THINKING MATHEMATICS 2A

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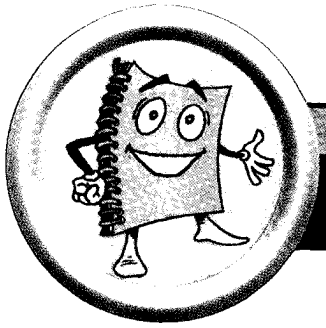


PREFACE

The *Thinking Mathematics* series is based on the latest primary mathematics syllabus. In this series, the concrete-pictorial-abstract format is used to introduce new concepts. The spiral approach is used throughout the series to consolidate and link mathematical concepts.

The series comprises textbooks and workbooks at each level. Textbook 2A comprises 7 units. Each unit is prefaced by a relevant situation from daily life and followed through with the following sections:

Do You Know? Relevant, *thought-provoking* questions are asked with regard to the real life situation presented at the beginning of each unit to *link mathematics and daily life.*

Let's Learn New concepts are explained in a straight-forward and interesting way. *Creative* and *critical thinking,* as well as *an awareness of problem-solving strategy* are developed through worked examples in this section.

Let's Try Guided sums are provided to confirm and consolidate the concepts taught.

Practice Exercises involving *critical* and *creative thinking* are provided to encourage pupils to look for alternative strategies in problem-solving and thus help them grow into *independent and active learners.*

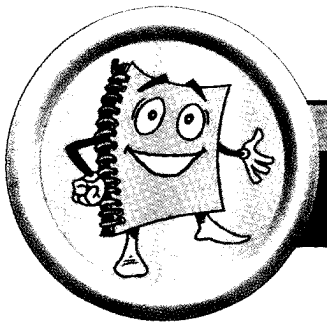
In-Class Activity Active participation from pupils and creative *application of mathematics to daily life,* including *IT* and hands-on activities, helps to develop lifelong learners. Cooperation and team spirit are encouraged through *group and pair work.*

Fun With Maths Mathematical concepts are extended beyond the boundaries of the classroom and brought into the realm of exploration and experiment to further engage and develop the pupil's interest in mathematics.

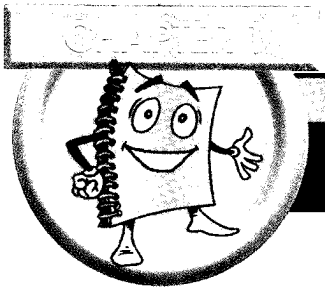
Other features of this series include:

National Education This is integrated, whenever applicable, into the series to promote a sense of nationality in the pupils.

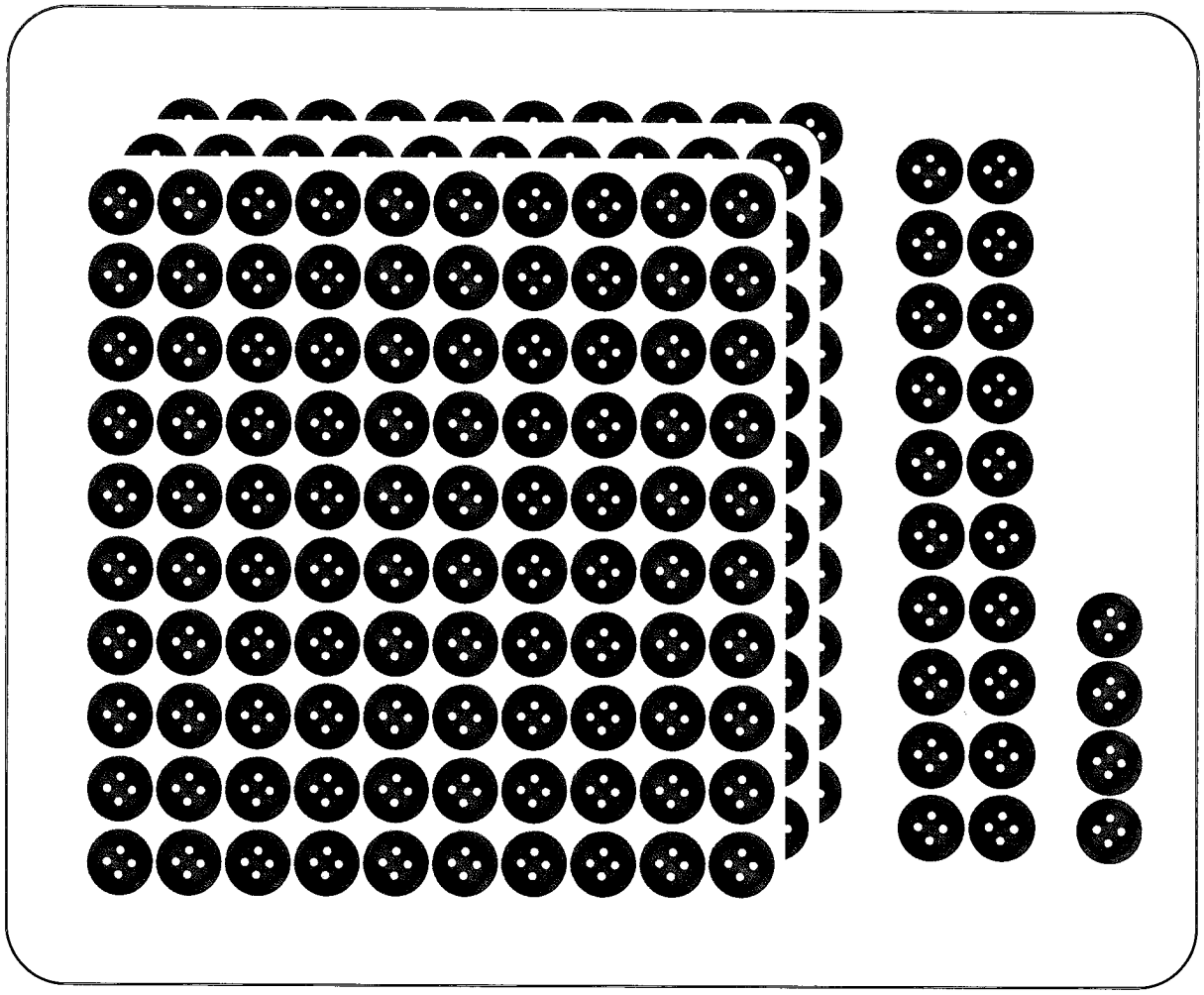
Revision Exercises are provided to assist pupils in reviewing the concepts and skills learnt as part of examination preparation.



CONTENTS



NUMBERS TO 1000



There are more than 100 buttons.

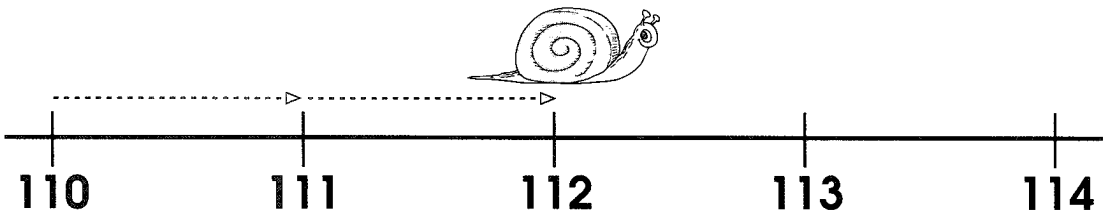
Do You Know?

What can you count in hundreds in a library?

Let's Learn

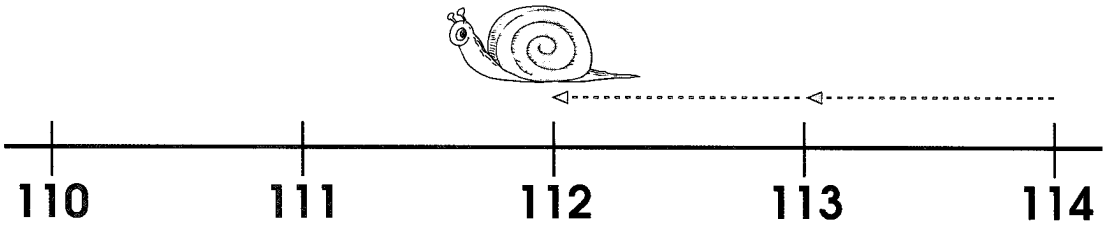
Counting to 1000

Counting in ones



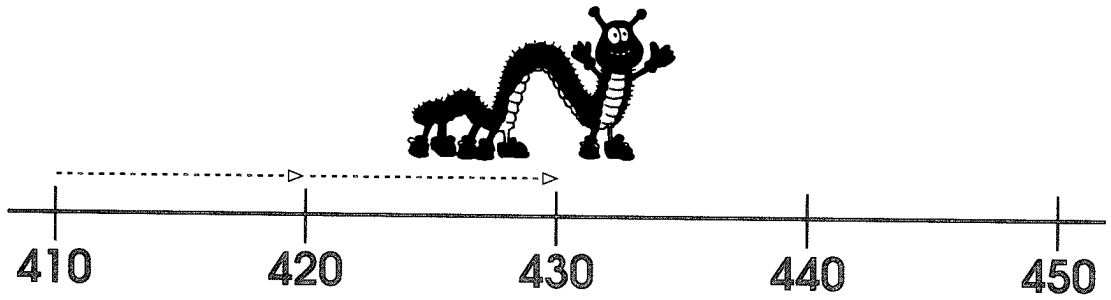
Count forward: One hundred and ten, one hundred and eleven, one hundred and twelve.....

Can you help Mr. Snail count backwards?

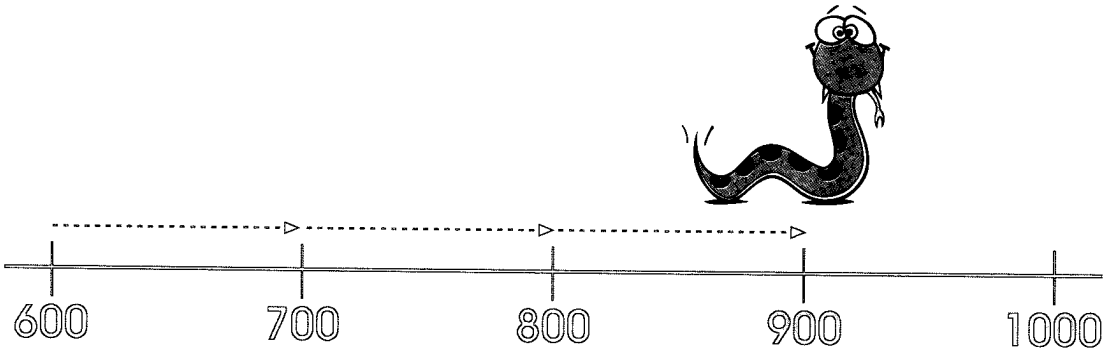


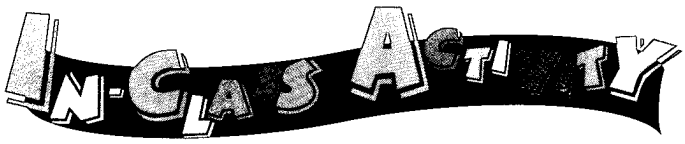
Count backwards: One hundred and fourteen, one hundred and thirteen, one hundred and twelve.....

Counting in tens



Counting in hundreds



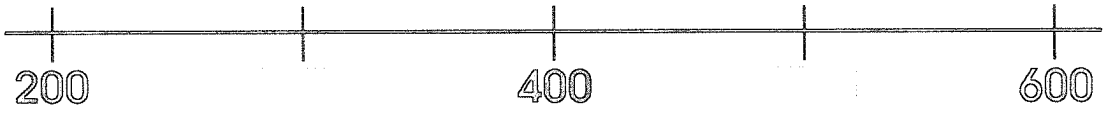


Work in pairs. Take turns counting backwards in hundreds from 1000 to 100. Use a watch to time yourselves. How long did you take? Was your partner faster than you?

Let's Try

1. Fill in the boxes.

a)



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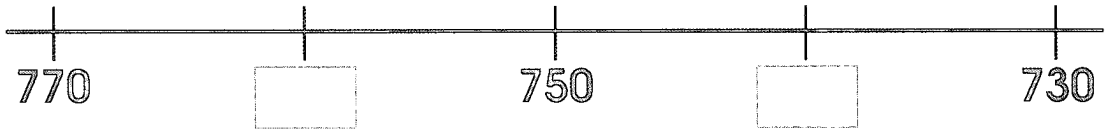


2. Fill in the blanks.

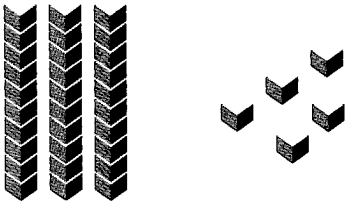
a) Four hundred and ten, four hundred, three hundred and ninety, _____.

b) 415, 425, _____, 445.

Let's Learn

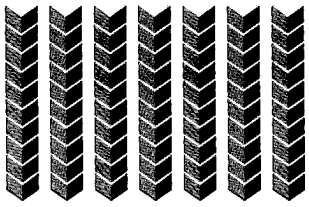
Hundreds, Tens and Ones

Previously, we learnt how to count till 100.



Tens	Ones
3	5

Thirty-five

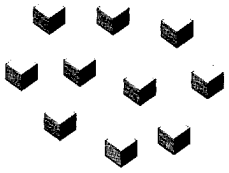


Tens	Ones
7	0

Seventy

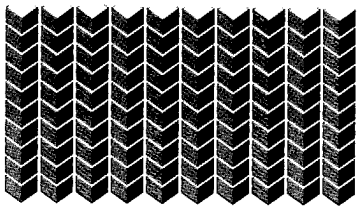
Now we will learn to count till 1000.

Understanding Hundreds, Tens and Ones

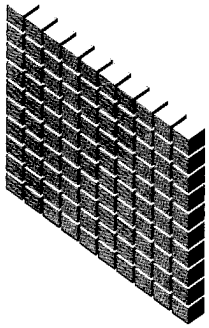


10 ones

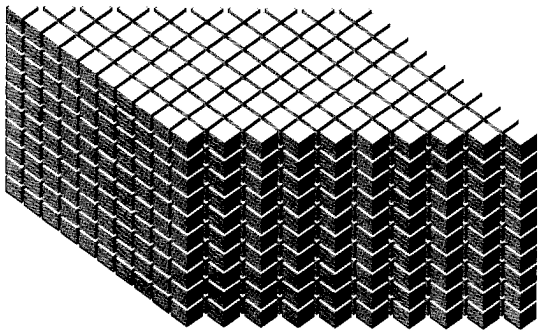
1 ten



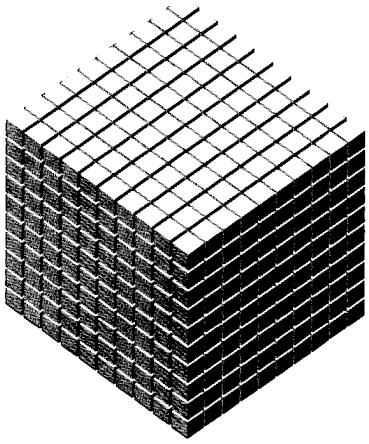
10 tens



1 hundred

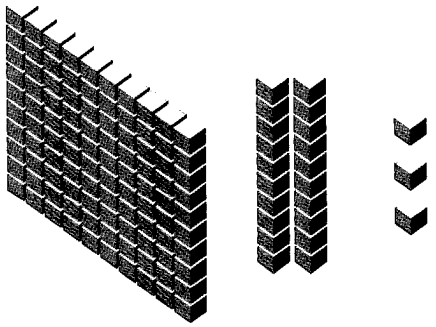


10 hundreds



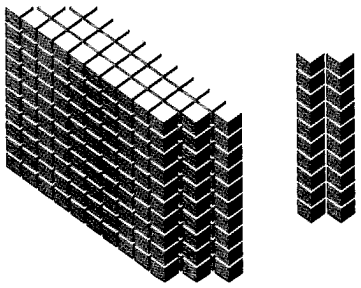
1 thousand

Learning place values



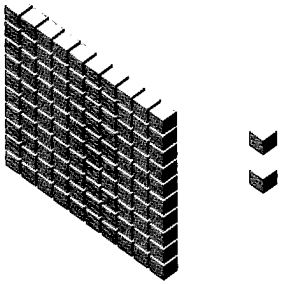
H	T	O
1	2	3

We write: **123**
We say: **One hundred and twenty-three.**



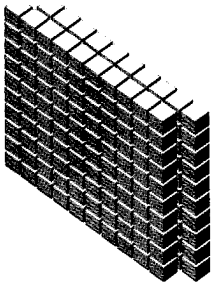
H	T	O
3	2	0

We write: **320**
We say: **Three hundred and twenty.**



H	T	O
1	0	2

We write: **102**
We say: **One hundred and two.**



H	T	O
2	0	0

We write: **200**
We say: **Two hundred.**

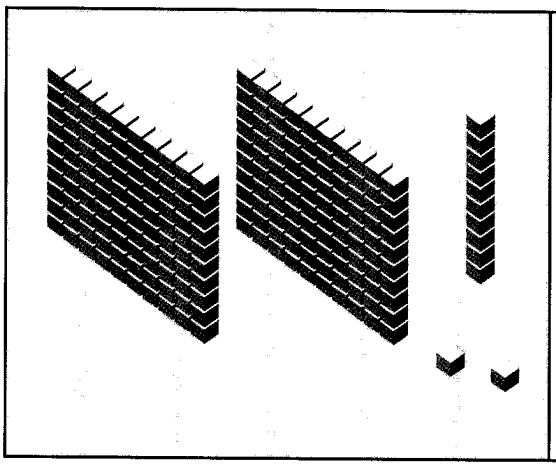
In-Class Activity

Bring a box of toothpicks to school. Use rubber bands to make groups of ten toothpicks. Count the total number of toothpicks that you have.

Let's Try

1. Write in hundreds (H), tens (T) and ones (O) as shown in first example. Then write the number in words.

a)

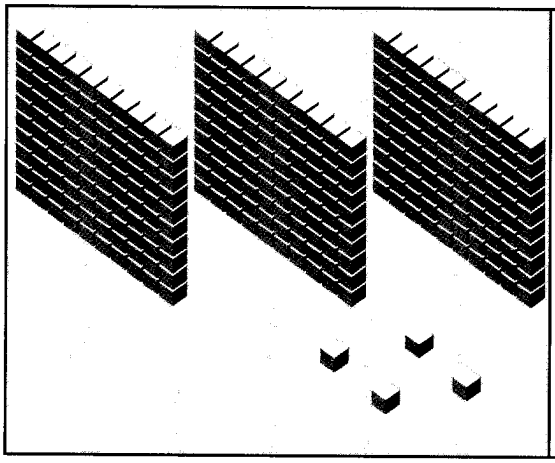


H	T	O
2	1	2

_____

_____

b)



H	T	O

_____

_____

Practice 1A

1. Write in words.

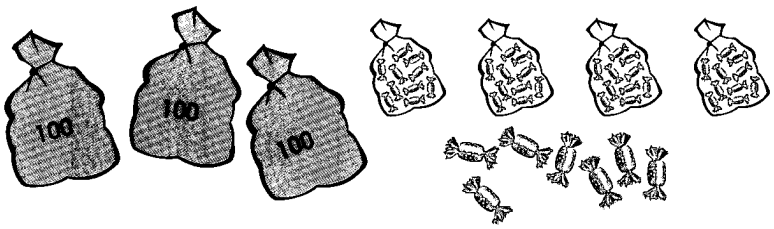
a) 83: _____

b) 129: _____

c) 777: _____

2. Ring to show the number given. Complete the table.

One hundred and fifteen



H	T	O

3. Write the correct value in the box provided.

a)

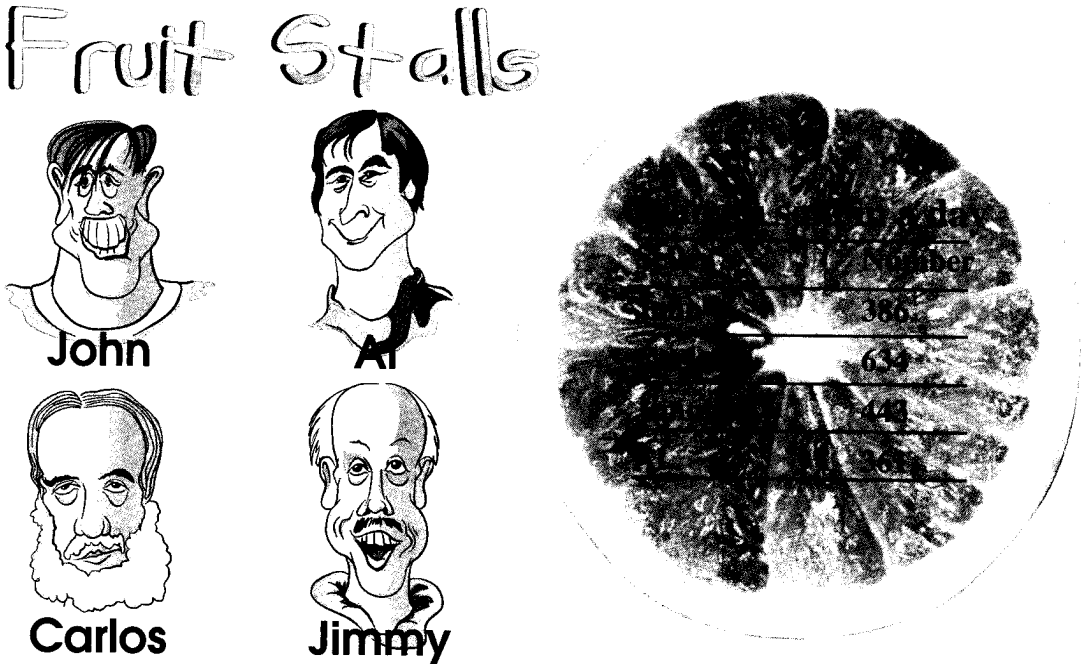
Hundreds	Tens	Ones

b)

Hundreds	Tens	Ones

Let's Learn

Comparing numbers



Who sold the most oranges?

