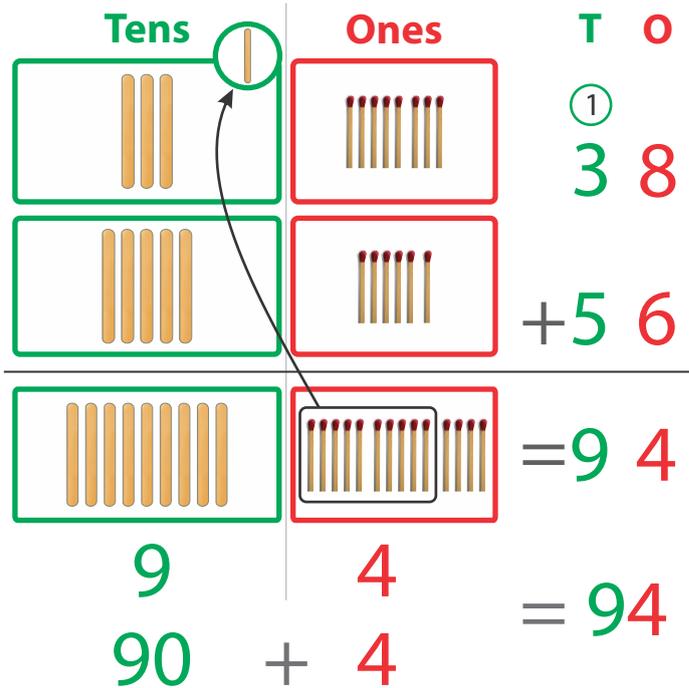
Triggers: Pair up and take turns

Solve the given questions, then create more questions for each other.

Ayaz has ₹368 and Alisha has ₹259. How much money do both of them have in total?

Hundreds	Tens	Ones		H	T	O
					①	①
				3	6	8
				+ 2	5	9
				= 6	2	7
6	2	7				

$$600 + 20 + 7 = 627$$

Module 9: We can add 4 digit numbers

2,457 people came to the zoo this morning and 1,564 people came in the afternoon. How many people came to the zoo today in total?

Thousands	Hundreds	Tens	Ones	Th H T O
				① ① ①
				2 4 5 7
				+ 1 5 6 4
				4 0 2 1
4	0	2	1	= 4021
4000	+ 000	+ 20	+ 1	

Module 10: We know magic squares

7	12	1	14	= 34
2	13	8	11	= 34
16	3	10	5	= ?
9	6	15	4	= ?
= 34	= ?	= ?	= ?	

Do you see something unique in this square?

Yes, adding each of its columns gives the same answer.

Oh wow! Adding each row also gives the same answer.

This magical square is so amazing.

Did you know?

A magic square was found in the thousands-year-old **Parshvanath Jain Temple** in India.

2	7	6	= 15
?	5	1	= 15
4	3	?	= 15
= 15	= 15	= 15	

Can you help me create another magic square?

I had 13 oranges. I gave 5 oranges to my friend. How many oranges do I have now?

Aliya had ₹52. She spent ₹16. How much money does Aliya have now?

13

13 – 5

13 leaves 5 left 8

| 13 | − | 5 | = | 8 |

Tens   **Ones**

x

xxxxxx

$$\begin{array}{cc} T & O \\ ^{4} & ^{1} \\ 5 & 2 \\ -1 & 6 \\ \hline 3 & 6 \end{array}$$

= 36

30 + 6

Triggers: Pair up and take turns

Represent the first number using ice cream sticks and matchsticks, then subtract the second number from it. If you don't have enough matchsticks, exchange an ice cream stick in the number bank for ten matchsticks, then subtract.

Radha has ₹541 in her bank account. She takes out ₹279. How much money is left in her account?

Hundreds   **Tens**   **Ones**

x x

xxxxxxx

xxxxx xxxx

$$\begin{array}{ccc} H & T & O \\ 4 & 13 & 1 \\ 5 & 4 & 1 \\ -2 & 7 & 9 \\ \hline 2 & 6 & 2 \end{array}$$

= 2 6 2

2   6   2

200 + 60 + 2

Triggers: Pair up and take turns

Solve the given questions. Then make other questions for each other to solve with matchsticks and ice cream sticks, and in the notebook. Make new questions for each other in your notebook and solve them with matchsticks and ice cream sticks.

I had ₹6,355. How much money is left after spending ₹2,437?

Thousands	Hundreds	Tens	Ones

Th H T O

$$\begin{array}{c} 6\ 3\ 5\ 5 \\ -\ 2\ 4\ 3\ 7 \end{array}$$

3	9	1	8
3000 +	900 +	10 +	8

$= 3\ 9\ 1\ 8$

212

4003

I solved the question. Now let me create new questions for you.

Triggers: Pair up and take turns

a. Make some paper notes. Set up a 'shop' by writing prices on common items.

b. Your friend comes and buys some things with those paper notes. Calculate the money correctly, then switch roles.

₹10 ₹100

₹20 ₹200

₹50 ₹500

₹10 ₹5 ₹2 ₹1

₹50 ₹5 ₹20 ₹10

What do you want to buy from my shop?

What is the total cost of purchasing two pencils and a pen?

Two pencils cost ₹10 and a pen costs ₹20, so the total amount was ₹30.

Take this, thank you!

Module 15: We know patterns

What comes next?

____ ____

____ ____

What will come now?

AA, BB, CC, AA, ___, ___

57, 67, 77, 57, ___, ___

Triggers: Pair up and take turns

a. A child makes sequences (patterns) from some objects. Then the second child continues that sequence.

b. Swap roles and make new sequences.

Module 16: We know tables

| 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |

0 1 2 3 4 5 6 7 8 9 10 11 12
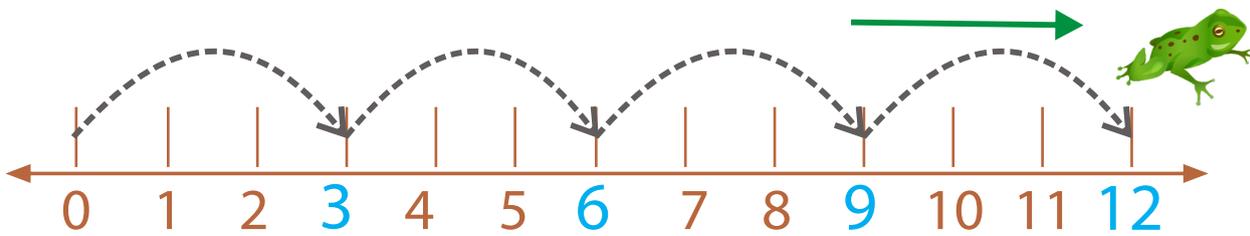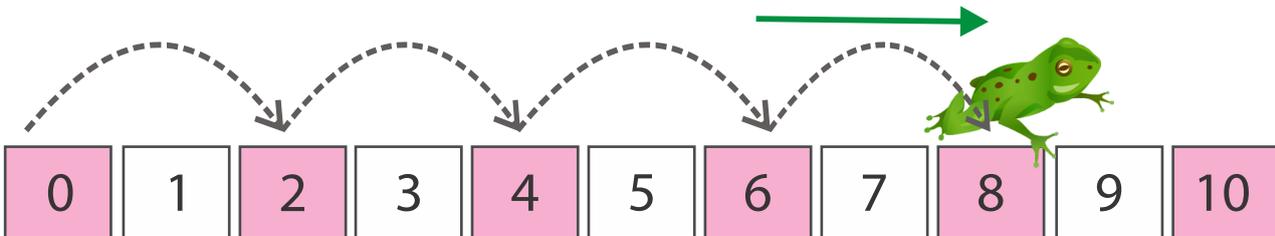
Come, let's make times tables for the numbers 2 to 10.

| Table of 2 | 2 | 4 | 6 | | | | | | |
| Table of 3 | 3 | 6 | 9 | | | | | | |

Module 17: We can multiply 1 digit numbers

What is multiplication?