Look at the 'hundreds' digit:

Biggest → **3**86
634
443
361

Compare the digits in the hundreds place.

Carlos sold the most number of oranges.

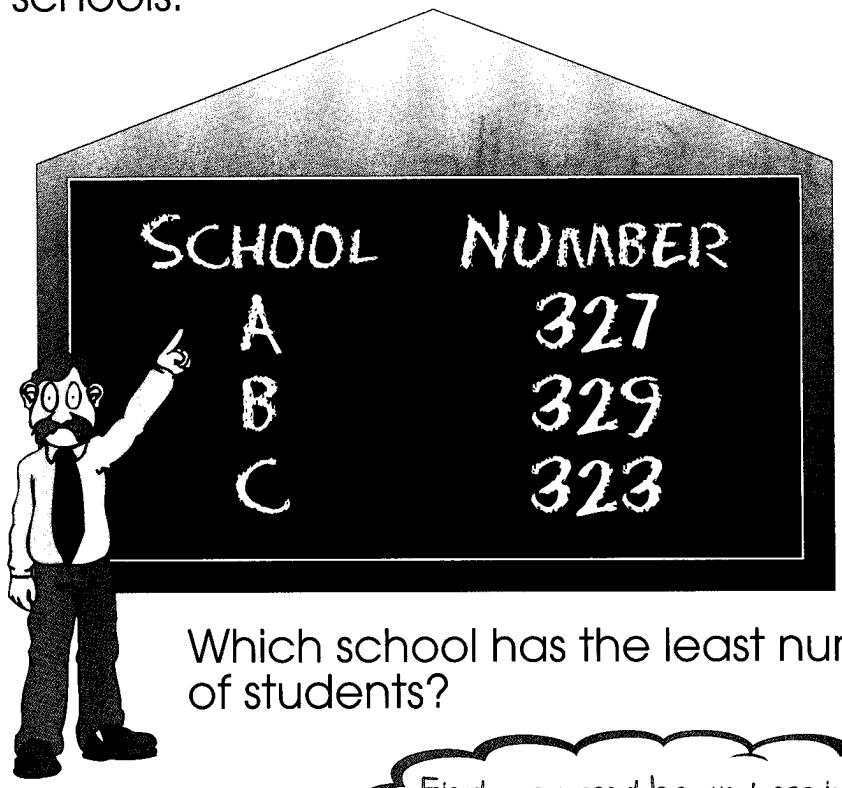
Did John sell more oranges than Al?

John : 3**8**6
Al : 3**6**1

The numbers in the hundreds place are the same so we compare the digits in the tens place. "8" is greater than "6"!

Yes, John sold more oranges.

This table shows the number of students in grade 2 in 3 different schools.



Which school has the least number of students?

First compare the numbers in the hundreds place.

3 2 7
3 2 9
3 2 3

If the numbers in the hundreds place are the same, compare the numbers in the tens place.

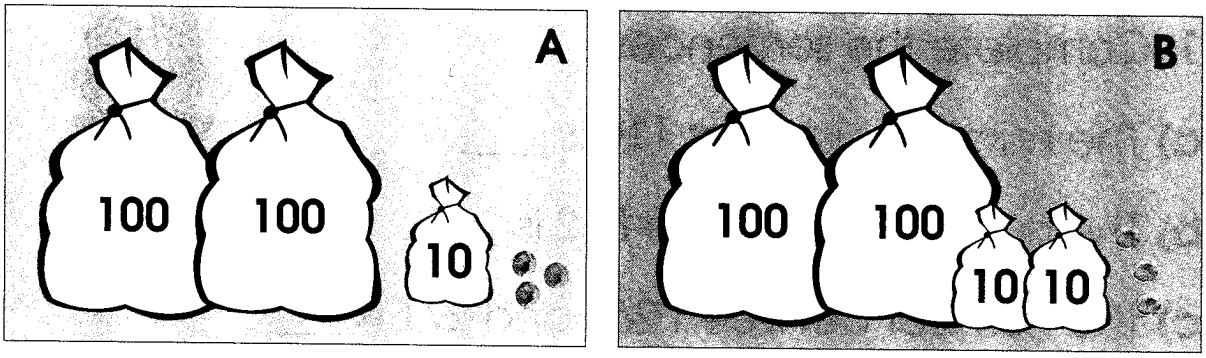
3 2 7
3 2 9
3 2 3

If the numbers in the tens place are also the same, compare the numbers in the ones place.

3 2 7
3 2 9
3 2 3 ← **Least**

School C has the least number of grade 2 students.

Compare these two sets of marbles.
Which set has a larger number of marbles?



Both sets have 2 bags of 100 marbles.
But set B has one more bag of 10 marbles than set A.

Therefore set B has a larger number of marbles.

IN-CLASS ACTIVITY

Use base-ten materials to show the following numbers:

a) 206

b) 260

c) 620

Which is the largest number?
Which is the smallest number?

Let's Try

Fill in the boxes.

5 6 3 2 1 5 7 3 6	5 3 6 5 2 6 5 7 6
The largest number is ☐.	The smallest number is ☐.

Practice 1B

1. Complete the sentences.

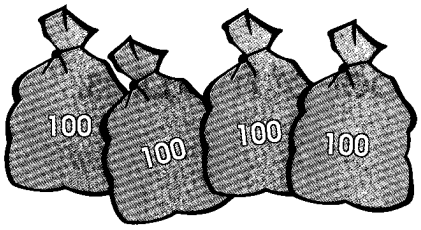
a) The number just after 110 is ____.

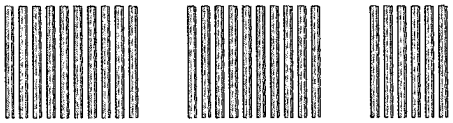
b) The number just before 852 is ____.

c) The number between 269 and 271 is ____.

2. Fill in the blanks with the correct number..

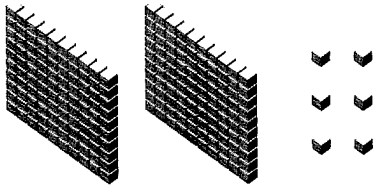
a)





_____hundreds,_____tens and_____ones.

b)

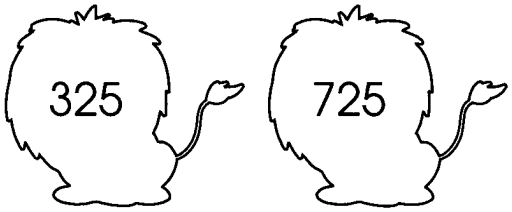


_____hundreds,_____tens and_____ones.

3. Color the larger number.

a)

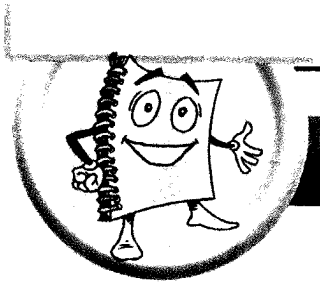
b)



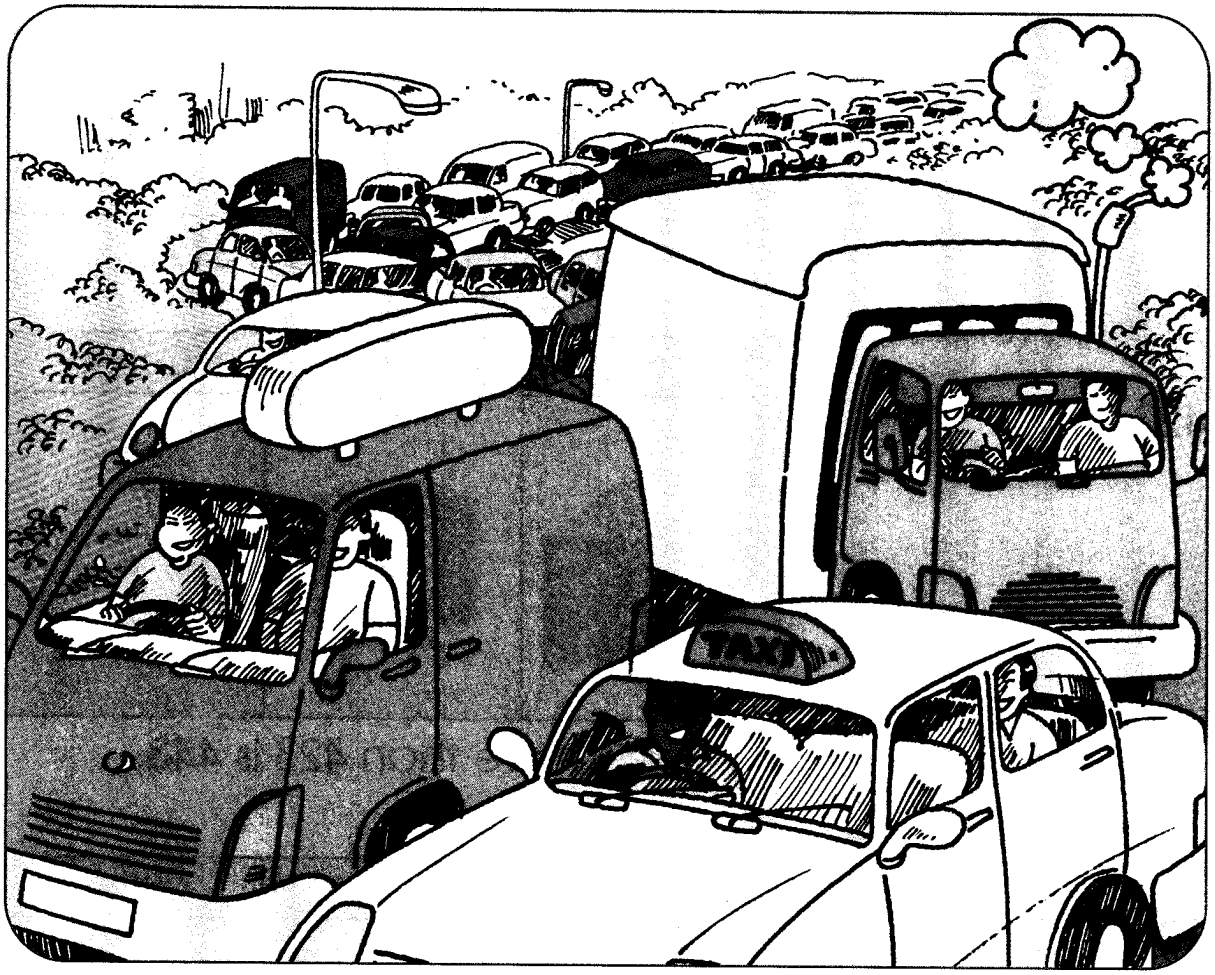
4. Arrange the numbers from the smallest to the largest.

a) 75, 65, 95, 45, 87 : _____

b) 125, 232, 140, 372 : _____



ADDITION & SUBTRACTION I



There are 42 vans and 121 cars stuck in the traffic jam.

Do You Know?

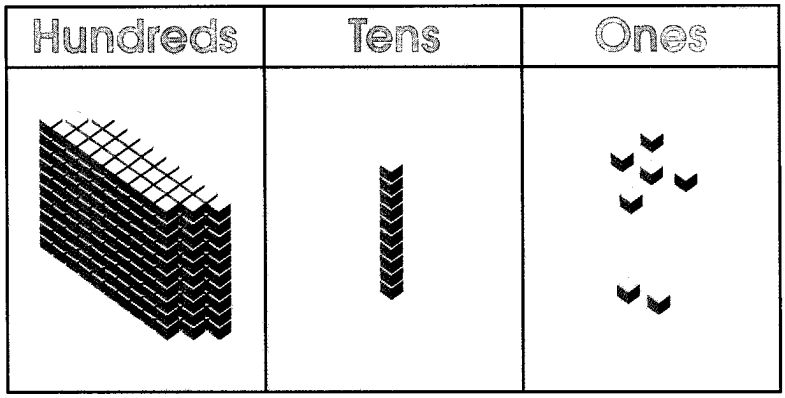
How many vans and cars are there altogether?

Let's Learn

Mental addition

Adding ones

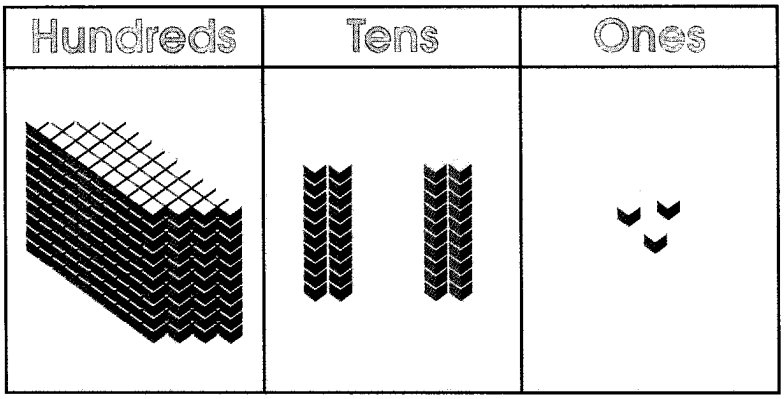
315 + 2 = ☐



2 more than 315 is **317**.

Adding tens

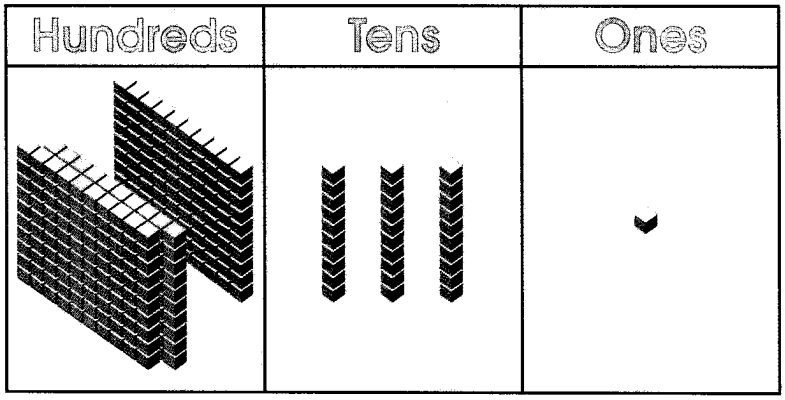
423 + 20 = ☐



20 more than 423 is **443**.

Adding hundreds

131 + 200 = ☐



200 more than 131 is **331**.

Let's Try

Do these sums as fast as you can.

a) 364 + 1 = _____ **b)** 523 + 5 = _____

c) 670 + 10 = _____ **d)** 428 + 30 = _____

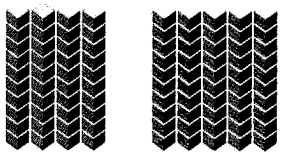
e) 844 + 100 = _____ **f)** 279 + 400 = _____

g) 346 + 40 = _____ **h)** 328 + 600 = _____

Let's Learn

Addition of numbers within 1000

Michael had **43** marbles.
He bought another **55** marbles.
How many marbles did he have in all?

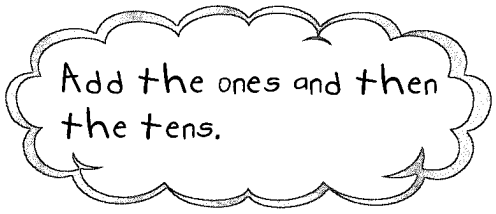
Tens	Ones
	

43 + 55 =

Method 1

Working:

$$\begin{array}{r} 4\,3 \\ +\ 5\,5 \\ \hline 9\,8 \end{array}$$



Method 2

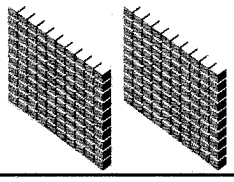
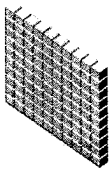
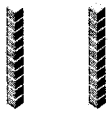
43 + 55

5 50

43 + 5 + 50 = 48 + 50 = 98

He had 98 marbles in all.

What is the total when **245** is added to **123**?

Hundreds	Tens	Ones
		
		

245 + 123 = ____

Method 1

Working:

$$\begin{array}{r} 2\,4\,5 \\ +\ 1\,2\,3 \\ \hline \end{array}$$

Add the ones and then the tens and finally the hundreds.

Method 2

245 + 123

240 5

240 + 123 + 5 = 240 + 128 = 368

The total is _____.

IN-CLASS ACTIVITY

Use paper base-ten materials.

Show the following sums on place-value mats by pasting the materials.

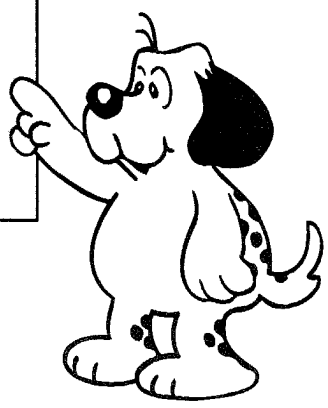
130 + 128　　215 + 120

Color the two sets of numbers in different colors.