Multiplication means adding a number repeatedly.

There are 3 mangoes on a plate. How many mangoes are there on 4 plates?

Here are 4 mangoes on a plate. How many mangoes are there on 3 plates?

$3 + 3 + 3 + 3$

$3 \times 4 = 12$

$4 + 4 + 4$

$4 \times 3 = 12$
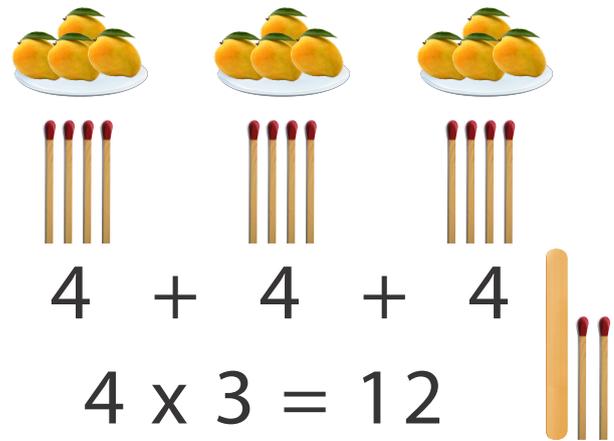
Triggers: Pair up and take turns

Create and solve new questions for each other with ice cream sticks and matchsticks.

$3 \times 4 = 4 \times 3$

The order of the problem has no effect on the solution. Is this always true for any number? Let's try creating new questions.

Module 18: We can multiply 2 digit numbers

One garland costs ₹25. Zoya bought 6 garlands. How much will Zoya pay the shopkeeper?

25 25 25 25 25 25
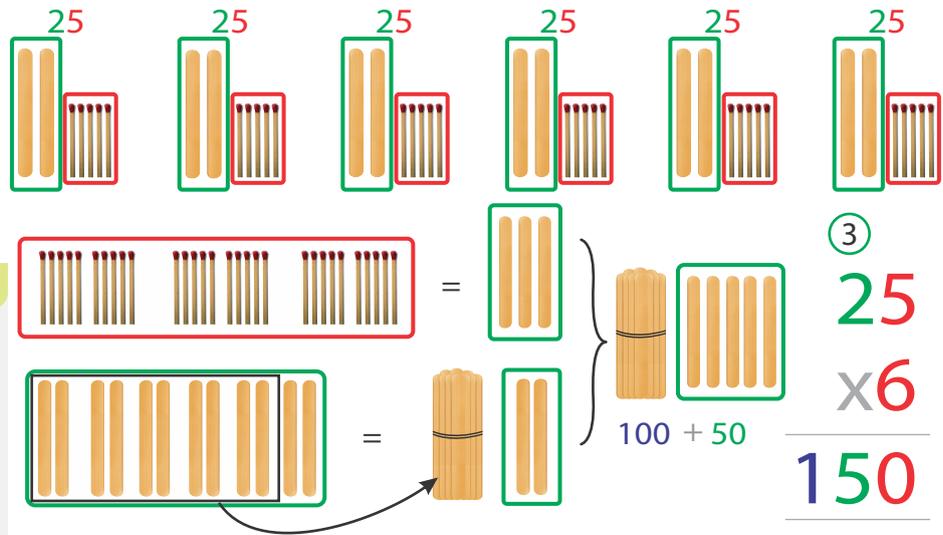
Triggers: Pair up and take turns

a. Remember, matchsticks have to be added first, then ice cream sticks.

b. If there are more than 10 matchsticks exchange with the bank.

$=$

$=$

$100 + 50$

③
25
×6
150

If the cost of one kurta is ₹199, then how much will you pay for 3 kurtas?

$199 = 200 - 1$

$199 = 200 - 1$

$199 = 200 - 1$

$= ₹600 - 3 = ₹597$
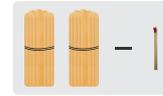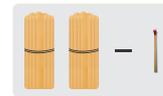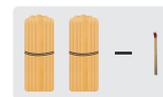
I can solve this in an easy way. ₹199 is one less than two hundred, hence..........

①
37
×12
74
①
37 ×
444

I have to distribute some matchsticks equally among my four friends. Will you help me please?

Total matchsticks	First friend	Second friend	Third friend	Fourth friend	Remainder	Every friend gets	Remainder
9						2	1
20						5	0
23						5	3

Triggers: Pair up and take turns

a. Start dividing the 9 matchsticks one by one into 4 parts in the manner shown above, so that there are equal number of sticks in each part. If some sticks are left after dividing equally, we call them the remainder, because they will not be divided equally.

b. Make questions for each other and solve them with the help of matchsticks.

Sudha has 51 toffees which she wants to distribute equally among her 4 friends. How many toffees will each friend get? How many will be left?
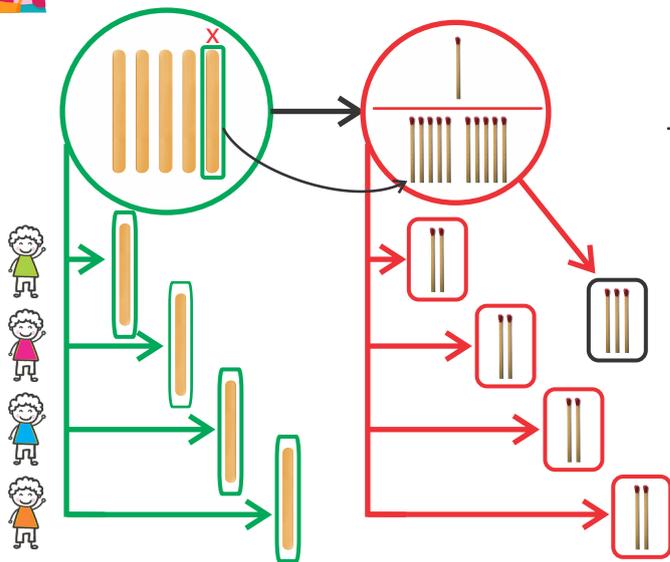
$$4 \overline{\smash{\big)}\, 5\,1} \quad 12$$
$$-4$$
$$1\,1$$
$$-8$$
$$0\,3$$

Each friend will get 12 toffees and 3 toffees will be left.
Come, now let me ask you a question.

Triggers: Pair up and take turns

To divide means to distribute into even parts. Start dividing from the left digit of the number, like in this question start dividing from tens. If there are some tens left, keep them in the number bank and exchange them for matchsticks, then take all the matchsticks and divide them into equal parts.

Module 21: We can divide 3 digit numbers

Yusra has 735 goats. She divides them equally among her two children. How many goats will each child get?

$$2 \overline{)735} \quad 367$$
$$-6$$
$$\quad 13$$
$$-12$$
$$\quad\; 15$$
$$\;\; -14$$
$$\quad\;\; 01$$

Module 22: We can solve money questions

₹5 — 20 grams

₹10 — 100 grams

₹20 — 1 litre

₹66 — 1 litre

What is the cheapest among all these? Which is the most expensive?

How much money do you need to buy 2 litres of milk?

How many litres of water can you buy for ₹100?

How many packets of noodles do you need to have 200 grams?

Triggers: Pair up and take turns

a. Bring some empty packets of chips, biscuits, namkeen, etc., from home.

b. Check the weight and price of every item.

Compare with other items. Make different types of questions for each other and solve them in your notebook.

Module 23: We can make tables and graphs

Apple	Banana	Mango	Litchi	Pear

1. How many children like to eat mango?
2. Which fruit do the most children like to eat?
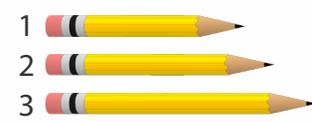3. Which fruit do fewest children like?

Triggers: Pair up and take turns

a. Create an empty table.
b. Go to your friends and ask for a fruit of their choice. Place a matchstick in the table of that fruit.
c. Similarly, make a graph as shown.
d. Ask each other questions about your tables, as given above.

TOTAL CHILDEN

Apple   Banana   Mango   Litchi   Pear

Module 24: We can estimate length

Who is tallest?

A   B   C

Which pencil is the longest?

1
2
3

1. Tell us the length and breadth of our classroom in steps?
2. How many elbows long is your table?
3. What else can you measure with your body parts?
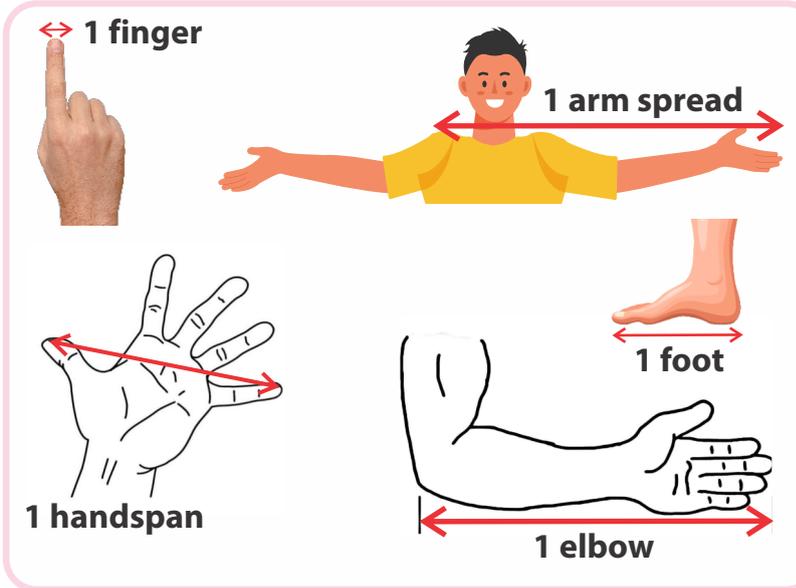
↔ **1 finger**

1 arm spread

1 handspan

1 foot

1 elbow

1 step
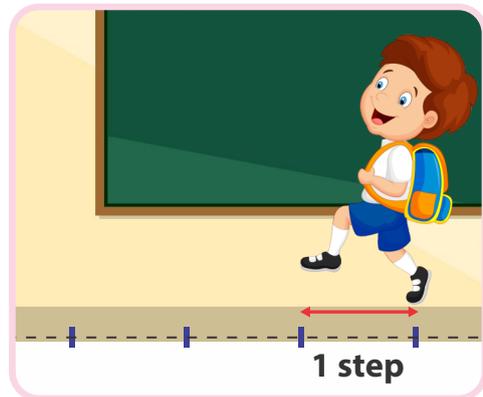
Tailor's Shop

1	Head	52 cm
2	Neck	?
3	Shoulder - Wrist	?
4	Waist	?
5	Hips	?
6	Inseam	?
7	Upper Thigh	?
8	Shoulder - Elbow	?
9	Neck - Waist	?
10	Upper Arm	?
11	Wrist	?
12	Waist - Knee	?
13	Waist - Ankle	?
14	Height	?

Height

100 centimetres
= 1 metre

cm
- 0
- 1
- 2
- 3
- 4
- 5
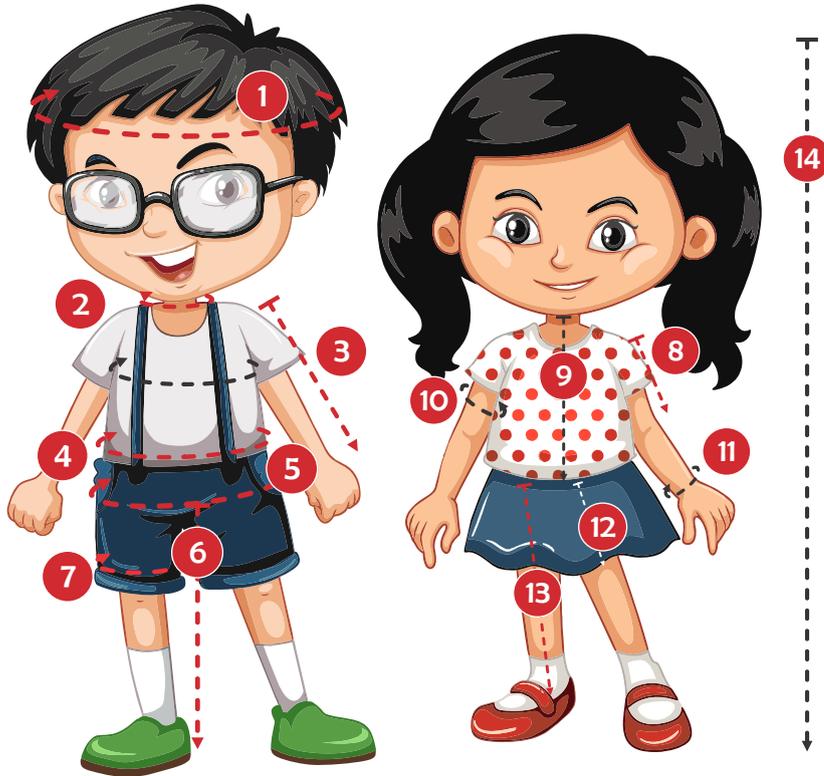
Triggers: Pair up and take turns

Measure like a tailor with a measuring tape and write down the above 14 measurements of each other in a notebook.
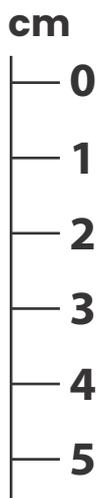
Which place is nearest to the mosque?

1000 metres (m) = 1 kilometres (km)

Field

2 km

Home

3 km 500 m

3 km

4 km

From home to the field or from library to the school, which distance is shorter?