Example:

231 + 223 = 454

H	T	O
100 100 100 100	10 10 10 10 10	1 1 1 1



Let's Try

Complete the sums.

a)
$$\begin{array}{r} 74 \\ +\ 25 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 35 \\ +\ 463 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 236 \\ +\ 212 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 578 \\ +\ 211 \\ \hline \end{array}$$

Practice 2A

1. Fill in the boxes.

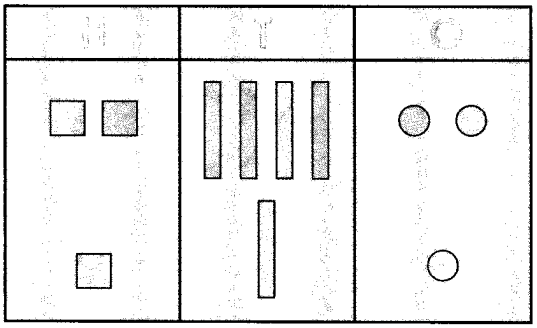
a) 81 + 3 = ____ **b)** 123 + 30 = ____ **c)** 621 + 200 = ____

2. Fill in the blanks. Then draw using the symbols in the key to show the answer.

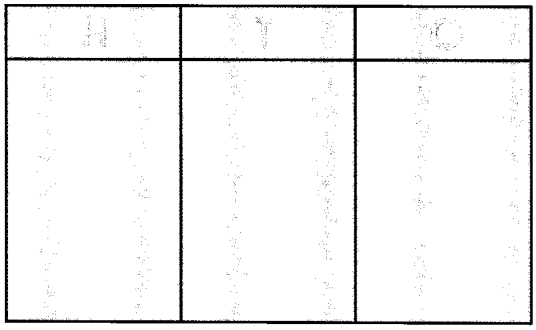
Key

□: Hundreds ▯: Tens ○: Ones

a) 242 + 111= _____



b) 430 + 133 = _____



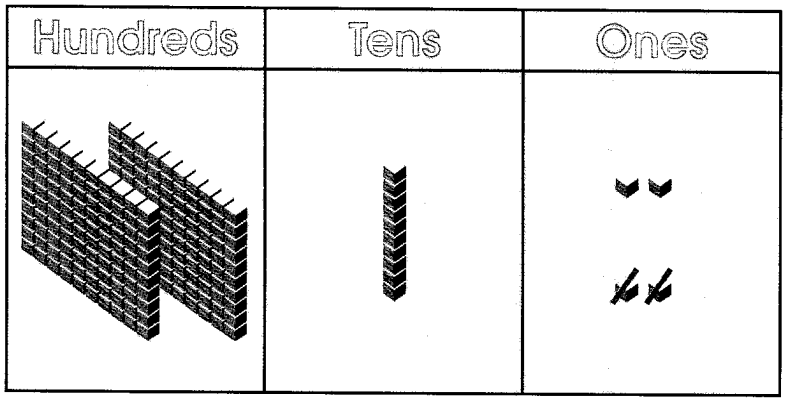
3. Mr. Jones has 152 pebbles in a vase.
He adds another 47 pebbles into the vase.
How many pebbles are there altogether?

There are _____ pebbles altogether.

Let's Learn

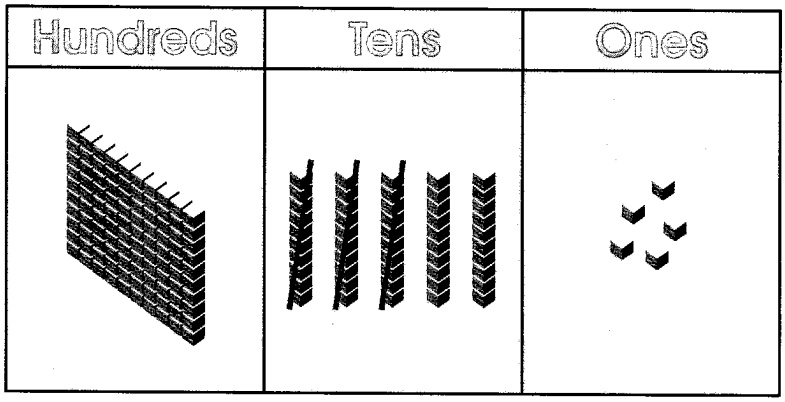
Mental subtraction

214 - 2 = ☐



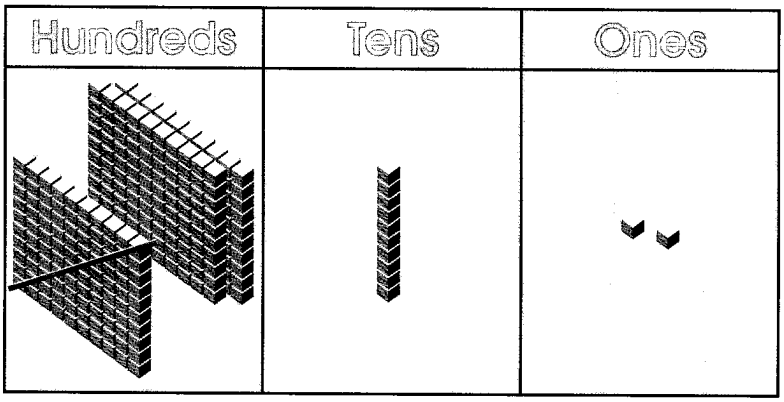
2 less than 214 is **212**.

155 - 30 = ☐



30 less than 155 is **125**.

312 - 100 = ☐



100 less than 312 is **212**.

Let's Try

Fill in the blanks.

a) 1 less than 328 is _____.

b) 50 less than 695 is _____.

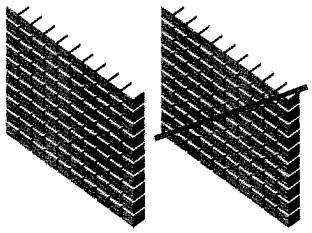
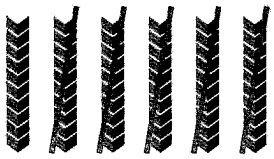
c) 600 less than 881 is _____.

d) 7 less than 748 is _____.

Let's Learn

Subtraction of numbers within 1000

There are **264** coins in Cynthia's savings box.
She gives **152** of her coins to her younger sister.
How many coins are left in the box?

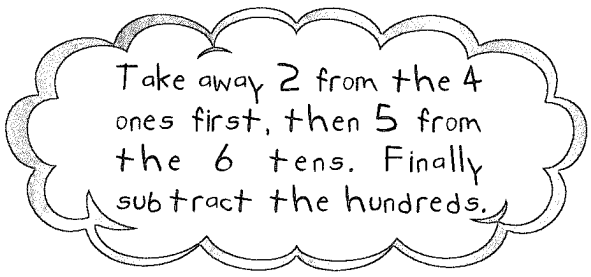
Hundreds	Tens	Ones
		

264 - 152 = _____

Method 1

Working:

$$\begin{array}{r} 2\,6\,4 \\ -\,1\,5\,2 \\ \hline 1\,1\,2 \end{array}$$



Method 2

264 - 152

2 150

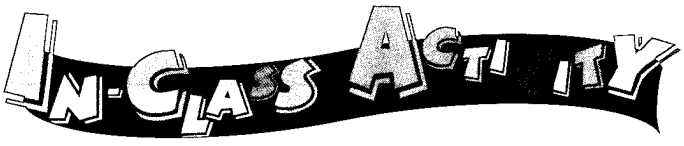
50 100

264 - 2 = 262

262 - 50 = 212

212 - 100 = 112

She has 112 coins left.



Use the base-ten materials and place-value mats to show the following subtractions:

674 - 232 =_____ 588 - 167 =_____ 178 - 45 =_____

Let's Try

Subtract.

a)

7	8	7
- 4	0	0

b)

3	3	3
- 1	2	3

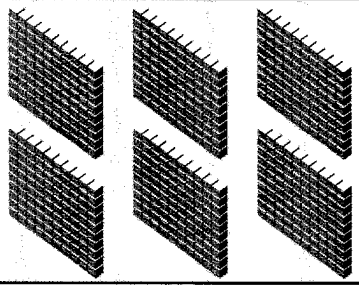
c)

6	9	6
- 2	3	3

Practice 2B

1. Cross out the correct figures to show the answer. Then fill in the box.

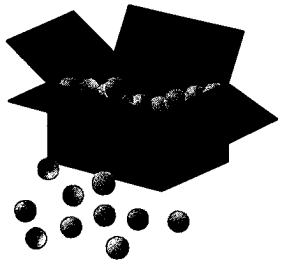
654 - 453 = ☐

H	T	O
		

2. Work these sums.

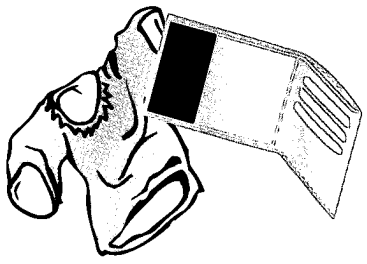
a) 367 - 231=_____ **b)** 894 - 513=_____ **c)** 674 - 61=_____

3. Jane bought 256 beads to make necklaces. She used 123 of them. How many beads was she left with?

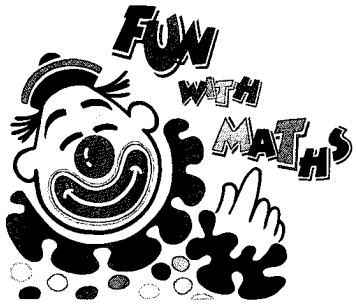


She was left with _____ beads.

4. Mr. Smith bought a T-shirt for his wife which cost $33. He bought a wallet for himself which cost $62. How much did he spend in all?



He spent _____ in all.



Work the sums below. Match the letter that is given next to the answer with the numbers in the answers to the riddles on page 24.

1.
$$\begin{array}{r} 163 \\ +\ 234 \\ \hline \end{array} = \mathbf{L}$$

2.
$$\begin{array}{r} 368 \\ -\ 231 \\ \hline \end{array} = \mathbf{A}$$

3.
$$\begin{array}{r} 103 \\ +\ 320 \\ \hline \end{array} = \mathbf{W}$$

4.
$$\begin{array}{r} 257 \\ +\ 321 \\ \hline \end{array} = \mathbf{N}$$

5.
$$\begin{array}{r} 948 \\ -\ 436 \\ \hline \end{array} = \mathbf{T}$$

6.
$$\begin{array}{r} 369 \\ +\ 620 \\ \hline \end{array} = \mathbf{G}$$

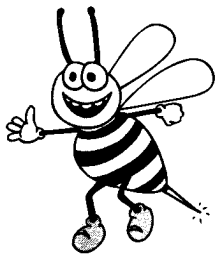
7.
$$\begin{array}{r} 235 \\ +\ 642 \\ \hline \end{array} = \mathbf{E}$$

8.
$$\begin{array}{r} 658 \\ -\ 326 \\ \hline \end{array} = \mathbf{S}$$

9.
$$\begin{array}{r} 472 \\ +\ 316 \\ \hline \end{array} = \mathbf{R}$$

SOLVE THE RIDDLES

1. What runs but cannot walk?



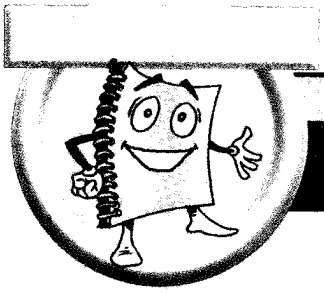
$\overline{423}$ $\overline{137}$ $\overline{512}$ $\overline{877}$ $\overline{788}$

2. What can burn the eyes, sting the mouth yet can be eaten?

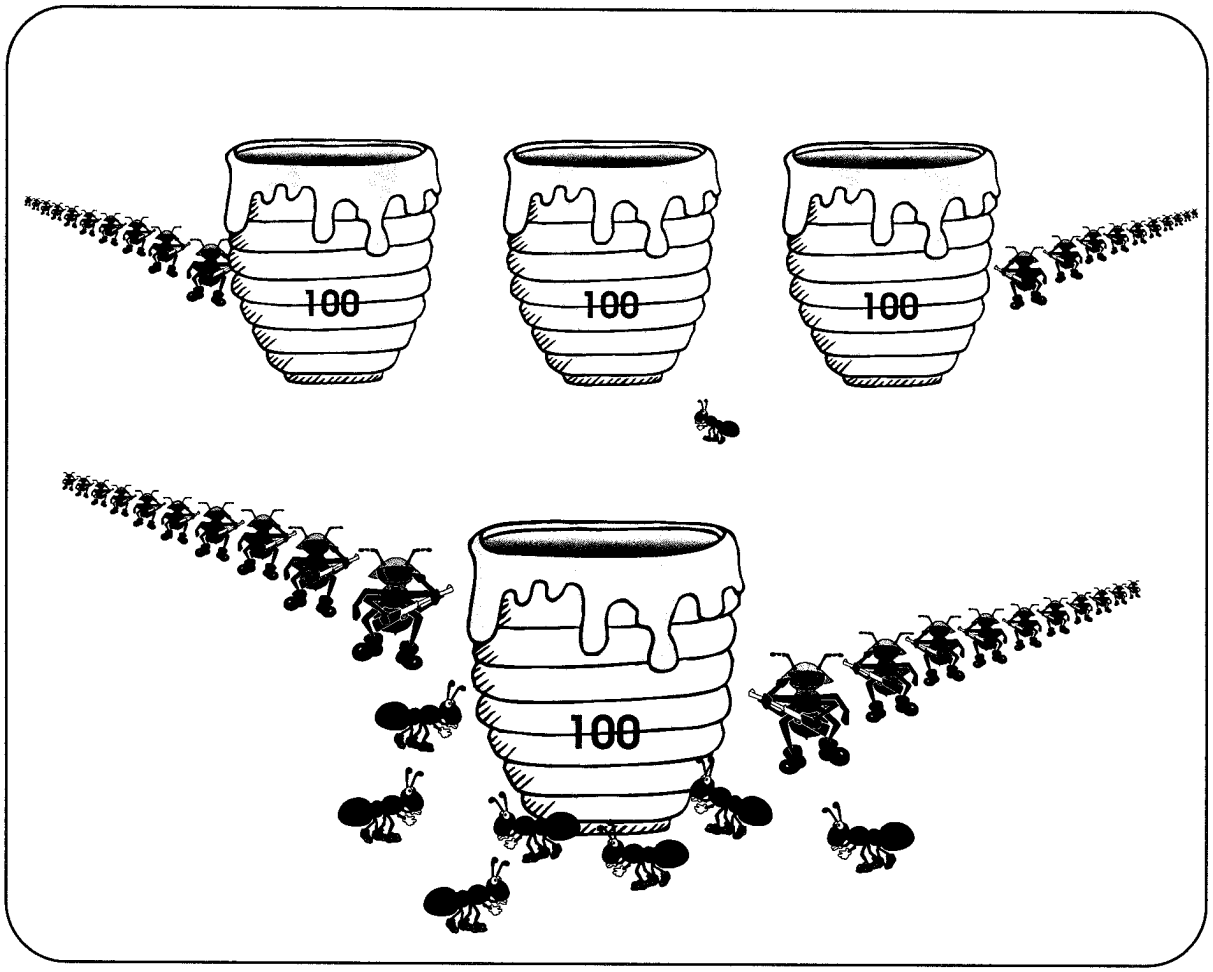
$\overline{332}$ $\overline{137}$ $\overline{397}$ $\overline{512}$

3. What has to be broken before it can be used?

$\overline{137}$ $\overline{578}$ $\overline{877}$ $\overline{989}$ $\overline{989}$



ADDITION & SUBTRACTION II



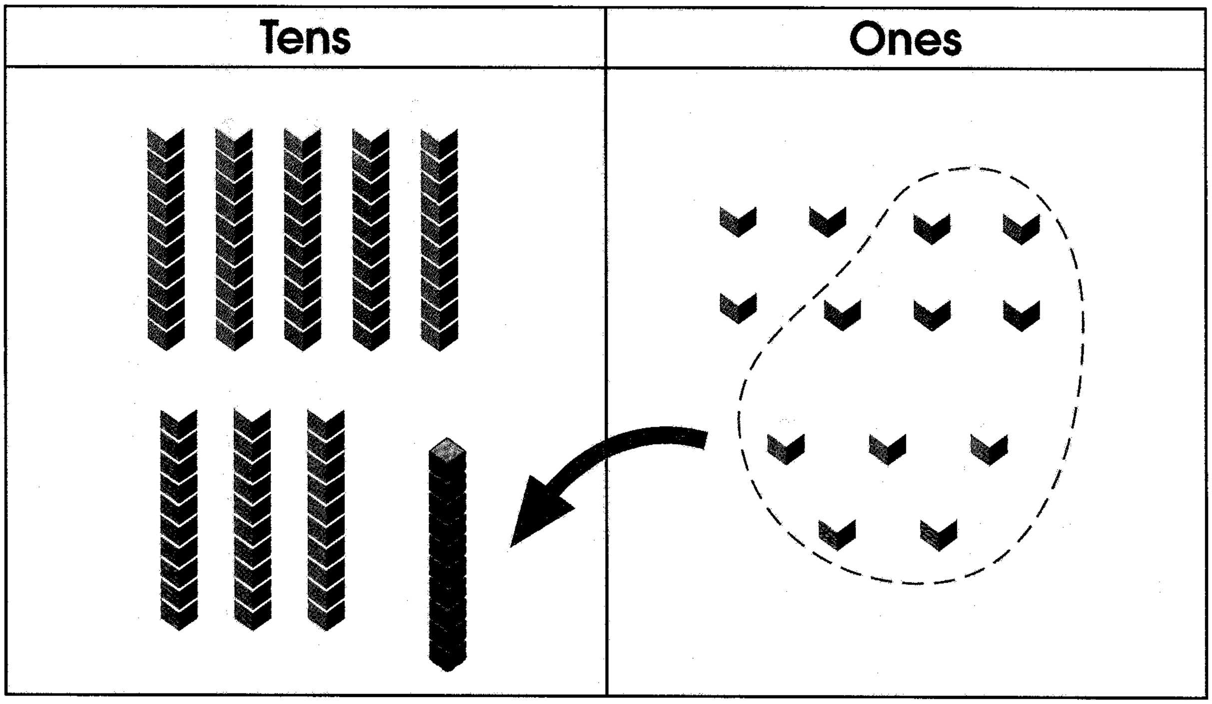
Do You Know?

Can you find the total number of ants?

Let's Learn

Addition with renaming

Tyler has **58** stamps. Megan has **35** stamps. How many stamps do they have in all?



58 + 35 =

Method 1:

Working:

$$\begin{array}{r@{\;}c|c} & {}^{1}\mathbf{5} & \mathbf{8} \\ + & \mathbf{3} & \mathbf{5} \\ \hline & \mathbf{9} & \mathbf{3} \end{array}$$

8 ones added to 5 ones equal to 13 ones.

13 ones can be renamed as 1 ten and 3 ones.

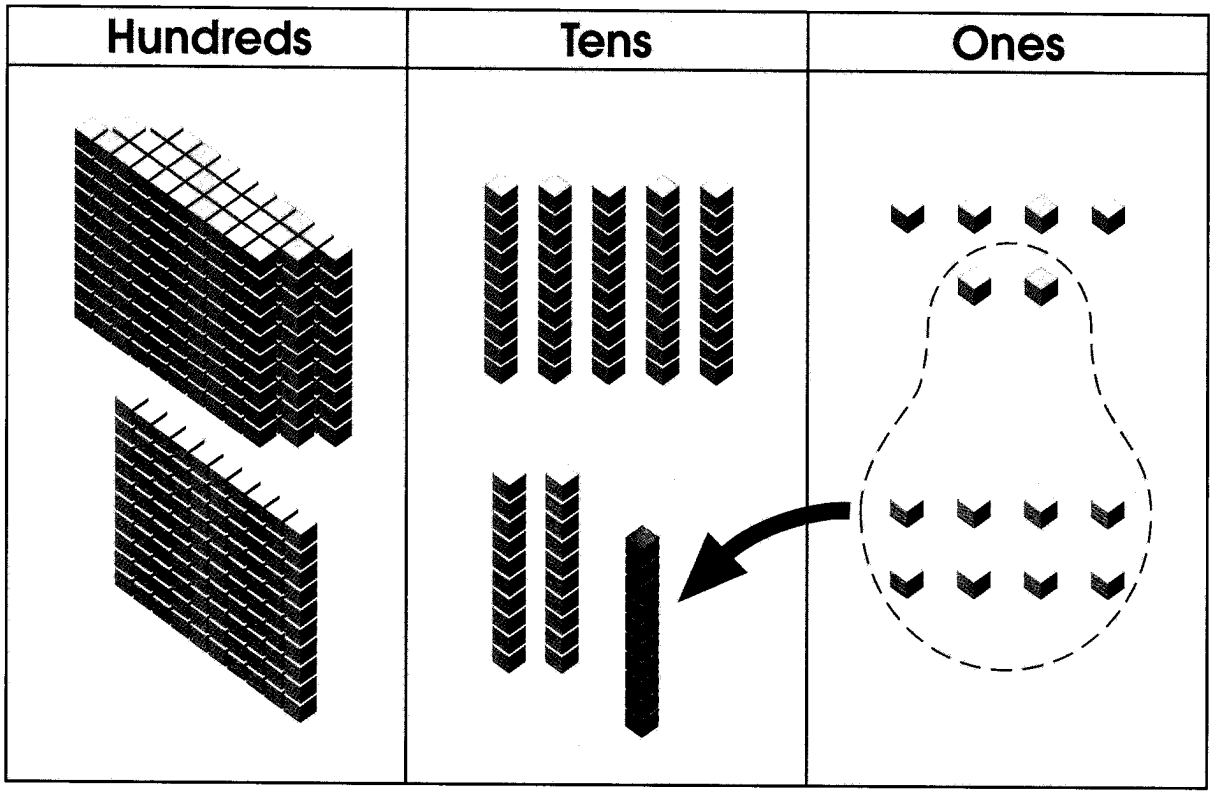
Method 2:

58 + 35 = 93
(35 split into 2 and 33)

58 + 2 + 33 = 60 + 33 = 93

They have 93 stamps in all.