School

2000 m

Library

1 km

Mosque

Temple

300 m
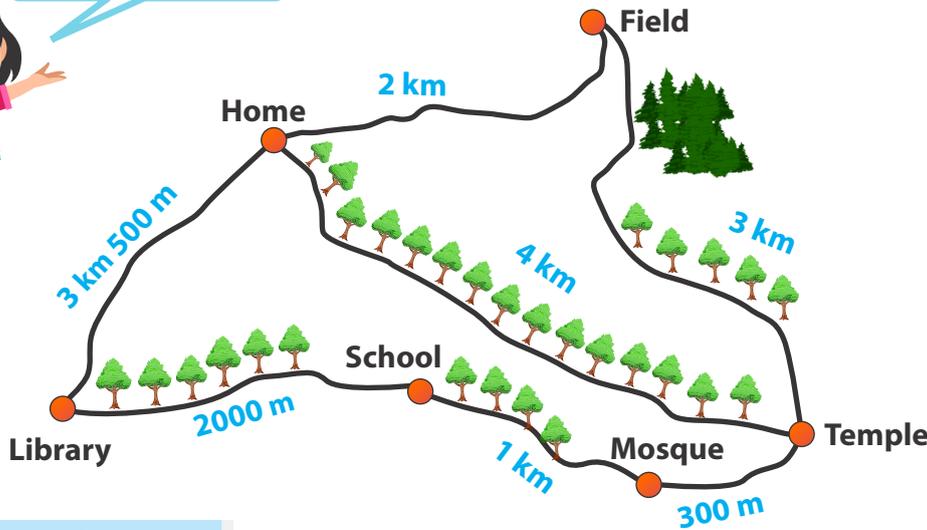
Triggers: Pair up and take turns

Make maps like this and ask each other questions.

1. The temple is 4 kilometres away from Rahul's house. How many metres is the distance between the temple and Rahul's house?
2. Ajay ran 3000 metres in the field. How many kilometres did he run?

Module 27: **We can estimate weight**

Level A

Triggers: Pair up and take turns

Hold different objects in your hands one by one, then estimate their weight. Take 4-5 items and arrange them in order from lightest to heaviest.

What is heavier?

What is lighter?
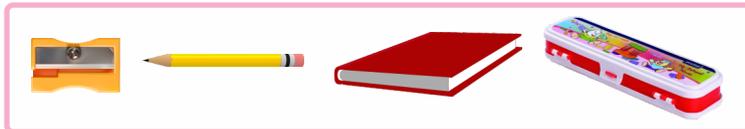
Let's make a scale

We will need a hanger, some string, and two bowls or paper cups.

Let us measure the weight of different objects and compare them.

200 g 100 g 200 g 200 g 200 g
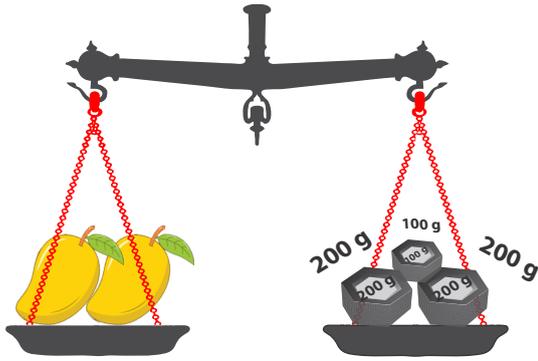
The mangoes weigh __500__ grams.

1 kg
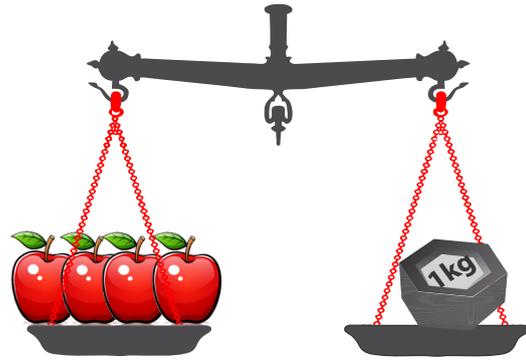
The apples weigh __?__ kg.

Let us also weigh it and check

Triggers: Pair up and take turns

Go to a nearby fruit or vegetable shop and practice weighing yourself (after taking permission).

Module 29: **We can solve problems with kilograms and grams**

Level C

We bought 5 kg potatoes and 1500 grams brinjal. What was the total weight of both the vegetables together?

1000 grams (g) = 1 kilogram (kg)

5 kg = 5000 grams
= 1500 grams

Total weight

5000 + 1500 = 6500 grams
= 6 kg 500 grams

Come! Let's Practice

5 kg	=	5000 g
?	=	3000 g
18 kg	=	?
?	=	7000g
4 kg	=	?
?	=	35,000 g

50 g 100 g 200 g 500 g 1 kg 2 kg

Now let me ask you a question. If I bought 250 grams of litchi, half a kilo of apples and 2 kilos of oranges, what is the total weight of fruits?

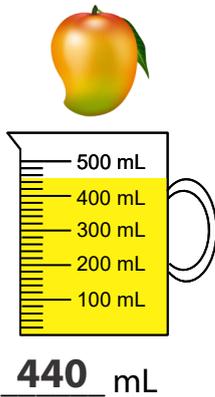How many litres is the volume of this bucket?
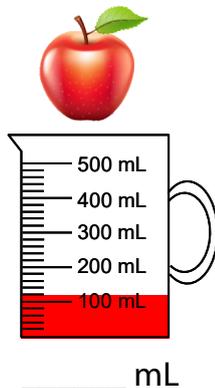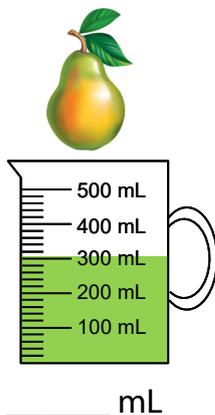
= 1L 1L 1L 1L 1L

1000 millilitres (mL) = 1 litre (L)

1L = 250 mL, 250 mL, 250 mL, 250 mL
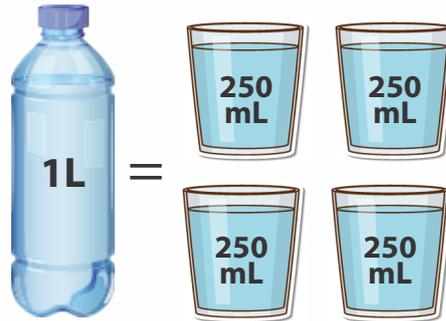
What is the volume of this bottle in millilitres?

250 mL + ___ + ___ + ___ = ?

Module 31: We understand volume

Level C

500 mL
400 mL
300 mL
200 mL
100 mL

440 mL

500 mL
400 mL
300 mL
200 mL
100 mL

_____ mL
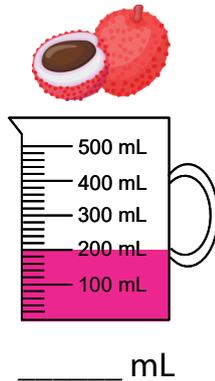
1. What is the total quantity of fruit juice?
2. Which fruit has the most juice?
3. Which fruit has 200 ml juice?