Mr. Wong baked **356** muffins on Saturday and **128** muffins on Monday. How many muffins did he bake on the two days altogether?



356 + 128 = ☐

Method 1:

Working:

$$\begin{array}{r} {}^{1} \\ 3\,5\,6 \\ +\ 1\,2\,8 \\ \hline 4\,8\,4 \end{array}$$

Method 2:

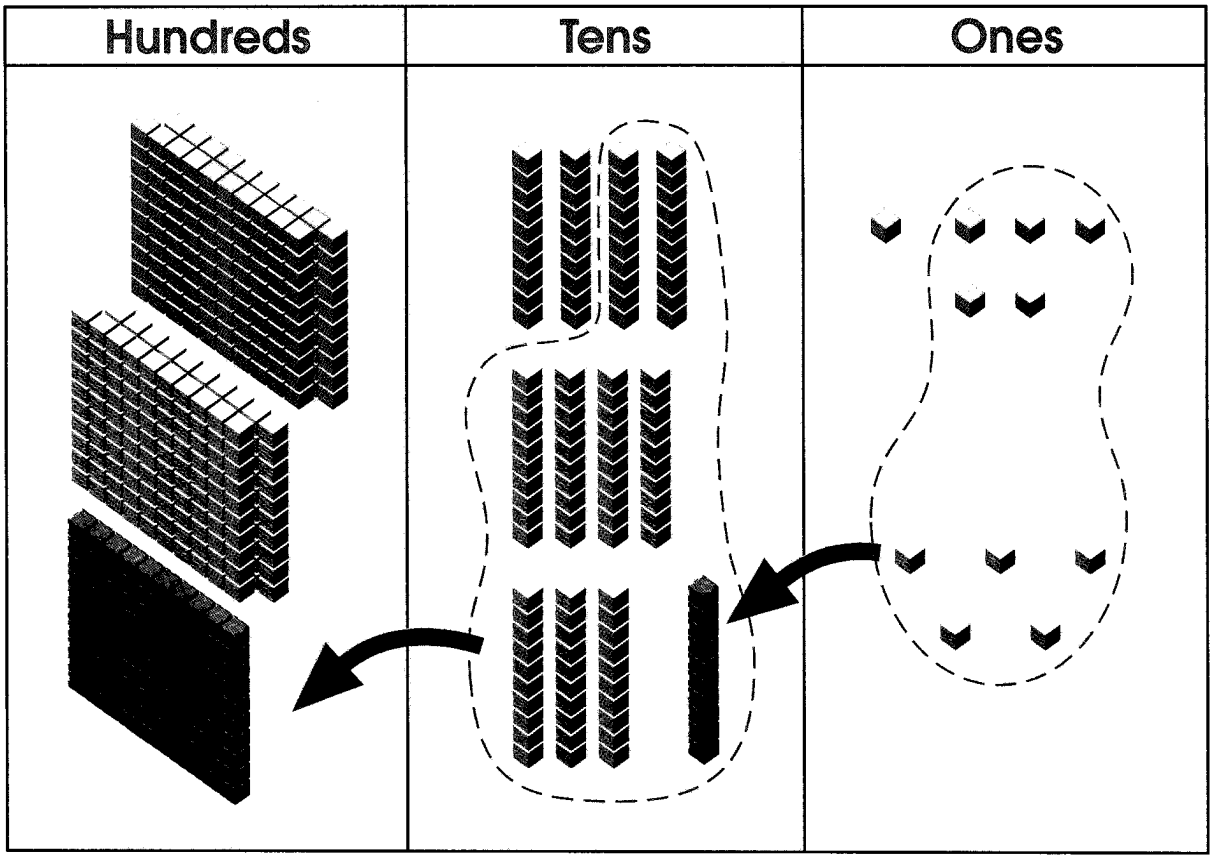
356 + 128 = 484

4 124

356 + 4 + 124
= 360 + 124
= 484

He made 484 muffins altogether.

What is the total when **246** is added to **275**?



246 + 275 = ☐

Method 1:

Working:

$$\begin{array}{r} {\scriptstyle 1}\ {\scriptstyle 1} \\ 246 \\ +\ 275 \\ \hline 521 \end{array}$$

Rules to remember

- Add the ones first, then the tens and finally the hundreds
- Rename everytime you make groups of tens

Method 2:

246 + 275

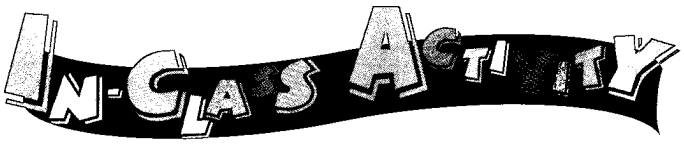
4 271

250 + 271 = 521

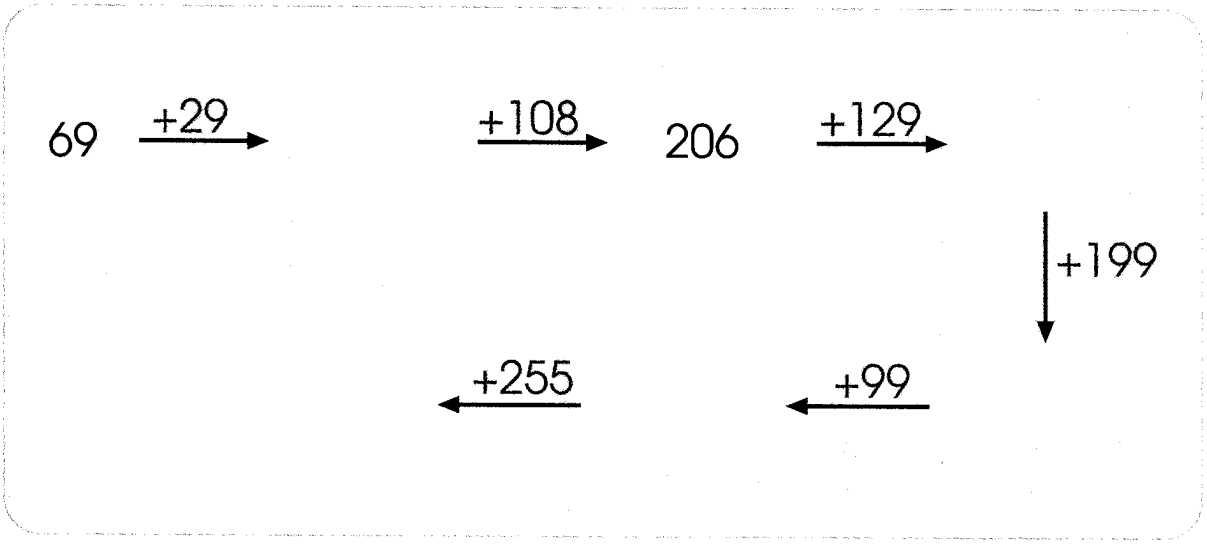
50 221

300 + 221 = 521

The total is 521.



Use the place-value mat and the base-ten materials to find the magic number. Add up the numbers and fill in the boxes.



Let's Try

1. Rename the following.
The first one has been done for you.

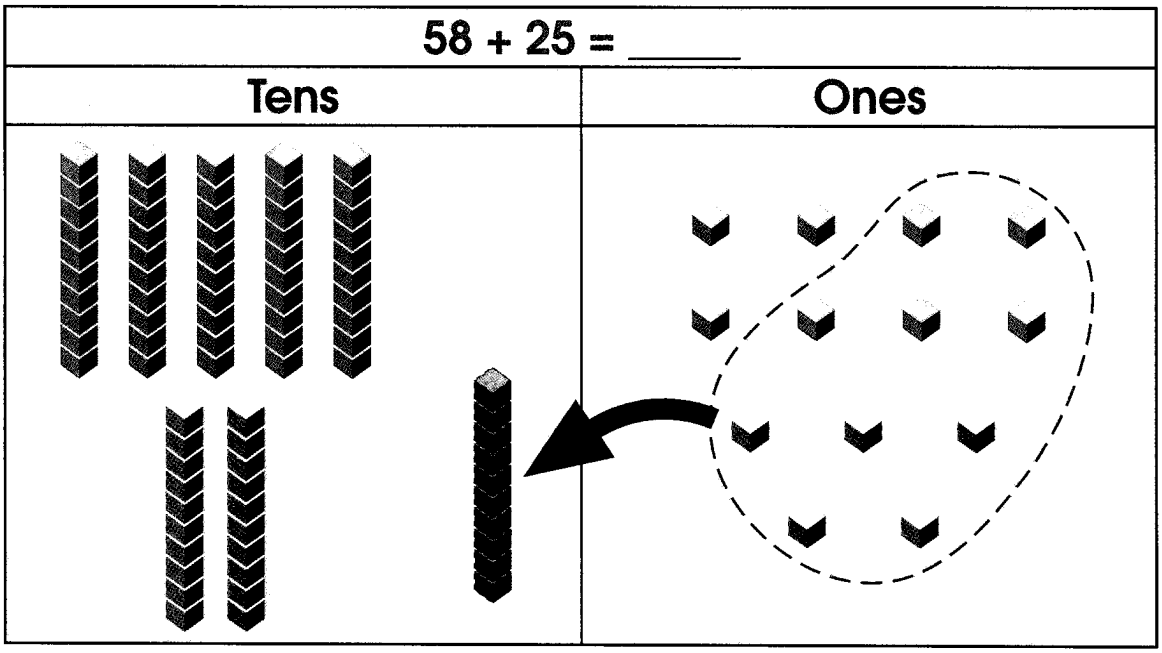
a) **6** tens = **5** tens and **10** ones.

b) **2** hundreds, **6** tens and **2** ones = **2** hundreds, **5** tens and ___ ones.

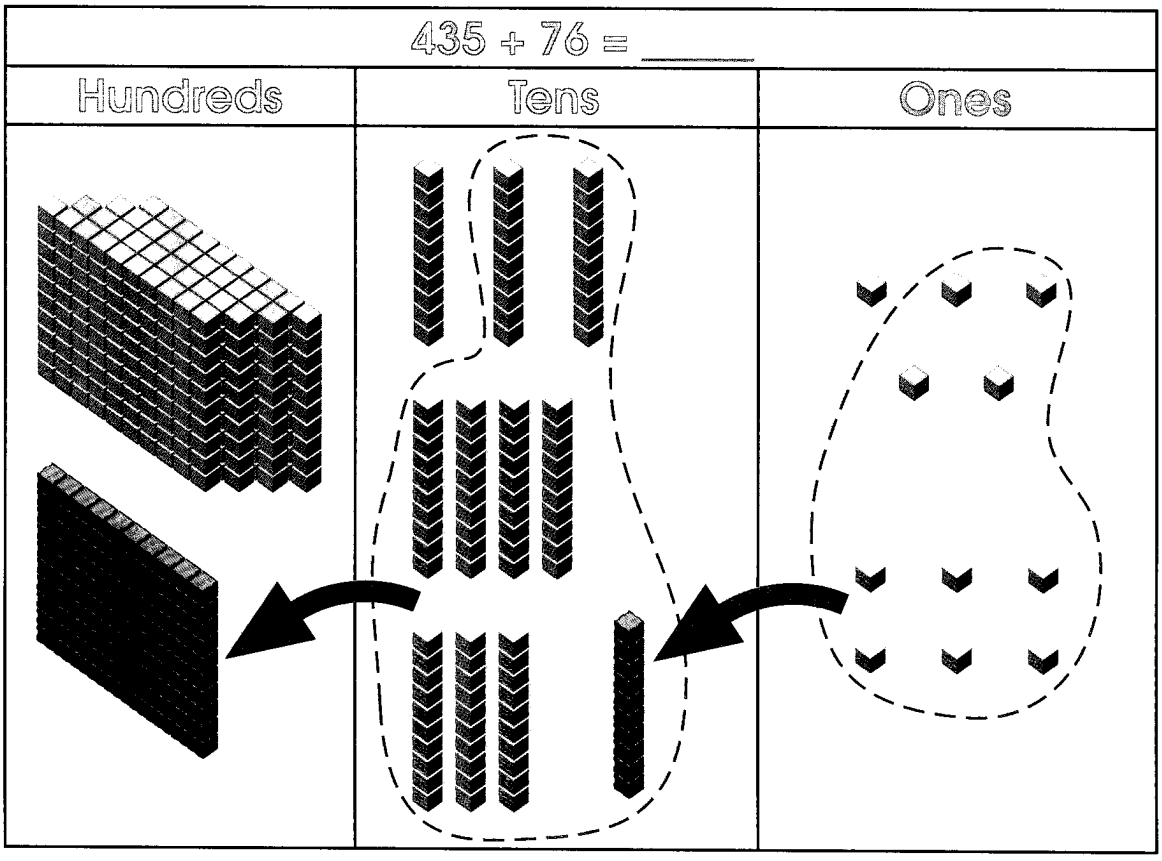
c) **9** hundreds, **27** ones = **8** hundreds, ___ tens and **7** ones.

2. Look at the tables carefully.
Then complete the sums.

a)



b)



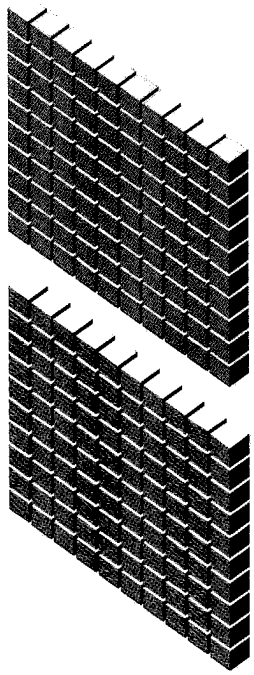
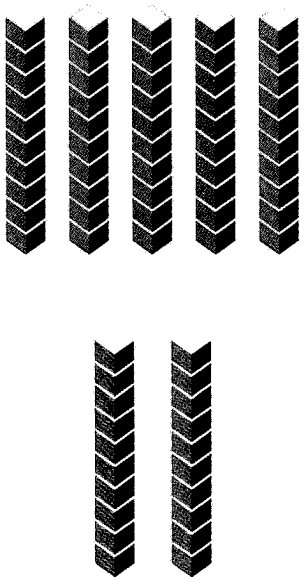
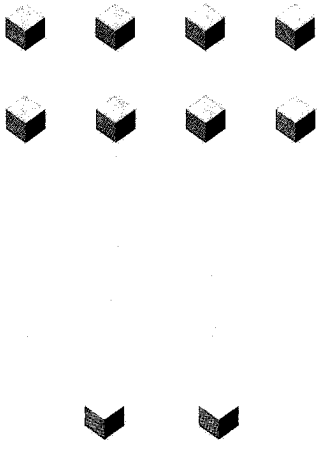
Practice 3A

1. Match the following.

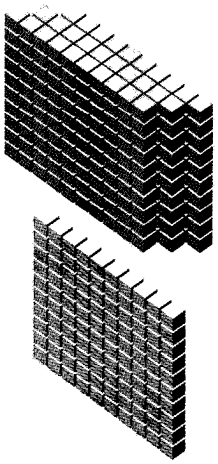
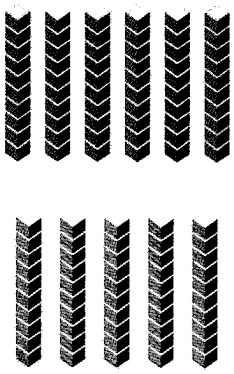
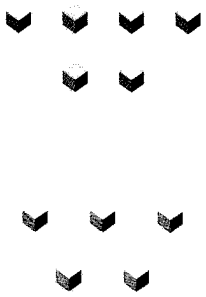
40 tens and 23 ones	**4 hundreds, 2 tens and 3 ones**
2 hundreds and 56 ones	**7 tens and 4 ones**
6 tens and 14 ones	**2 hundreds, 5 tens and 6 ones**

2. Add by renaming.

a) 158 + 122 =_____

Hundreds	Tens	Ones
		

b) 366 + 155 =_____

Hundreds	Tens	Ones
		

3. Do the following sums.

a) Jane had a collection of 124 sea-shells.
She collected another 117 sea-shells.
How many sea-shells did she have in all?

She had _____ sea-shells in all.

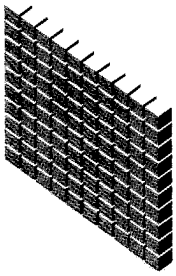
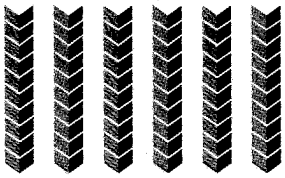
b) School A has 232 Grade 2 pupils.
School B has 254 Grade 2 pupils.
How many Grade 2 pupils are there altogether in the two schools?

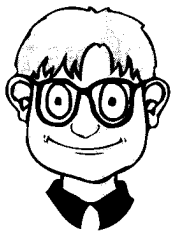
There are _____ Grade 2 pupils in all.

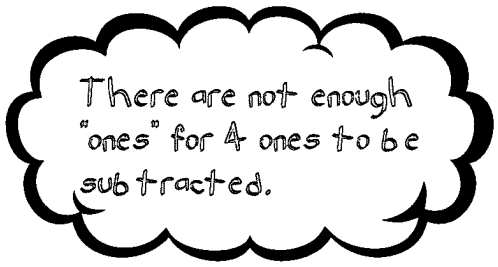
Let's Learn

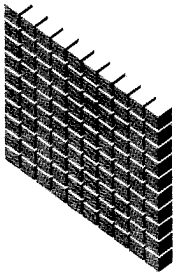
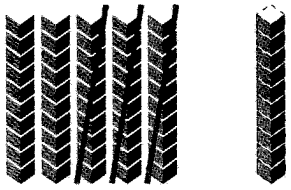
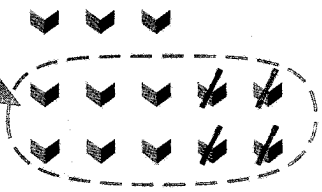
Subtraction with renaming

John has **163** marbles. He gives **34** marbles to Andrea. How many marbles does John have left?

163		
Hundreds	Tens	Ones
		





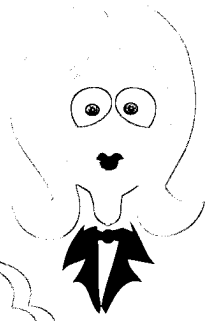
163 - 34 =_____		
Hundreds	Tens	Ones
		

163 - 34 =

Method 1:

Working:

$$\begin{array}{r} 1\overset{5}{\not{6}}\,\overset{1}{3} \\ -\quad 3\;4 \\ \hline 1\;2\;9 \end{array}$$



Change one ten to 10 ones.

We then get 13 ones.
Subtract 4 ones from 13 ones and 3 tens from 5 tens.

Method 2:

163 - 34

/ \

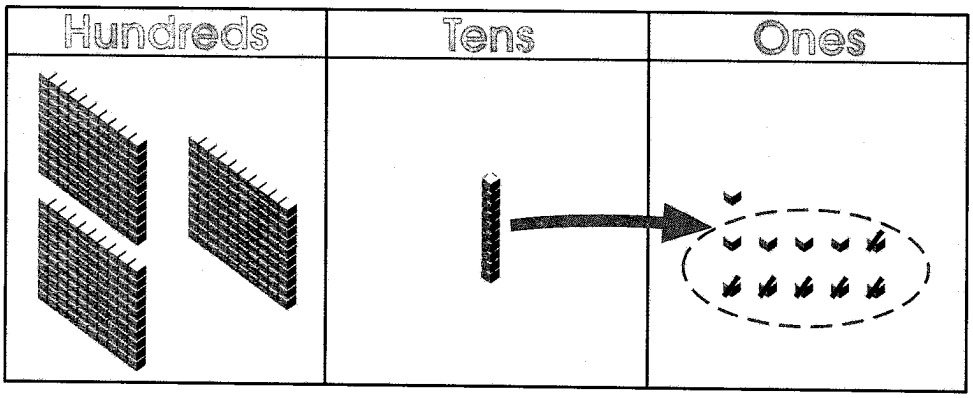
1 33

163 - 33 = 130

130 - 1 = 129

Isaac has 129 marbles left.