500 mL
400 mL
300 mL
200 mL
100 mL

_____ mL

500 mL
400 mL
300 mL
200 mL
100 mL

_____ mL

Come! Let's Practice

6 L	=	6000 mL
?	=	5000 mL
25 L	=	?
?	=	13,000 mL
11 L	=	?

Module 32: We understand the calendar

May
31 days

July
31 days

August
31 days

October
31 days

March
31 days

June
30 days

September
30 days

December
31 days

January
31 days

April
30 days

November
30 days

February
28 days
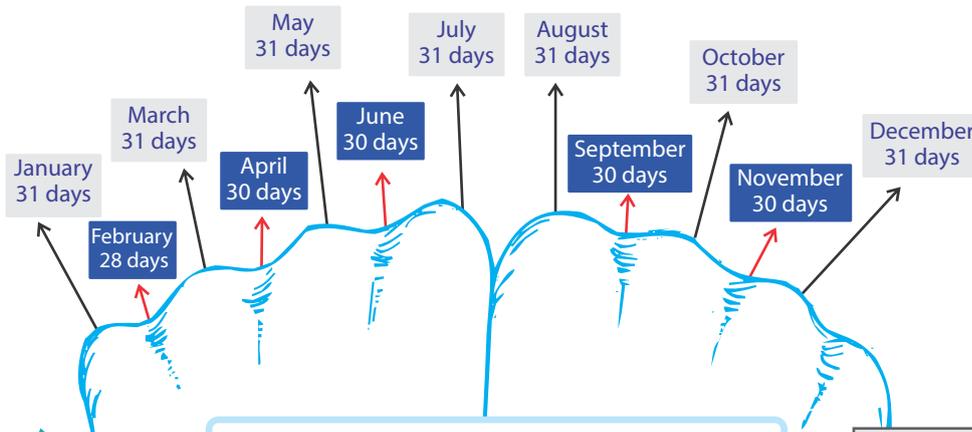
1. How many months are there in a year?
2. Which is the shortest month?

1. When is the first Wednesday in May?
2. How many Sundays are in the month of May?

MAY

SUN	MON	TUE	WED	THU	FRI	SAT
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

Triggers: Pair up and take turns

a. Find out which months have 31 days by counting the months on both fists.
b. Make a calendar for the current month in your notebook.
c. Look at the calendar and ask each other questions.

Module 33: We can tell the time

Hour Hand

Minute Hand
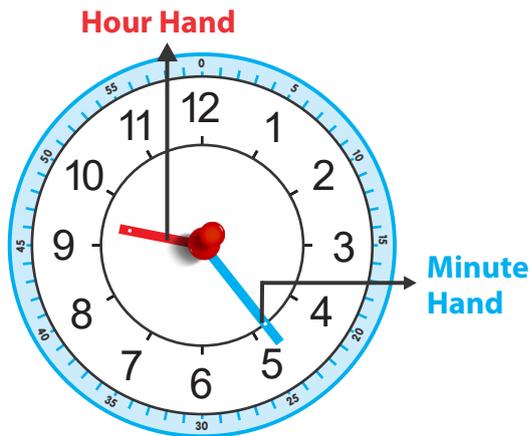
___9__ hours __24___ minutes

6:00
6 O'Clock
I wake up after sleeping
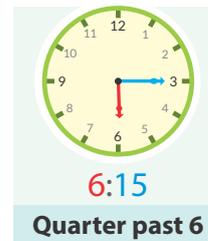
6:15
Quarter past 6
I brush my teeth and take a bath

6:30
Half past 6
I will have breakfast
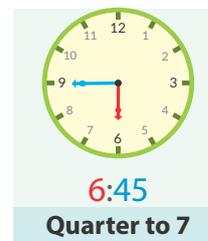
6:45
Quarter to 7
I leave for school

a. How long does it take you to go to school after having breakfast?
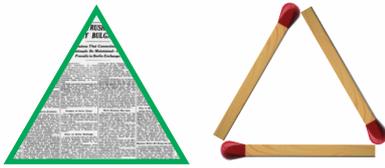b. What time do you go to school?
c. What time do you sleep?

Lunch 1:30   Sleep 9:45

Triggers: Pair up and take turns Make a clock. Show different times by rotating its needles. Ask your partner what time it is. Then swap roles.
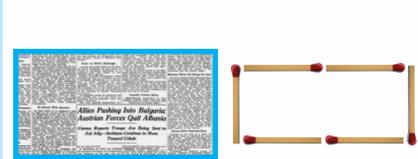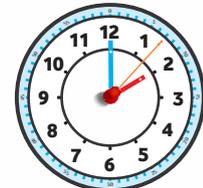
Triangle

Square

Rectangle

What things are round?

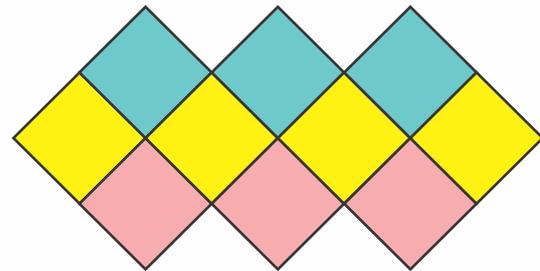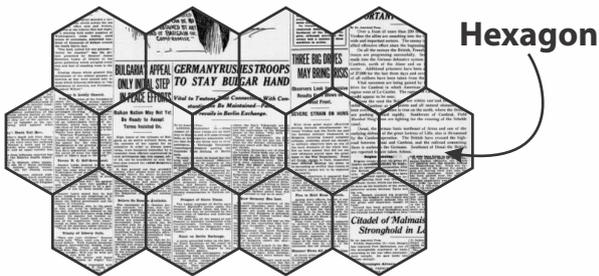**Sun**

## Round Things

Tyre

Clock

Earth

Roti

Plate

Triggers: Pair up and take turns

a. Use a bangle to draw a circle.

b. Make different shapes by cutting a newspaper. Also make shapes with matchsticks.

c. Identify different shapes and make a list of these objects in your notebook, such as window-square, door-rectangle, etc.

Module 35: We understand tessellation

Level B

Hexagon

In tessellation, we repeat a combination of shapes to form a pattern. Shapes are linked according to the following rules:

1. There should not be any empty space between shapes.

2. Shapes should not be placed on top of each other.
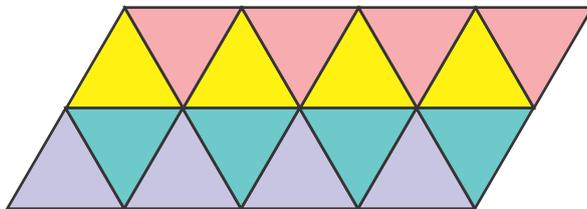
Triggers: Pair up and take turns

a. Cut out triangles, squares, and hexagons from newspapers or coloured papers.

b. Make different tessellations by arranging shapes in a pattern.

Module 36: We can measure the perimeter of shapes

A —— 4 cm —— B

1 cm   1 cm

D —— 4 cm —— C
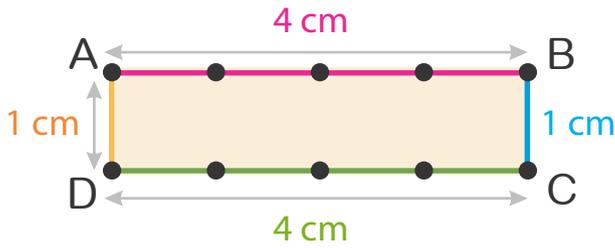
$= \underline{AB} + \underline{BC} + \underline{CD} + \underline{DA}$

$= 4 + 1 + 4 + 1$

Perimeter $= \underline{10\ cm}$

3 cm

2 cm

$= \_ + \_ + \_ + \_$

$= \_\_\_ cm$

3 cm   3 cm

2 cm

$= \_ + \_ + \_$

$= \_\_\_ cm$

0 1 2 3 4

$= 4\ cm$

Let us measure the perimeter of this rectangle with a thread.

15 m   5 m

15 m

5 m

My grandmother's garden is 15 metres long and 5 metres wide, which she wants to protect. How many metres will the fence be?
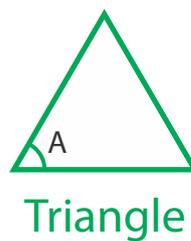
Module 37: We understand angles

A

A

Acute angle

B

R

Right angle

C
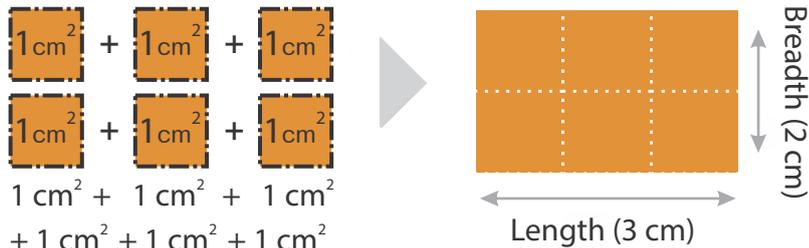
O

Obtuse angle

D
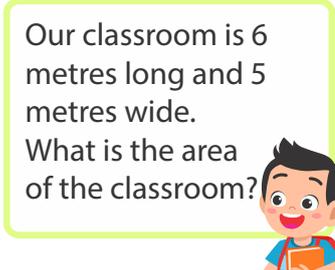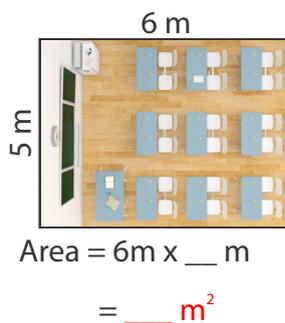
S

Straight angle

Triggers: Pair up and take turns

a. Make different angles by connecting ice cream sticks.

b. Make different two-dimensional (2D) shapes from ice cream sticks. Re-create these in your notebook and ask each other their angles.

A

Triangle

R

Square

O

Hexagon

Module 38: We can measure the area of shapes

$1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$

$1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$

$1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$ + $1\,cm^2$

Breadth (2 cm)
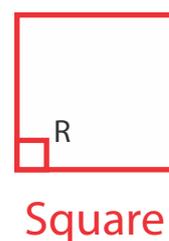
Length (3 cm)

Area of rectangle
Length x breadth
= 3 cm x 2 cm
= **6 cm^2**

Let's measure the area of some rectangles.

5 cm

3 cm

= 5 cm x 3 cm

= ____ cm^2

6 m

5 m

Area = 6m x __ m

= ___ m^2

Our classroom is 6 metres long and 5 metres wide. What is the area of the classroom?
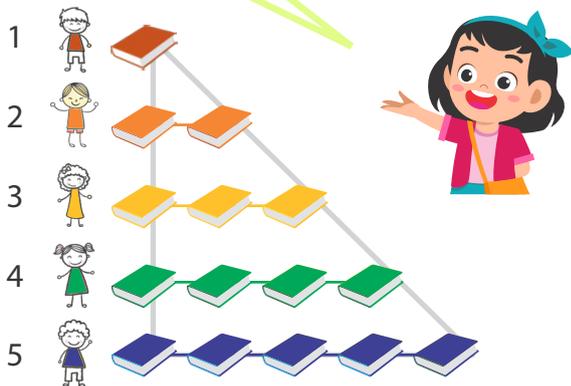
Triggers: Pair up and take turns

a. Cut out different rectangles from newspaper, measure their length and width and find their area.

b. Cut a rectangle to make two triangles. What is the area of each triangle?

c. Write similar questions for each other in your notebook and solve them.

6 cm

4 cm
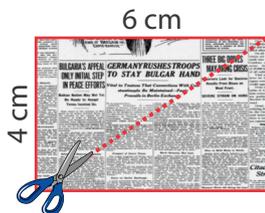
Area of triangle
= half rectangle
= $\dfrac{\text{length x breadth}}{2}$

$= \dfrac{6 \text{ cm} \times 4 \text{ cm}}{2} = \dfrac{24 \text{ cm}}{2} = 12 \text{ cm}^2$

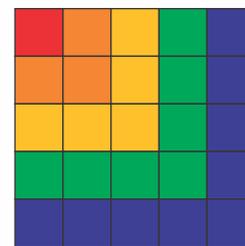## Module 39: We understand square numbers and triangular numbers

We are 5 sisters.
The first sister has 1 book.
The second sister has 2 books.
The fifth sister has 5 books.
How many books are there in total?

1

2

3

4

5

1   3   6   10   15   ?

+2   +3   +4   +5

Create and solve these types of square and triangular number problems in pairs.
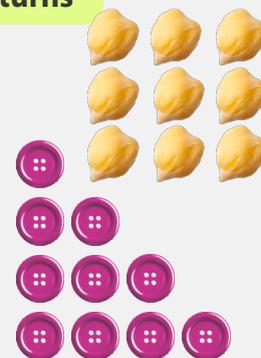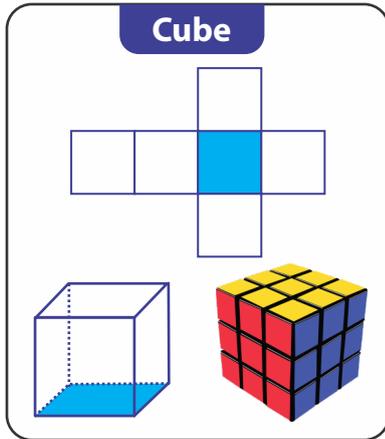
1   4   9   16   25   ?
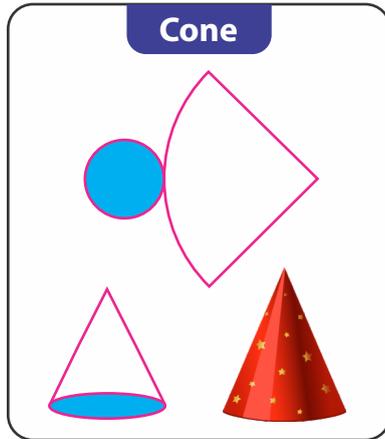
+3   +5   +7   +9

What will the next number be?