Sarah has **311** stickers. She gives **256** stickers to her younger sister. How many stickers is Sarah left with?



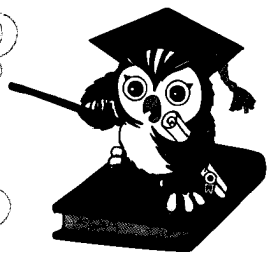
Method 1:

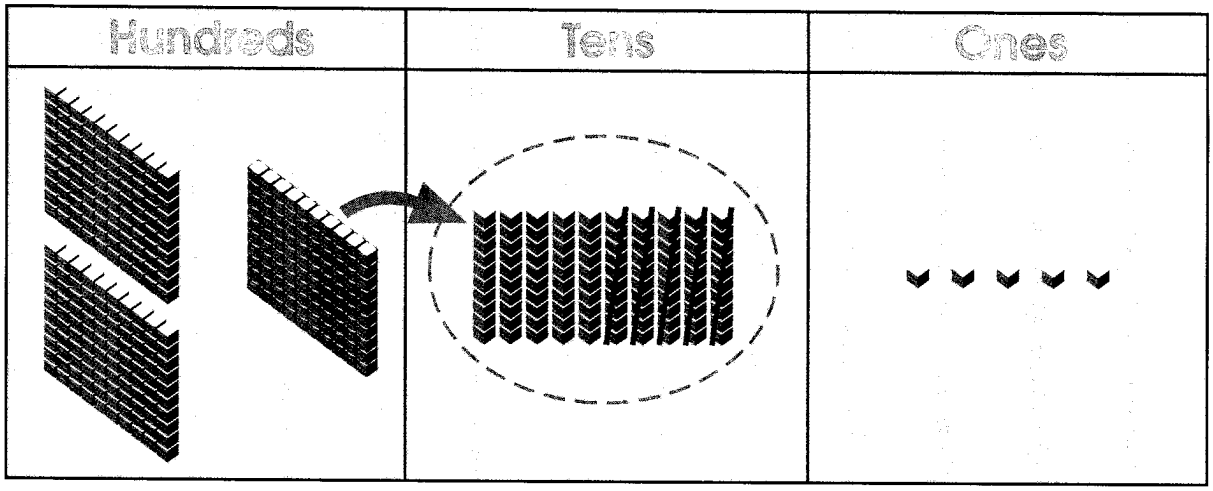
Working:

$$\begin{array}{r} 3\;\overset{0}{\not{1}}\,\overset{1}{1} \\ -\;2\;5\;6 \\ \hline \quad\;\;5 \end{array}$$

First subtract the ones.
Rename 1 ten to 10 ones.

We get 11 ones.
Subtract 6 ones from 11 ones.





311 - 256 =

Working:

$$\begin{array}{r} {}^{2}\not{3}\,{}^{1}\not{1}\,{}^{1}1 \\ -\ 2\,5\,6 \\ \hline 0\,5\,5 \end{array}$$

Subtract the tens. Change 1 hundred to 10 tens.

Subtract 5 tens from 10 tens.

Lastly, subtract the hundreds.

Method 2:

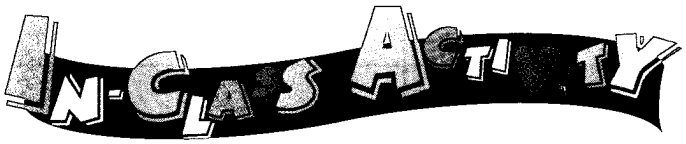
311 - 256

11 300

300 - 256 = 44

11 + 44 = 55

Sarah has 55 stickers left.



Complete the following using base-ten materials.

a) 334 - 235

b) 71 - 45

c) 628 - 145

d) 745 - 238

e) 108 - 45

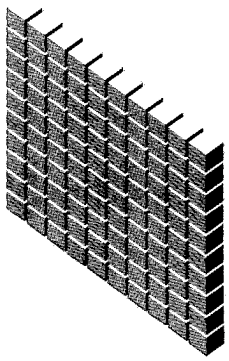
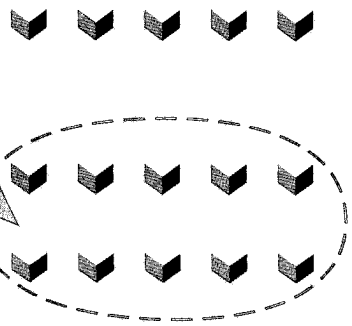
f) 880 - 299

Let's Try

Complete the following.

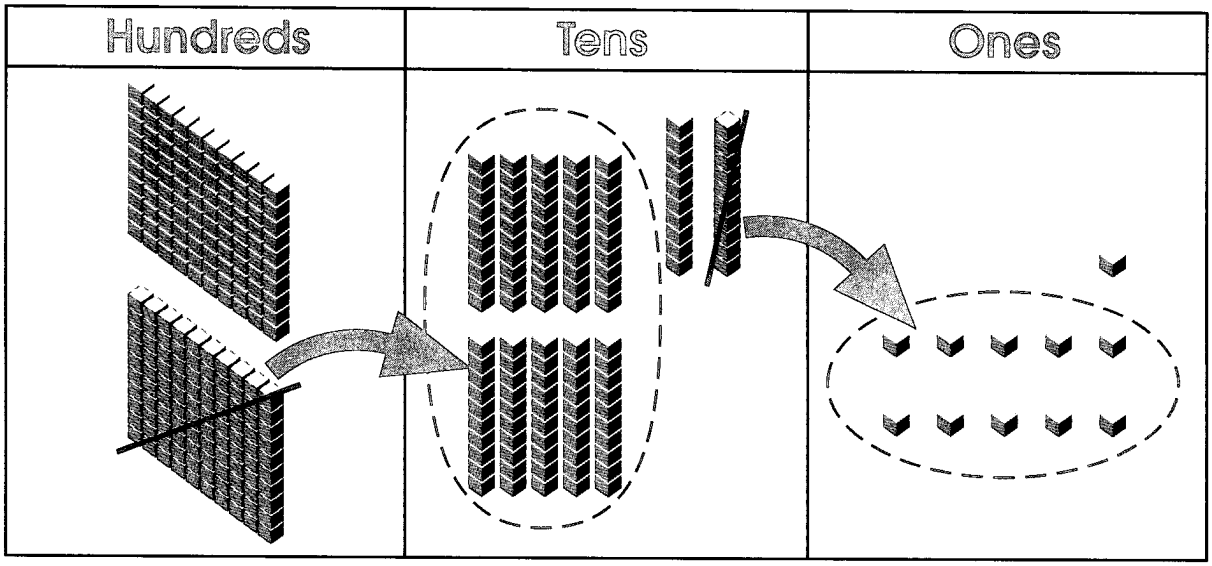
a) Kate has 125 jellybeans.
Al has only 19 jellybeans.
How many more jellybeans does Kate have than Al?

125 - 19 =

Hundreds	Tens	Ones
		

b) Mrs. Clarke had $221. She spent $195 on some presents. How much money did she have left?

221 - 195 =



Practice 3B

1. Do the following sums.

a)
$$\begin{array}{r} 652 \\ -\ 235 \\ \hline \end{array}$$

b)
$$\begin{array}{r} 765 \\ -\ 328 \\ \hline \end{array}$$

c)
$$\begin{array}{r} 374 \\ -\ 119 \\ \hline \end{array}$$

d)
$$\begin{array}{r} 523 \\ -\ 255 \\ \hline \end{array}$$

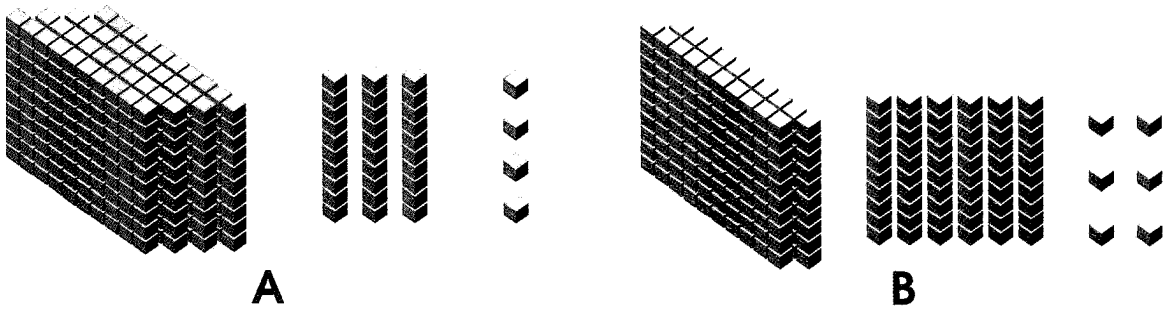
e)
$$\begin{array}{r} 435 \\ -\ 357 \\ \hline \end{array}$$

f)
$$\begin{array}{r} 569 \\ -\ 172 \\ \hline \end{array}$$

2. Complete the following.

a) A baker baked 367 pineapple tarts on Monday and 567 tarts on Tuesday. How many more tarts did he bake on Tuesday than on Monday?

b) Which set has more cubes?
How many more than the other set?



A B

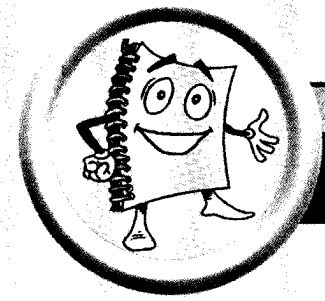
Look at the Magic Board.

46	80	117	102	15
48	98	43	58	113
103	102	39	69	47
44	43	100	88	85
119	37	61	43	100

Add up the numbers in each row.
What number do you get ?

Then add up the numbers in each column.
Do you get the same number?

What do you think is the magic number?

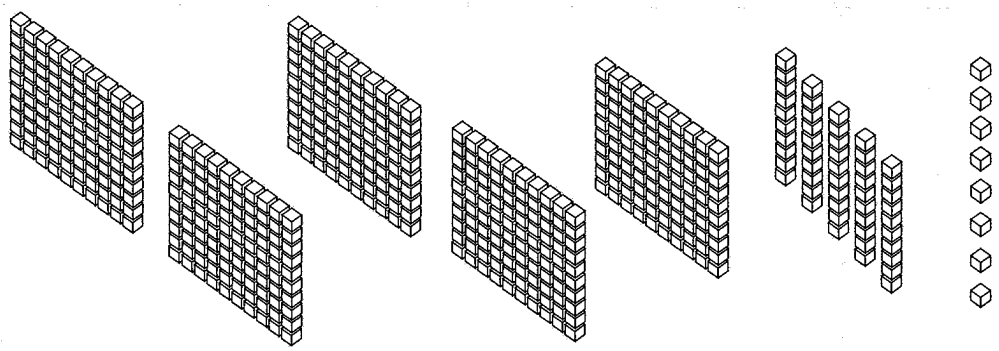


REVISION 1

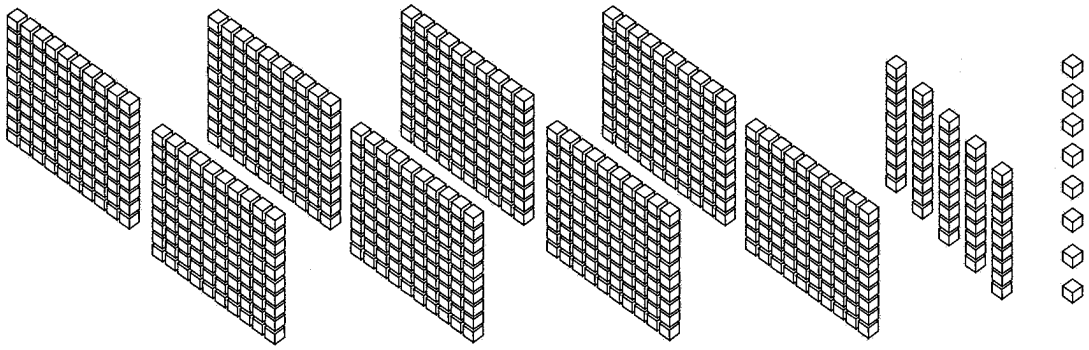
Exercise 1

1. Color the correct figures to show the following numbers.

a) 320



b) 721



2. Fill in the blanks.

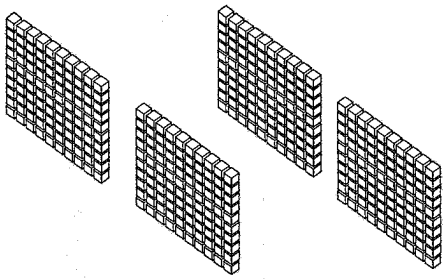
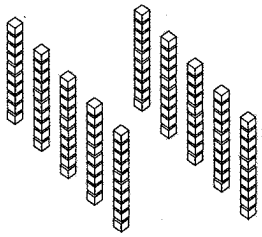
a) What number is 1 more than 99? _____

b) What number is 10 less than 457? _____

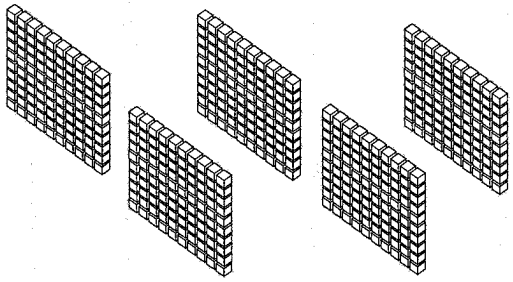
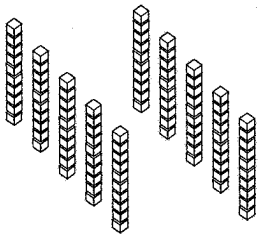
c) What number is 100 more than 900? _____

3. Color to show the two separate sets of numbers added. Use a different color for each set. Then find the sum and fill in the blanks.

a) 145 + 243 = _____

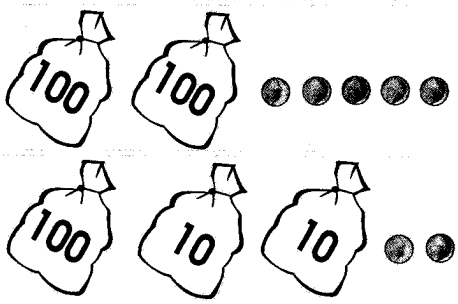
Hundreds	Tens	Ones
		

b) 263 + 215 = _____

Hundreds	Tens	Ones
		

Exercise 2

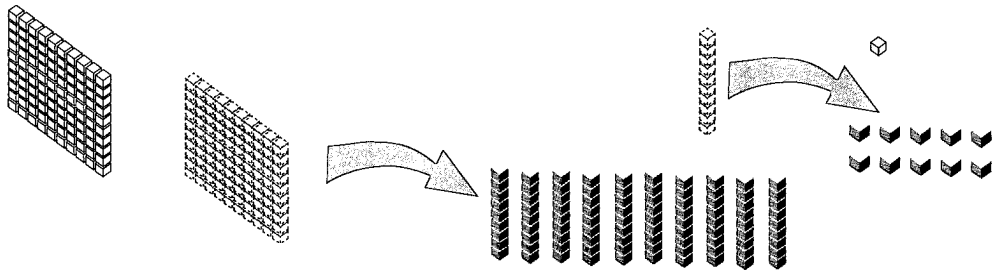
4. Count the number of objects. Write in numbers and words.

	Numbers	Words
		

5. Subtract by crossing out the correct figures. Then fill in the blanks.

211 - 188 = _____

Hundreds	Tens	Ones



6. The chart shows the number of stickers collected by 4 girls.

Person	Number of stickers
Carmen	351
Lily	128
Mei Ling	357
Angela	270

a) Who collected the most number of stickers? _____

b) Who collected the least number of stickers? _____

7. Cross-out the box with the answer '**542**'.

295 +214	198 +344	395 +162	427 +138

Exercise 3

8. Michael and Teddy had 478 stamps altogether. Teddy had 295 stamps. How many stamps did Michael have?

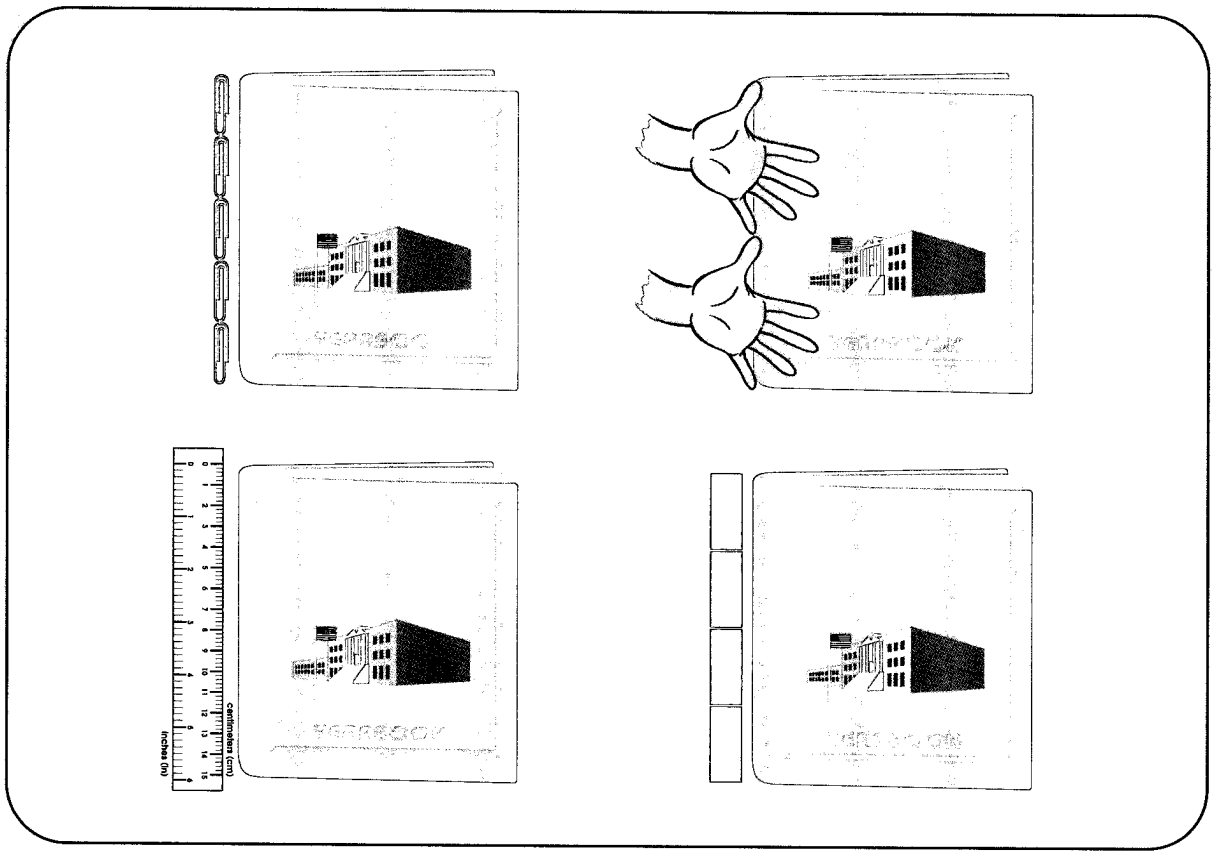
9. Fatimah had 654 coins in her savings box. Jane had 257 coins in hers. How many coins did they have altogether?

10. Joyce made 521 apple pies. Maria made 477 apple pies. Who made more apple pies? How many more?

11. There are 732 boys in a school. There are 95 fewer boys than girls in the school. How many girls are there?

CHAPTER 4

LENGTH



Different units are used to measure things.