Triggers: Pair up and take turns

Take some buttons, tamarind seeds or gram seeds and make squares and triangles as shown in the picture. Count and tell how many buttons, tamarind seeds or gram grains were used.
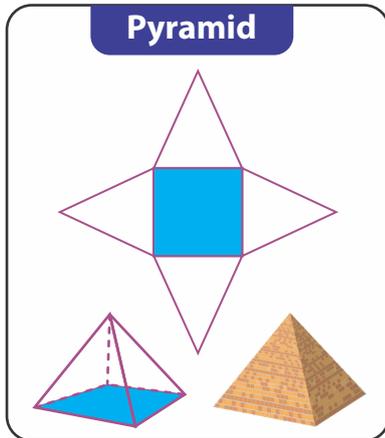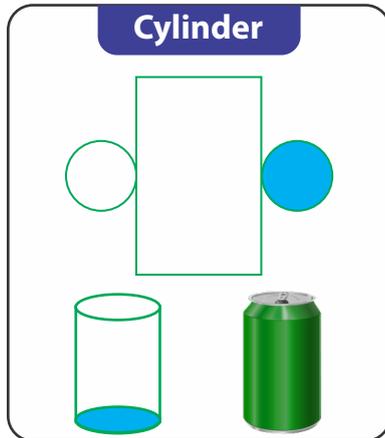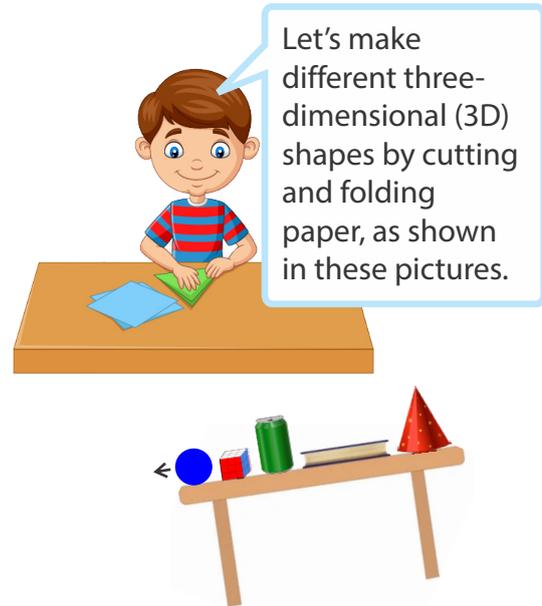
Module 40: We know 3D shapes

Cube

Cone

Pyramid

Cylinder

Let's make different three-dimensional (3D) shapes by cutting and folding paper, as shown in these pictures.

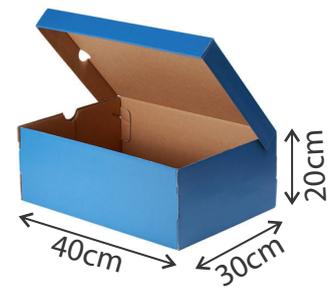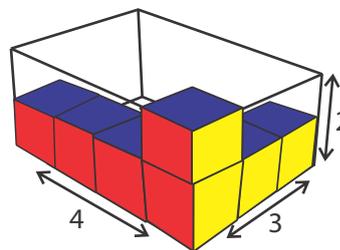### Triggers: Pair up and take turns

Examine the objects given above: Which object can 1. roll, 2. slide, 3. do both?

Write these down in your notebook and classify the objects.

Module 41: We know the volume of 3D shapes

Level C

A box is 40 cm long, 30 cm wide, and 20 cm high. A small cube of paper is 10 cm x 10 cm x 10 cm. How many small paper cubes can fit in this big box?

4 cubes in box length
3 cubes in box width
2 cubes in box height
4 x 3 x 2 = 24 cubes
Hence, the box can hold 24 cubes.

20cm
40cm
30cm

Triggers: Pair up and take turns

a. Bring an old box from home, measure its length, width and height and calculate its volume.

b. As shown in Module 40, make same-size paper cubes and see how many cuboids can fit in the box.
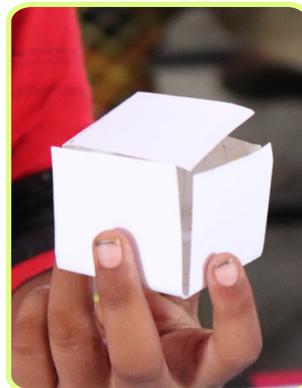
Volume of cuboid
= length x width x height

Volume of box
= 40 cm x 30 cm x 20 cm
= 24,000 cm^3
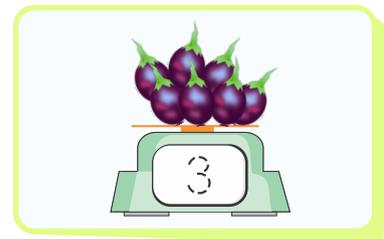
Note that
cm x cm x cm
= cm^3

Let's solve the story sum. And then make more such maths stories.

Mala goes to the market with ₹500.

1. Mala buys 4 litres of milk. The price of milk is ₹50 per litre. How much money does she have left now?

2. After this Mala buys 3 kg of brinjal whose price is ₹40 per kg. How much money does she have left now?

3. Now Mala buys half a dozen (6 eggs). The cost of each egg is ₹5. How much money does she have now?

4. Mala moves towards the house. The house is 1 kilometre away from the market. Till now she has walked 200 metres. How far does she have to go?
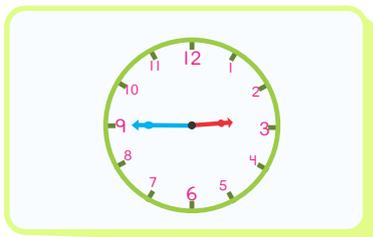
5. Mala looks at her watch. How many minutes are left until 3 o'clock?

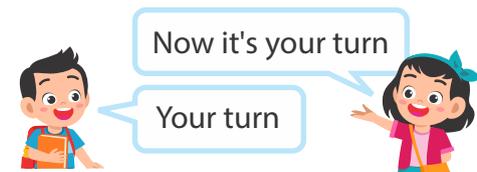6. Mala reaches home. She divides the remaining money equally among her three children. How much money did each child get?
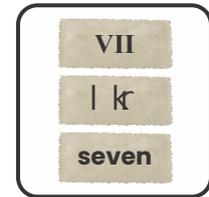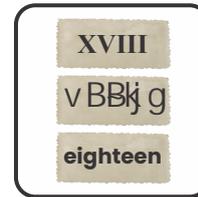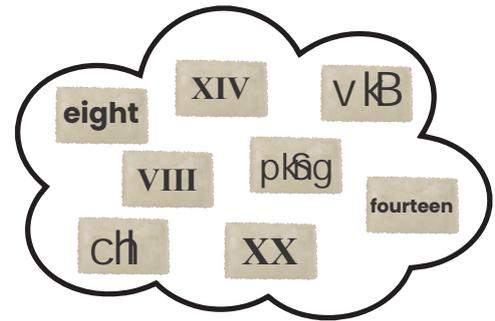
Triggers: Pair up and take turns

Read this story and solve the questions one by one.

Now let me tell a new story. Let's solve it together.

Module 43: We understand the numbers 1 to 20 in different ways

A	B	C	D	E
1	I	, d	ou	one
2	II	nks	Vw	two
3	III	r hu	Fkn	three
4	IV	pkj	Okjs	four
5	V	i kp	Qkbo	five
6	VI	N%	fl Dl	six
7	VII	l kr	l ou	seven
8	VIII	v kB	, 'V	eight
9	IX	ukS	ukbu	nine
10	X	nl	Vsu	ten
11	XI	X kj g	, syou	eleven
12	XII	ckj g	Vqs'o	twelve
13	XIII	r js g	FkVhzu	thirteen
14	XIV	pkSg	QksVhzu	fourteen
15	XV	i Uhg	fQlVhu	fifteen
16	XVI	l ksy g	fl Dl Vhu	sixteen
17	XVII	l =g	l ouVhu	seventeen
18	XVIII	v BBkj g	, 'VVhu	eighteen
19	XIX	muuhl	ukbuVhu	nineteen
20	XX	chl	Veslh	twenty

eight XIV v kB
VIII pkSg
chl XX fourteen

XVIII
v BBkj g
eighteen

VII
l kr
seven

Now it's your turn

Your turn

Write the numbers on the cards in Roman numerals, in English, and in your mother-tongue. Mix up the cards, then take turns to match them.

Module 44: We can understand written and oral numbers

21	twenty one	41	forty one	61	sixty one	81	eighty one	1000	one thousand
22	twenty two	42	forty two	62	sixty two	82	eighty two	2000	two thousand
23	twenty three	43	forty three	63	sixty three	83	eighty three	3000	three thousand
24	twenty four	44	forty four	64	sixty four	84	eighty four	4000	four thousand
25	twenty five	45	forty five	65	sixty five	85	eighty five	5000	five thousand
26	twenty six	46	forty six	66	sixty six	86	eighty six	6000	six thousand
27	twenty seven	47	forty seven	67	sixty seven	87	eighty seven	7000	seven thousand
28	twenty eight	48	forty eight	68	sixty eight	88	eighty eight	8000	eight thousand
29	twenty nine	49	forty nine	69	sixty nine	89	eighty nine	9000	nine thousand
30	thirty	50	fifty	70	seventy	90	ninety	10000	ten thousand
31	thirty one	51	fifty one	71	seventy one	91	ninety one		
32	thirty two	52	fifty two	72	seventy two	92	ninety two		
33	thirty three	53	fifty three	73	seventy three	93	ninety three		
34	thirty four	54	fifty four	74	seventy four	94	ninety four		
35	thirty five	55	fifty five	75	seventy five	95	ninety five		
36	thirty six	56	fifty six	76	seventy six	96	ninety six		
37	thirty seven	57	fifty seven	77	seventy seven	97	ninety seven		
38	thirty eight	58	fifty eight	78	seventy eight	98	ninety eight		
39	thirty nine	59	fifty nine	79	seventy nine	99	ninety nine		
40	forty	60	sixty	80	eighty	100	hundred		

Triggers: Pair up and take turns

a. One child can say any number from one to ten thousand. The second child can write it down and show the first.

b. Swap roles and keep practicing.

Triggers: Pair up and take turns

a. Fold a paper into several equal parts. Then colour in some parts.

b. Ask your partner what fraction of the paper has been coloured in?

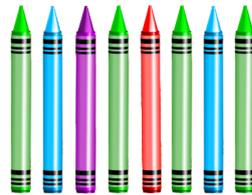c. Solve the questions given in this module in your notebook.

$\dfrac{1}{2}$ $\dfrac{2}{3}$ $\dfrac{5}{6}$ $\dfrac{3}{8}$
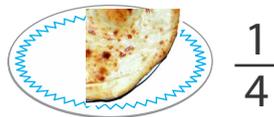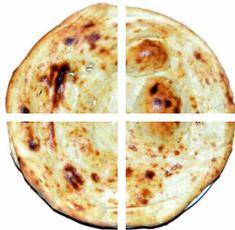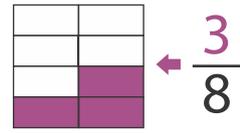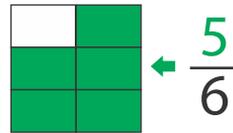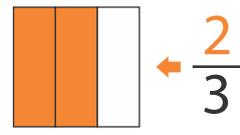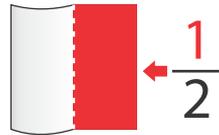
If I have to divide a roti among four people, I will divide it into four equal parts.

Everyone will get $\dfrac{1}{4}$ (one quarter) of a roti.

$\dfrac{1}{4}$

If 4 out of 8 crayons are green, what fraction is green (that is, what part of the whole).

4 out of 8 green $= \dfrac{4}{8}$

? out of 8 blue $= \dfrac{?}{8}$

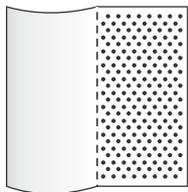**Module 46:** We understand equivalent fractions
Level C

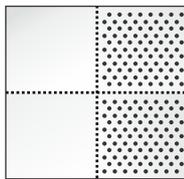Let's fold the paper in half. Then colour one part with a pencil.

Let's fold this paper in half again. How many parts are coloured in now?
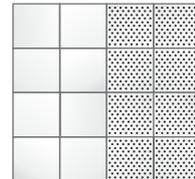
Let's see how many more times we can fold this paper in half.

$\dfrac{1}{2}$ 1 part / 2 total parts $=$ $1\times2=$ $2\times2=$ $\dfrac{2}{4}$ 2 parts / 4 total parts $=$ $2\times4=$ $4\times4=$ $\dfrac{8}{16}$ 8 parts / 16 total parts

If any fraction is multiplied or divided by the same number both above and below, then it remains equivalent.

$\dfrac{1}{3} \overset{\times 2}{\underset{\times 2}{=}} \dfrac{2}{6}$ $\dfrac{5}{10} \overset{\div 5}{\underset{\div 5}{=}} \dfrac{1}{2}$

Let's practice creating equivalent fractions

$\dfrac{1}{3} = \dfrac{?}{6}$
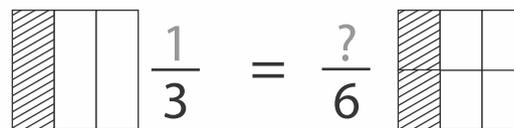
$\dfrac{1}{5} = \dfrac{2}{?}$ $\dfrac{3}{4} = \dfrac{?}{12}$ $\dfrac{4}{6} = \dfrac{2}{?}$ $\dfrac{5}{15} = \dfrac{?}{3}$

One decimal

$| = $ $= \dfrac{1}{10} = 0.1$

If 1 matchstick = 10 kidney beans
So 1 kidney bean is 0.1.

How to write 1.5 as a fraction?

$\dfrac{10}{10} = 1$

$\dfrac{5}{10} = 0.5$

$\dfrac{10}{10} + \dfrac{5}{10} = \dfrac{15 \div 5}{10 \div 5}$

$= \dfrac{3}{2} = 1.5$

Tens **Ones** **Decimal**

21.3

Come, let's practice

$2.5 = \dfrac{?}{2}$ $1.2 = \dfrac{?}{5}$

Module 48: We can convert fractions to decimals **Level C**

If a cake is to be divided in equally among five people, what portion will each person get?

$\dfrac{1}{5} = \dfrac{2}{10} = 0.2$

Triggers: Pair up and take turns

Take 10 kidney beans in exchange for one matchstick. Divide these ten kidney beans equally as shown.

I have to divide five rotis equally among two people. How much will each person get?

$\dfrac{5}{2} = 2.5$

Come, let's practice

$\dfrac{1}{2} = ?$ $\dfrac{3}{5} = ?$

$\dfrac{7}{2} = ?$ $\dfrac{12}{5} = ?$

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