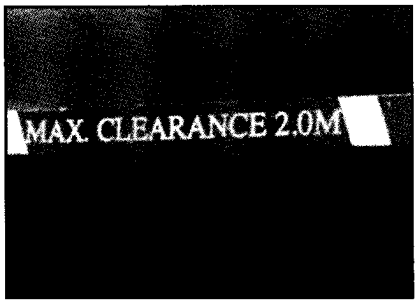
Do You Know?

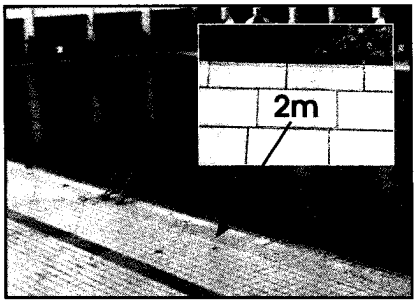
Which of the things shown above are standard units of measurement? Why?

Which is the best unit to compare length?

Let's Learn

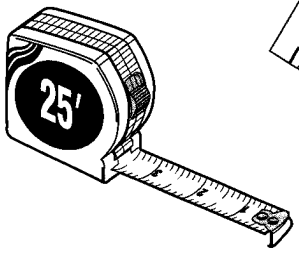
Measuring length in meters/yards

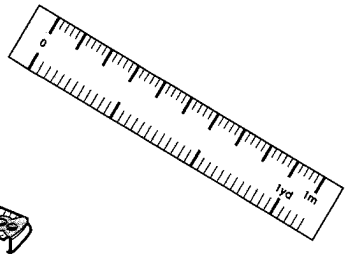


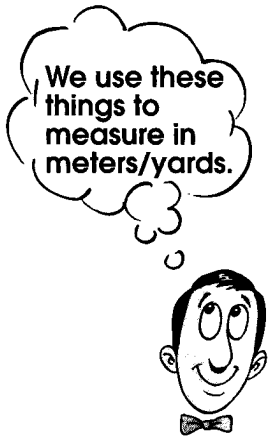


A **meter** is a standard unit of length.
We write **m** for meter.

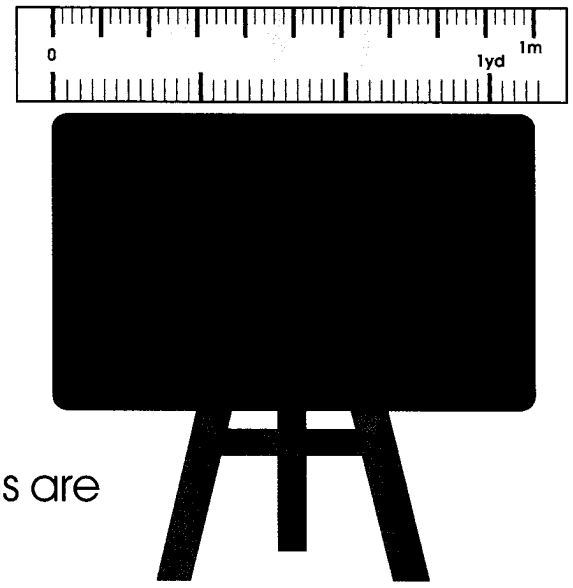
A **yard** is another unit of length.
We write **yd** for yard.







What is the length of the blackboard?



The length is 1 meter or 1m.

What other objects or lengths are measured in meters/yards?

In-Class Activity

1. Use your meter ruler to measure things in the classroom. Record your measurements in a table:

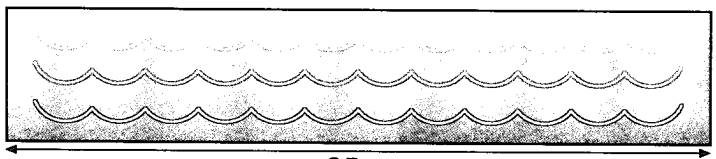
Taller/Longer than 1 meter	About 1 meter	Shorter than 1 meter
door	bookshelves	textbook

2. Estimate and measure the following:

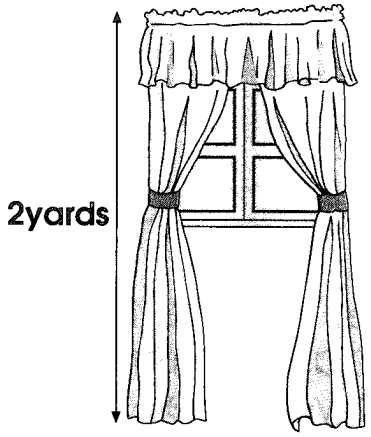
	My guess:	It measures:
Length of classroom	about _____ m	about _____ m
Width of classroom	about _____ m	about _____ m
Length of corridor	about _____ yd	about _____ yd
Width of corridor	about _____ yd	about _____ yd

Let's Try

1. Al swims 1 length of the swimming pool. He has swum about_____ m.



2. Mother sews new curtains for the bedrooms. The height from the top of the windows to the floor is_____yards.



Let's Learn

Measuring length in centimeters/inches

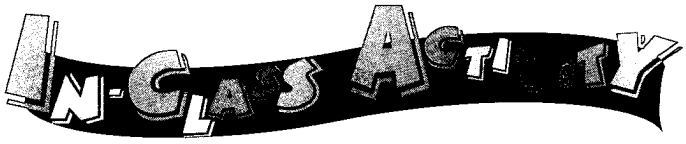
Can you measure the following objects with your ruler?

The objects are too short to be measured in meters.

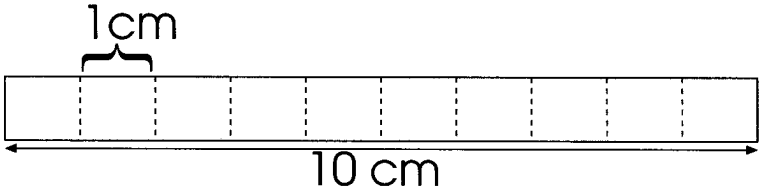
We use another standard unit called the **centimeter.** We write **cm** for centimeter.

Inch is another unit used to measure small lengths. We write **in** for inch.

Measure the length of your textbook.
We say that the textbook is about _____centimeters in length.



Make a centimeter ruler.
Look at the paper strip given.



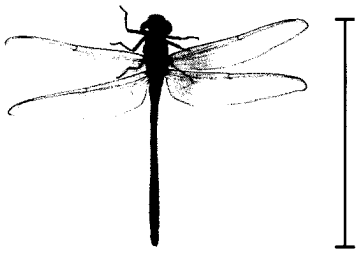
How long is the paper strip?

Get 3 things from the your school bag.
Measure them one by one.
Tell your friends the measurements.

Let's Try

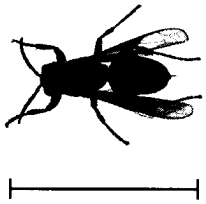
1. How many centimeters/inches long are these insects?

(a)



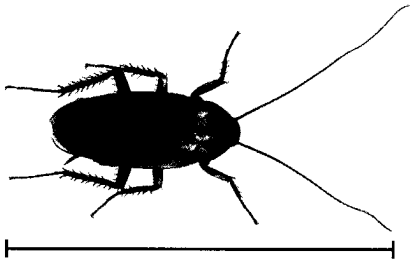
cm

(c)



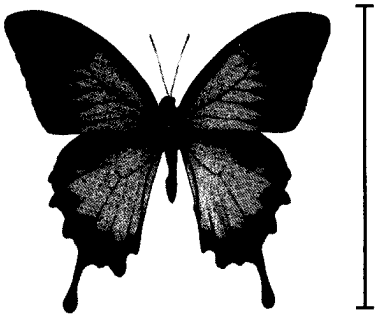
inch

(b)



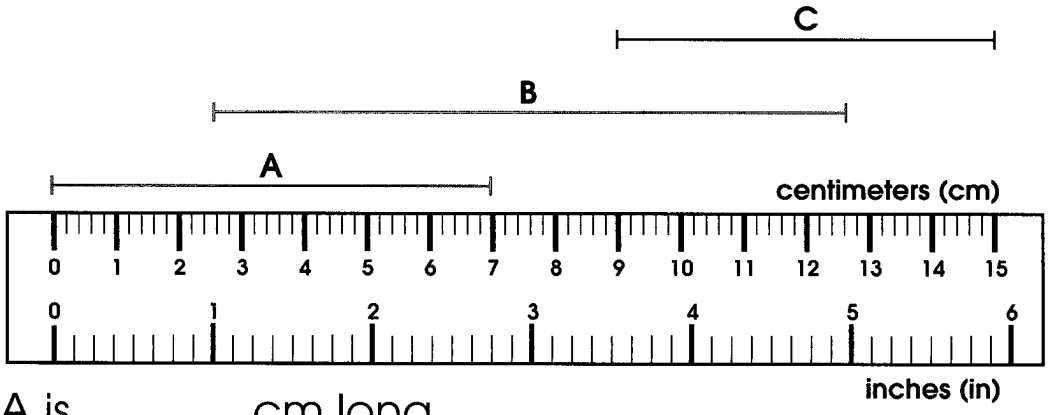
inch

(d)



cm

2. Record the length of lines A, B, C in the blanks below.



Line A is _____ cm long.

Line B is _____ inches long.

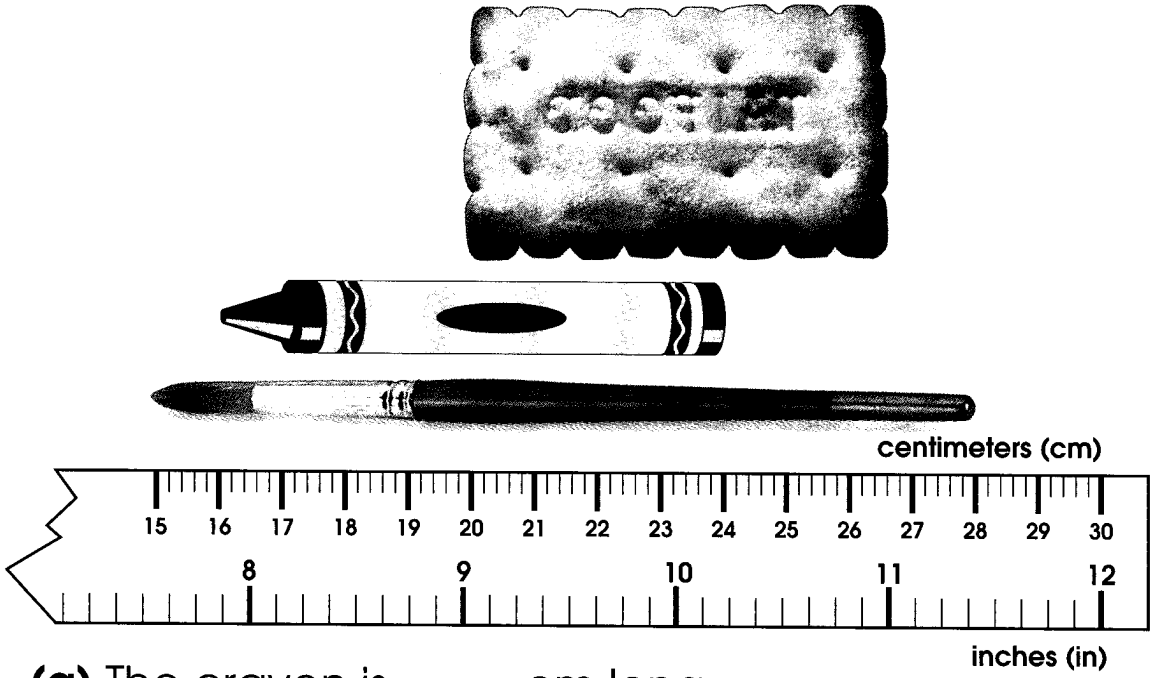
Line C is _____ cm long.

Practice 4A

1. Complete the table with 'cm' or 'm'.

Object	Measure approximately
Height of door	2 ☐
Height of ladder	3 ☐
Length of straw	22 ☐
Length of haircomb	15 ☐

2. Fandi needs to measure some objects but his ruler is broken. Help him find the correct measurements.



(a) The crayon is _____ cm long.

(b) The paint brush is _____ cm long.

(c) The cookie is _____ inches long.

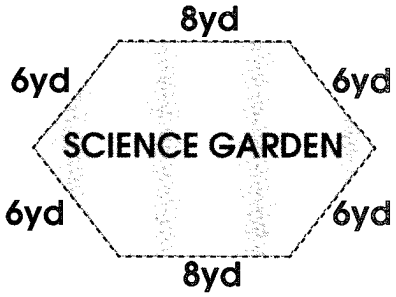
(d) The paint brush is _____ cm longer than the crayon.

3. Draw a line 5 cm long. Label the line AB.
Then draw:
(a) a line 4 cm longer than AB;
(b) a line 1 inch shorter than AB.

Let's Learn

Adding and subtracting lengths

1. Mike walked around the science garden once. What is the distance he walked?

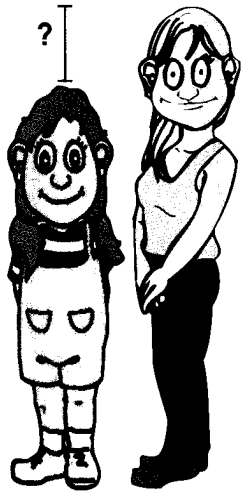


We add up the length of all sides of the garden:

$$6 \text{ yd} + 6 \text{ yd} + 8 \text{ yd} + 6 \text{ yd} + 6 \text{ yd} + 8 \text{ yd} = 40 \text{ yd}$$

Mike walked 40 yards.

2. Sally is 153 cm tall.
Her mother, Mrs. Doll, is 162 cm tall.
How much taller is Mrs. Doll than Sally?



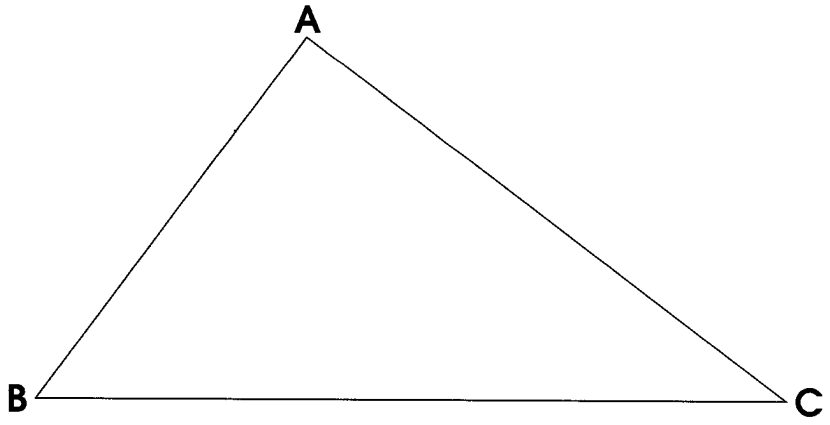
We subtract Sally's height from Mrs. Doll height:

$$162 \text{ cm} - 153 \text{ cm} = 9 \text{ cm}$$

Mrs. Doll is 9 cm taller than her.

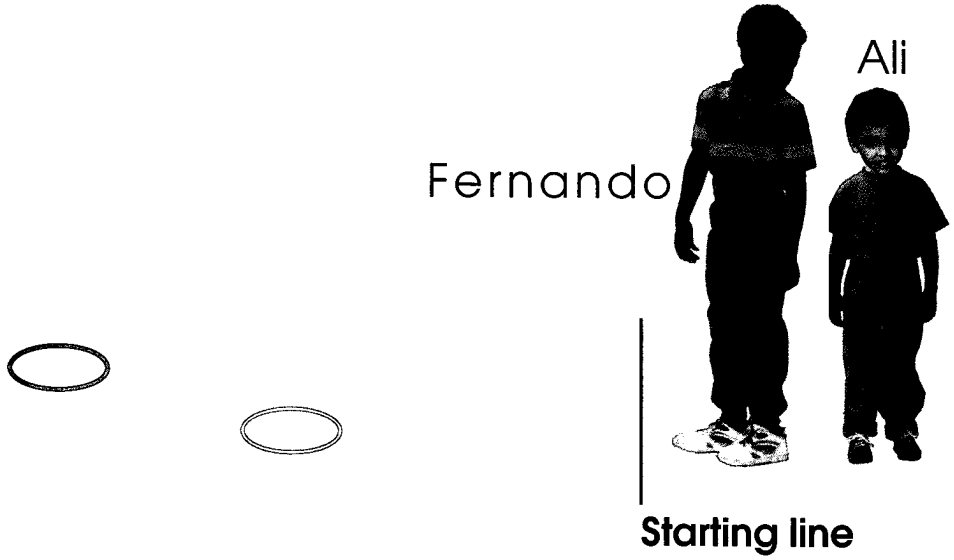
Let's Try

1. Measure and write the length of each side of the triangle.



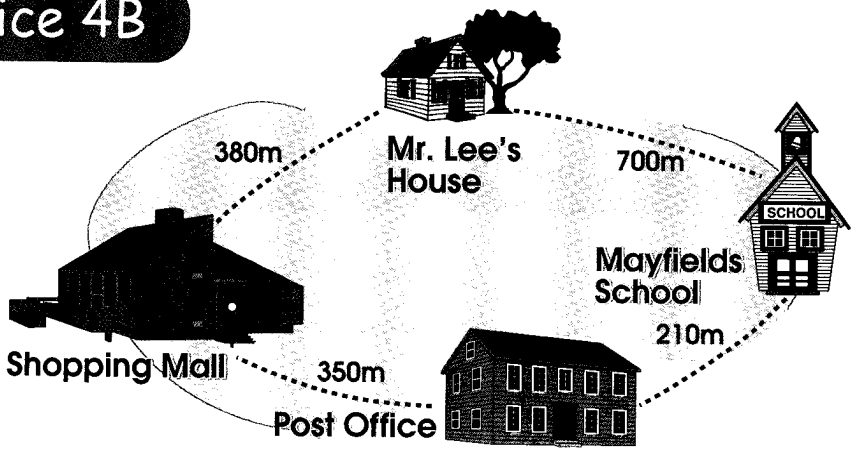
AB = _____cm AC = _____cm BC = _____cm

2. In a rubber band shooting contest, Ali's rubber band landed 125 cm from the starting line. Fernando's rubber band landed 187 cm from the starting line.



How much further did Fernando's rubber band land than Ali's?

Practice 4B



(a) Mr. Lee is a teacher at Mayfields School. What is the distance he has to cycle to school everyday?

(b) Which is the shorter distance from Mr Lee's house to the Post Office - the road passing by the school or the road passing by the shopping mall? How much shorter is it?

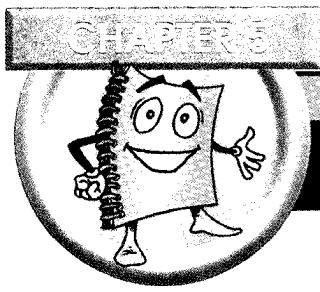
Find out these fun facts!

1. What is the longest living animal on earth?
The _____ is the longest living animal and it is about _____ long.

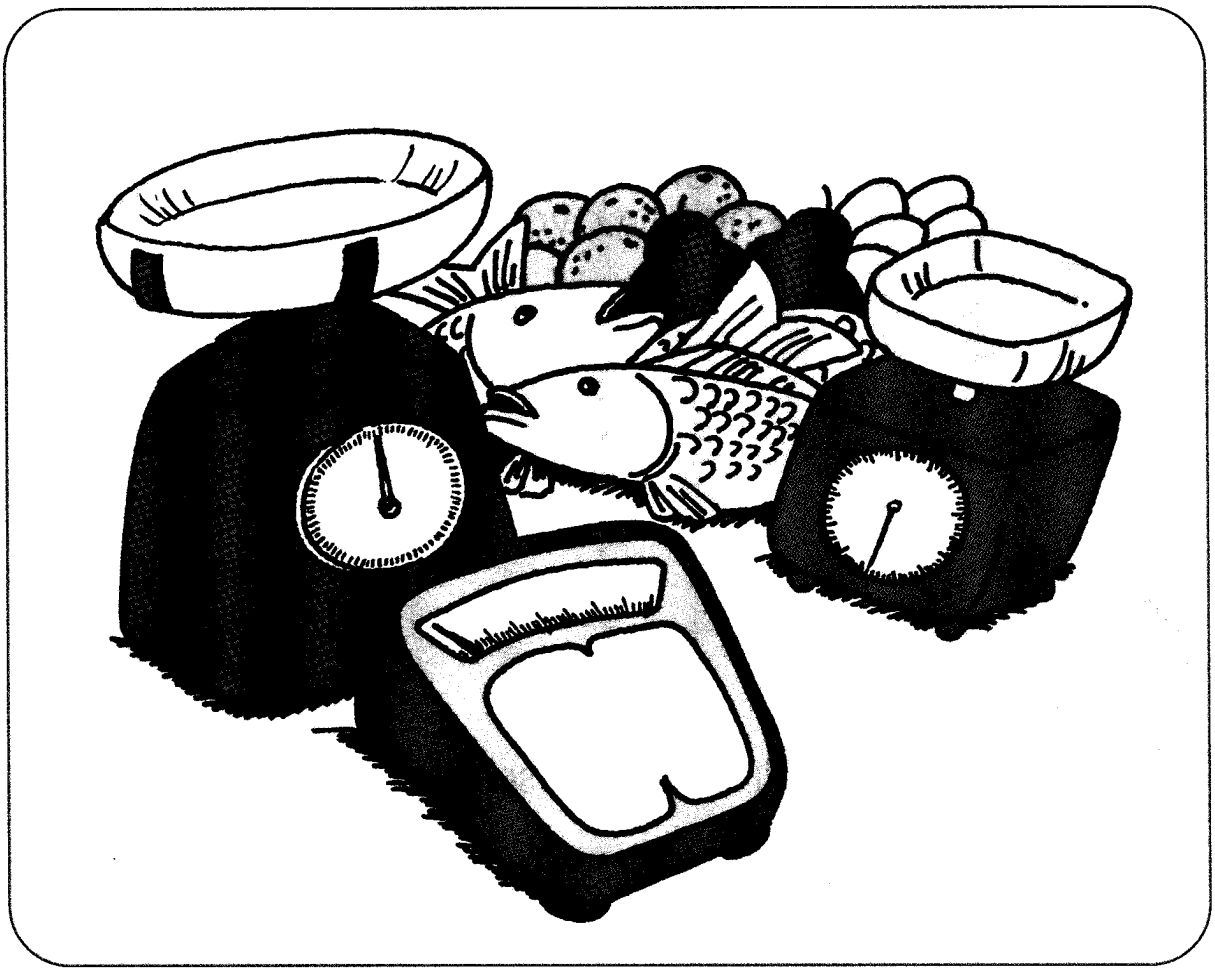
2. What is the tallest living animal on earth?
The _____ is the tallest living animal and it is about _____ tall.

3. What is the highest building in the U.S.A.?

4. _____ is the highest building in the U.S.A. and it is about _____ high.



MASS



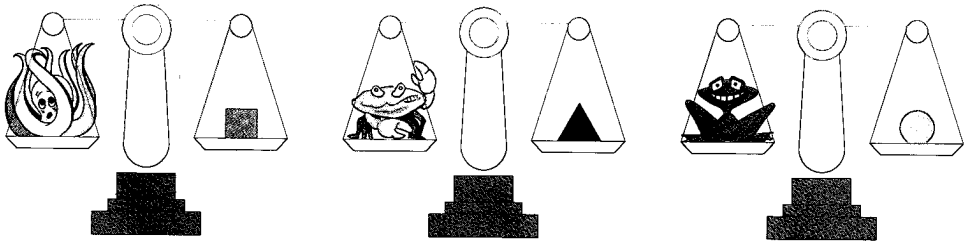
Do You Know?

Mass of a body is the matter inside the body.
The mass of things is measured in many ways.
What instrument do we use to measure mass?

Let's Learn

Measuring in kilograms/pounds

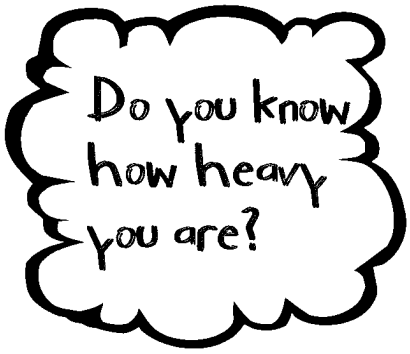
Compare the masses of the things in the picture.

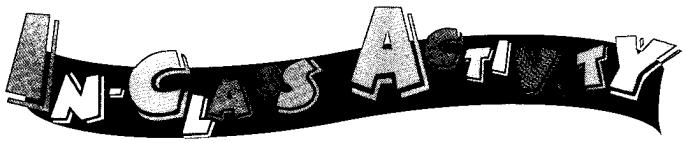


It is not easy to compare mass using different units.

We can use a standard unit to measure mass called the **kilogram**.
We write **kg** for kilogram.

Pound is another unit of mass.
We write **lb.** for pound.





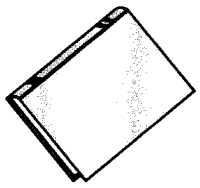
Weighing against 1 kilogram.

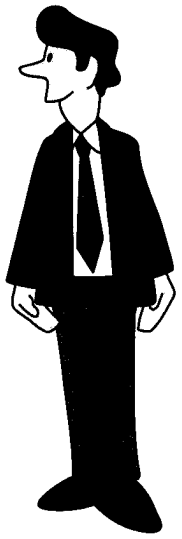
Weigh things that you can find in your classroom. List 3 things heavier than 1 kg and 3 things lighter than 1 kg in the table below.

Objects heavier than 1 kg	Objects lighter than 1 kg

Let's Try

1. Match these with their correct mass.

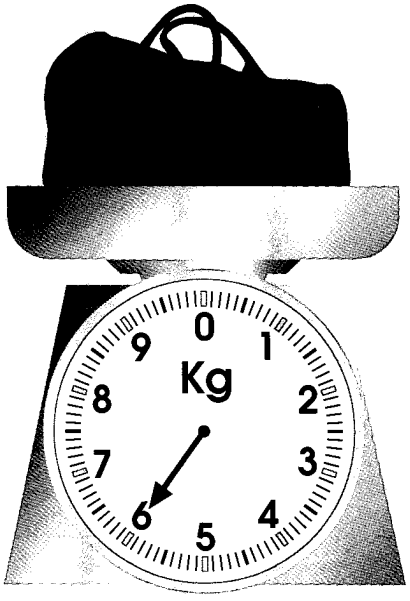




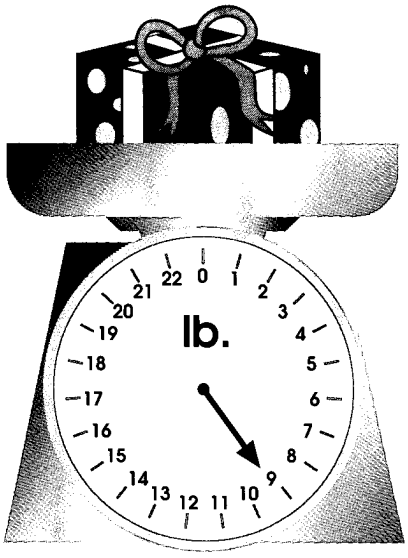
60 lb.	less than 1 kg	2 kg
	15 kg	150 lb.

2. Can you read the mass?

(a)

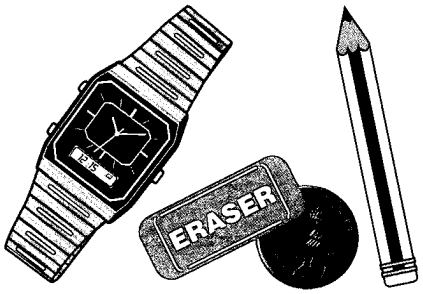


(b)



Let's Learn

Measuring in grams/ounces



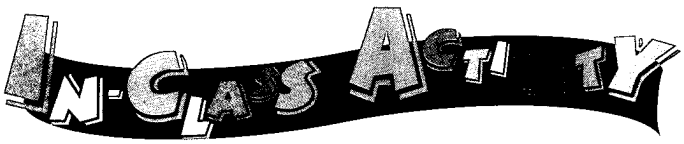
Hold a coin, pencil, watch and an eraser in your hand.

Are the objects very heavy?
Kilogram is too large a unit to measure light things.

The **gram** is another unit of measurement of mass.
We write **g** for gram.

Small masses are also measured in **ounces**.
We write **oz.** for ounces.

We use grams/ounces to measure light things.



I. Weighing scales

You will be shown a scale.

Look at the scale carefully and answer the following questions.

1. Up to how many kilograms can the scale measure?

2. What is the difference in mass between each marking?

II. How heavy is it?

Estimate the mass of four different objects taken from your school bag. Then weigh them one at a time on the scale. Record the results in the table.

Objects	My guess:	It weighs:
	about _____ g	_____ g
	about _____ oz.	_____ oz.
	about _____ oz.	_____ oz.
	about _____ g	_____ g

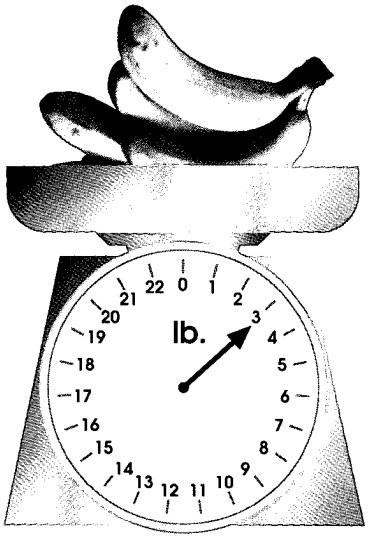
Let's Try

1. Circle the most reasonable mass of each object.

(a) sewing needle	4g	40g	4kg
(b) tin of fruits	10 oz.	1 oz.	1 lb.
(c) paper clip	6g	60g	6kg
(d) puppy	20g	2kg	200g
(e) television set	4 oz.	4 lb.	40 lb.

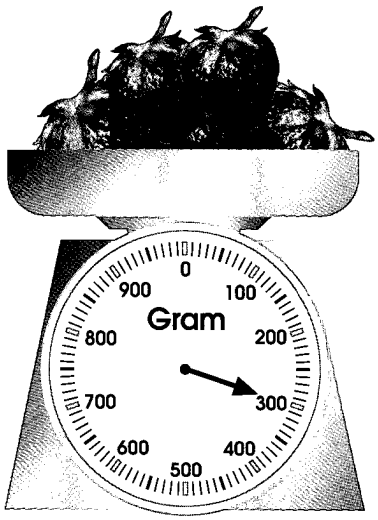
2. What is the mass of the fruits?

(a)



_____lb.

(b)

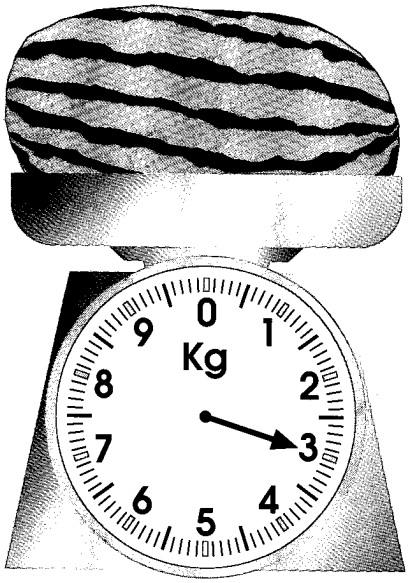


_____g

Practice 5A

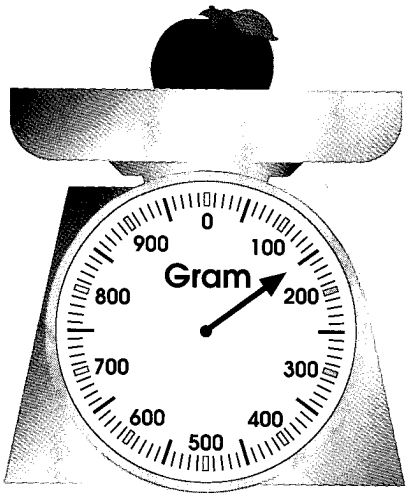
1. Read the mass of the objects and write it in the blanks given.

(a)



The watermelon weighs _____ kg.

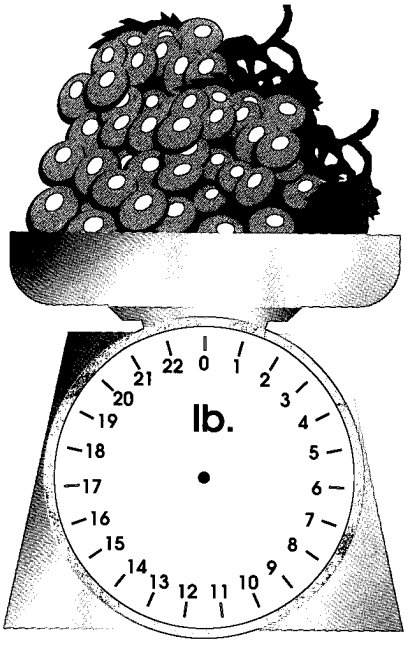
(b)



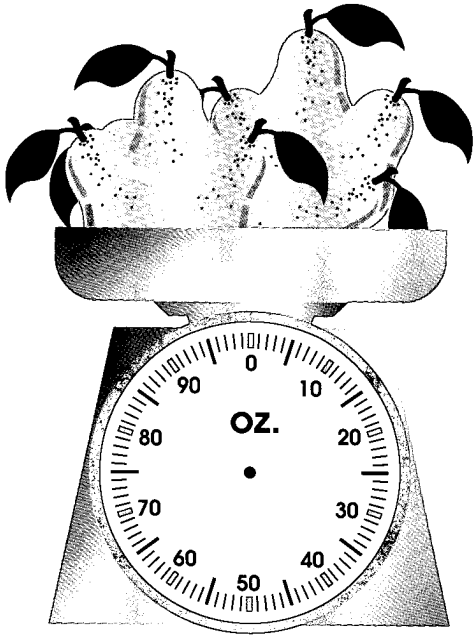
The apple weighs _____ oz.

2. Draw the pointers correctly to show the given mass.

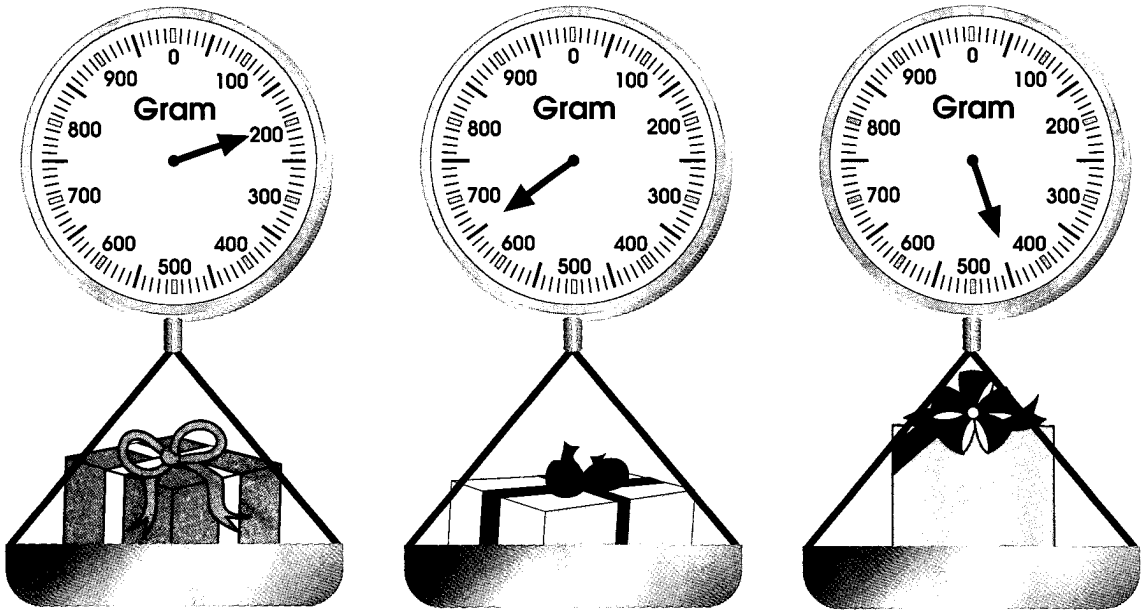
(a) Grapes: 3 lb.



(b) Pears: 30 oz.



3. Look at the picture carefully. Then fill in the blanks.



A B C

(a) Parcel _____ is the heaviest.

(b) Parcel _____ is the lightest.

(c) Parcel A is _____ than parcel C.

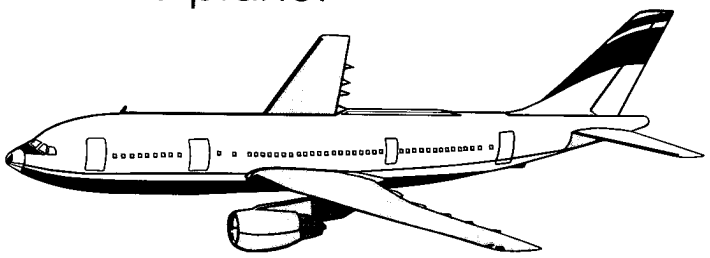
(d) The mass of parcels A and B is _____ g altogether.

(e) Parcel A is _____ g lesser than parcel B.

Let's Learn

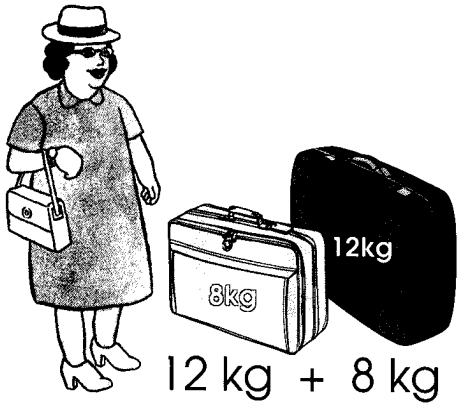
Adding and subtracting mass

1. Each passenger is allowed to check in 20 kilograms of luggage onto a plane.



Can Mary and John check in all their luggage onto the plane?

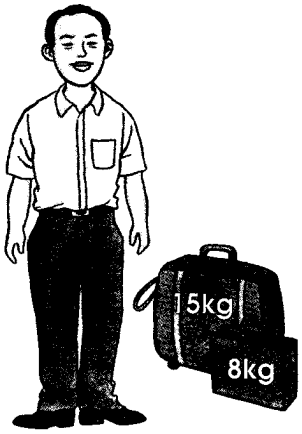
(a)



12 kg + 8 kg = 20 kg

Yes, Mary can check in her luggage onto the plane.

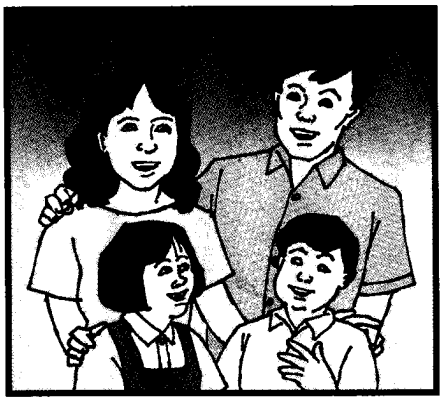
(b)



15 kg + 8 kg = 23 kg

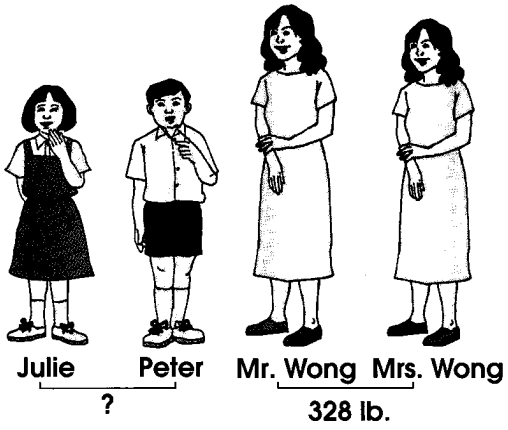
No, John cannot check in all his luggage onto the plane.

3. Look at the picture of the Wong Family.



Their total mass is 557 lb.

(a) If Mr. and Mrs. Wong weigh 328 lb. altogether, find Julie and Peter's total mass.



557 lb. - 328 lb. = 229 lb.

The mass of Peter and Julie is 229 lb. altogether.

(b) If Peter, Mr and Mrs Wong weigh 452 lb., find Julie's mass.

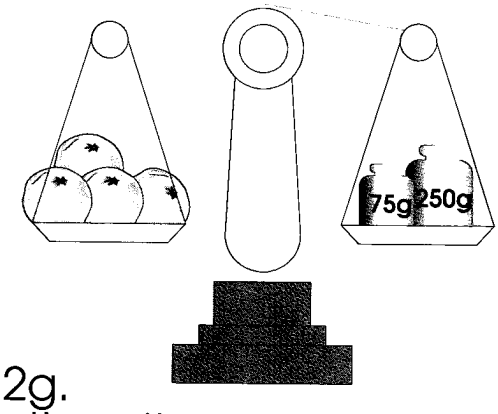
557 lb. - 452 lb. = 105 lb.

The mass of Julie is 105 lb.

Practice 5B

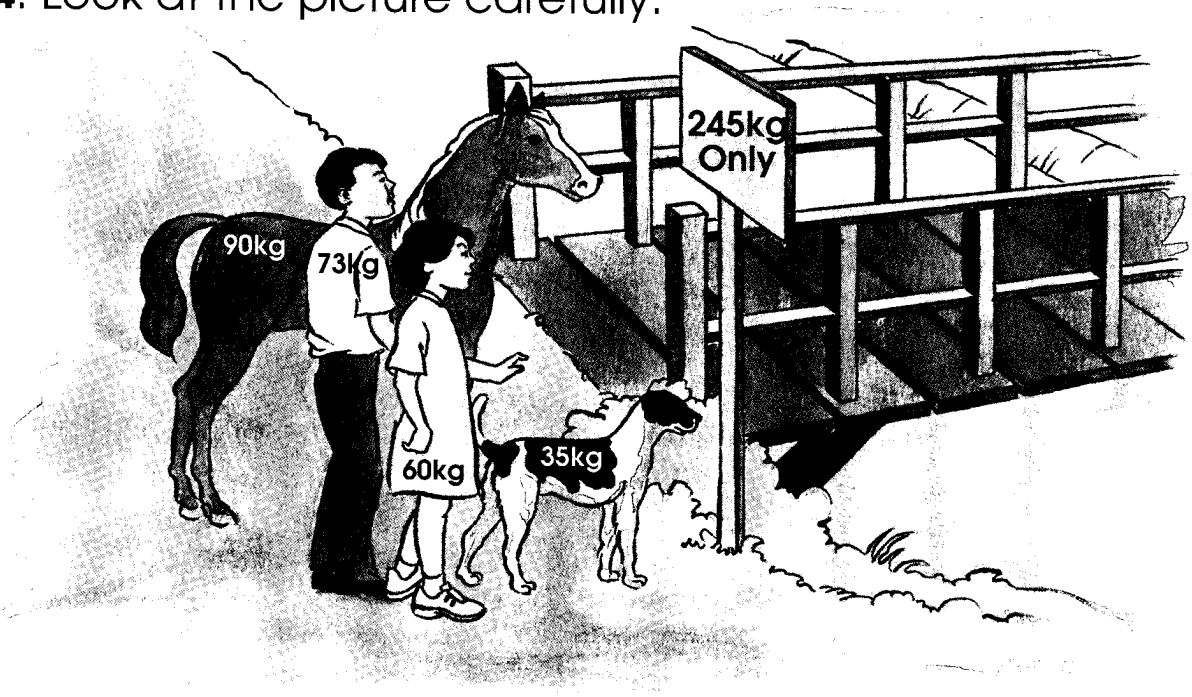
1. Pauline's mass was 77 lb. last year. Now, her mass is 89 lb. How much mass has she gained?

2. The mass of the oranges is _____ g.



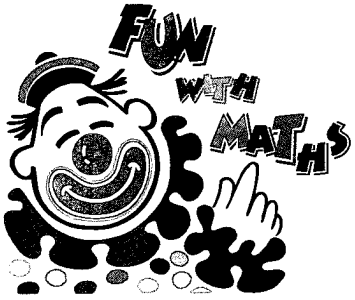
3. The mass of a peach is 132g.
A papaya is 159 g heavier than the peach.
How heavy is the papaya?

4. Look at the picture carefully.

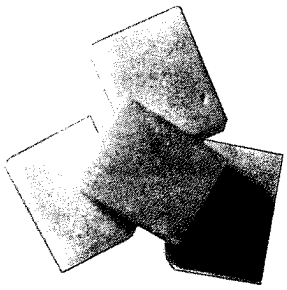


(a) Can the man and woman cross the bridge together with their animals?

(b) Which animal can the couple take across the bridge?



The recipe on the right shows how to bake Cornflake Delights.



If you want to bake 3 times more "Cornflake Delights", how much butter would you need?

Ingredients
25 g of butter
2 tablespoons of syrup or honey
1 tablespoon of cocoa powder
2 tablespoons of sugar
7 tablespoons of cornflakes
20 cupcake paper cups

Method

Step 1 Lay out the cupcake paper cups on a wooden board.

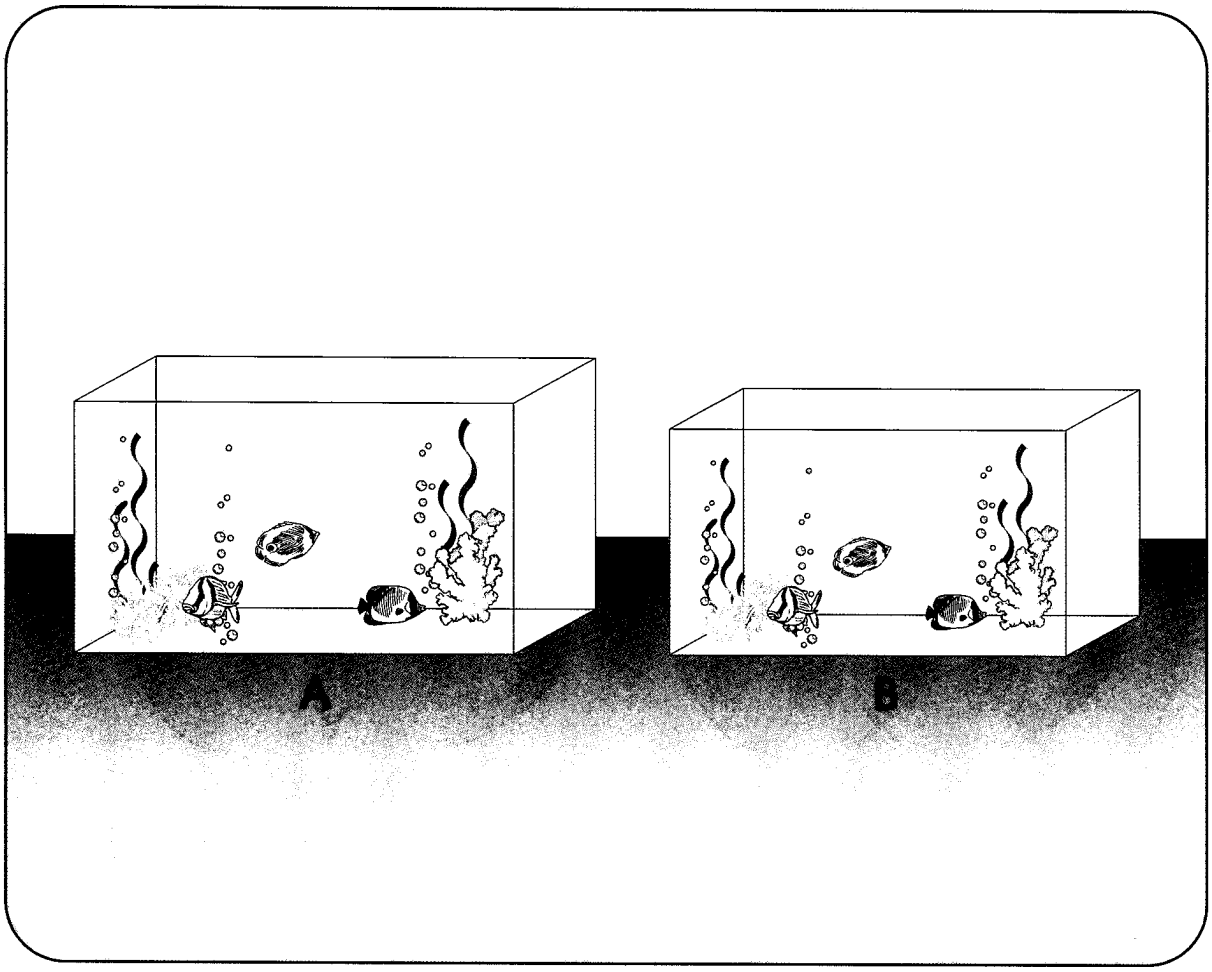
Step 2 Put the butter into a saucepan and add syrup. Leave the saucepan over a low heat until the butter melts. Then stir in the cocoa powder.

Step 3 Remove the saucepan from the heat and add sugar. Put in the cornflakes. Stir quickly until the cornflakes are coated with the cocoa mixture.

Step 4 Using 2 teaspoons, scoop the coated cornflakes into the cupcake paper cups. Leave to set.

CHAPTER 5

VOLUME



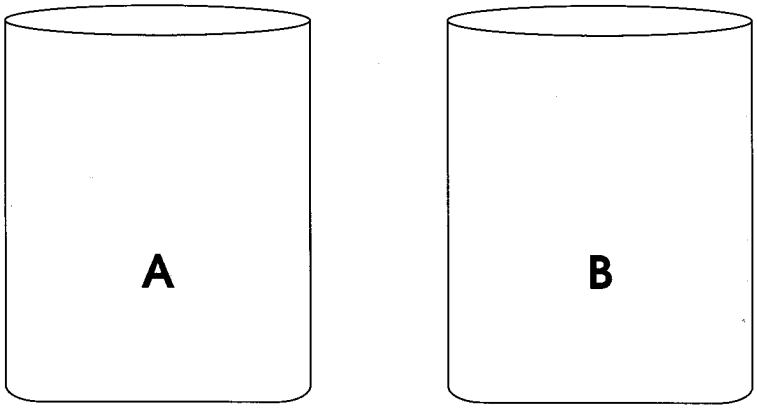
Do You Know?

Look at the two fish tanks. Fish tank A seems to have more water than fish tank B.

How can we check if this is true?

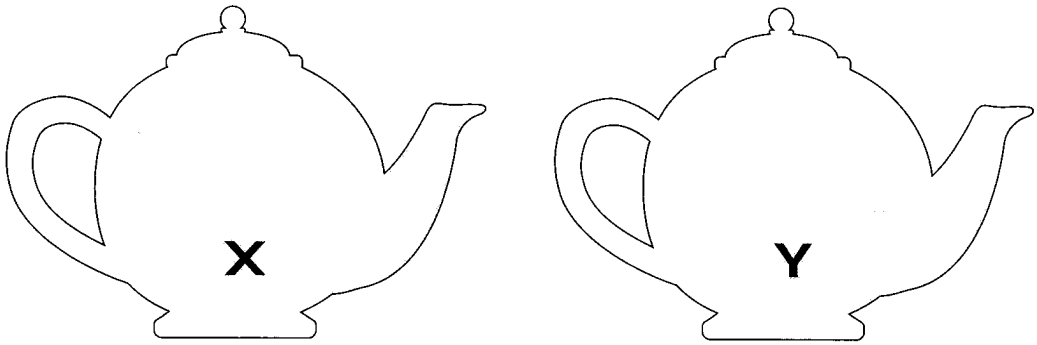
Let's Learn

Understanding volume



Container B has more water than Container A.

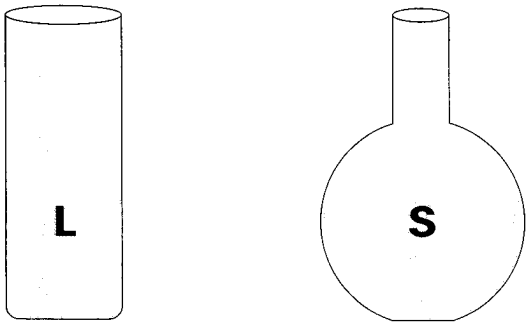
We say that the volume of water in Container B is more than the volume of water in Container A.



The volume of tea in pot X is more than the volume of tea in pot Y.

The volume of liquid in a container is the space the liquid takes up.

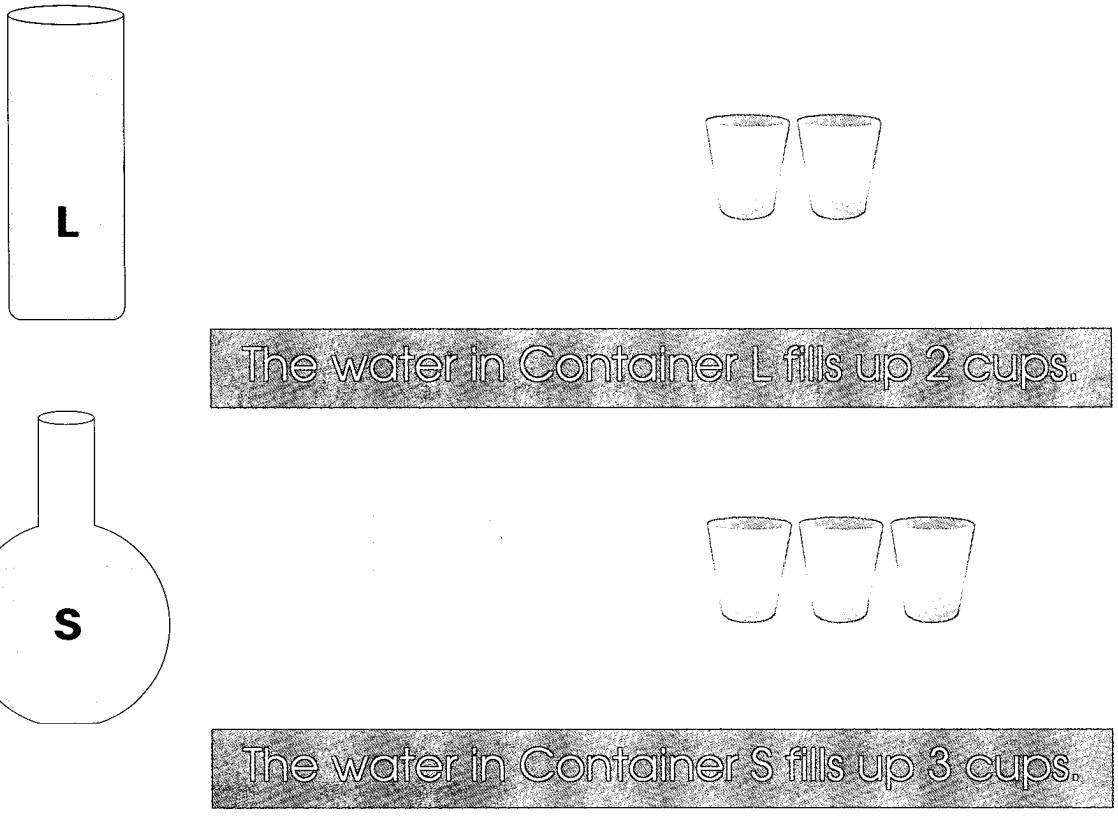
Comparing volumes



Containers L and S look different.

How can we compare the volume of water in the two containers?

We can use a cup as a unit of measure to find out their volumes.



The volume of water in Container S is 1 cupful more than the volume of water in Container L.

IN-CLASS ACTIVITY

Your teacher will show you two containers of water.

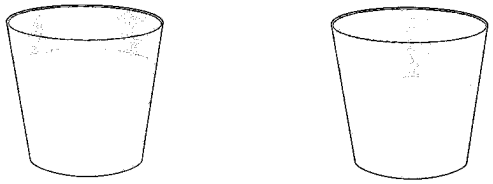
Which container do you think has the bigger volume of water? Now use plastic cups to measure out the water in each container. What is the result?

Let's Try

1. Circle the container that has more water.

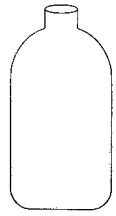
a)

b)

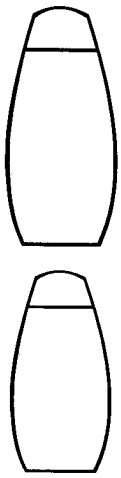


2. Tick the bottle that contains less water.

a)



b)

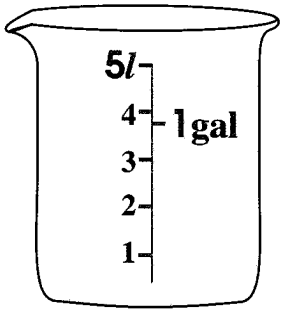


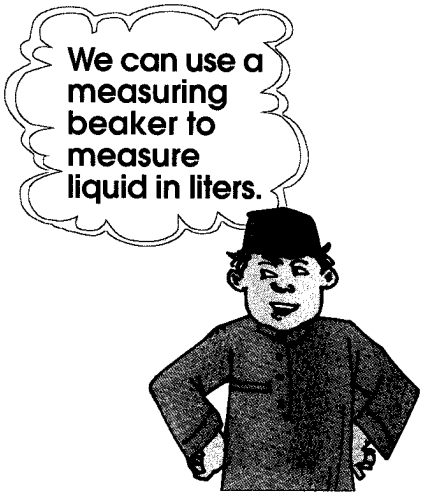
Let's Learn

Measuring volume in liters/gallons

Liter is the standard unit of volume.
We write *l* for liter.

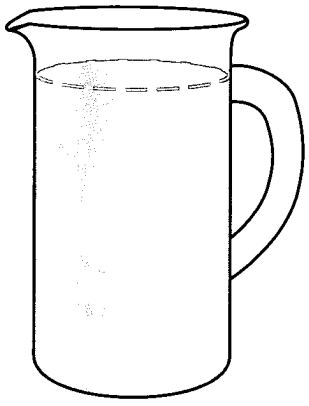
Gallon is another unit used for measuring volume.
We write **gal** for gallon.

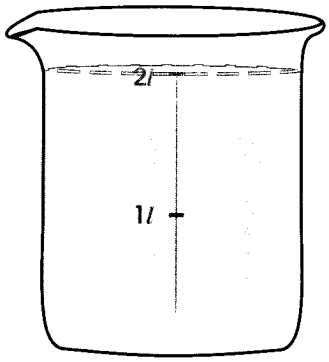




The volume of water in the beaker is 5 liters or 5*l*.

What is the volume of the juice in the jug?



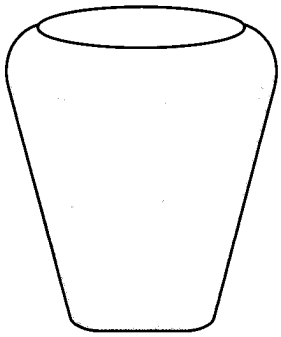


The volume of the juice is 2*l*.

The volume of the juice is less than the volume of the water.

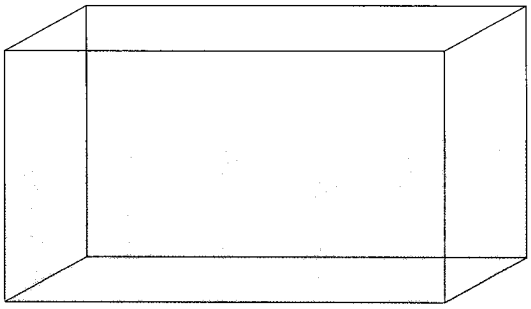
Keeping volume the same

A vase contains 3 liters of water.



The volume of the water in the tank is still 3 liters!

The water in the vase is poured into an empty tank.



The volume of the liquid remains the same though the container may be different.

In-Class Activity

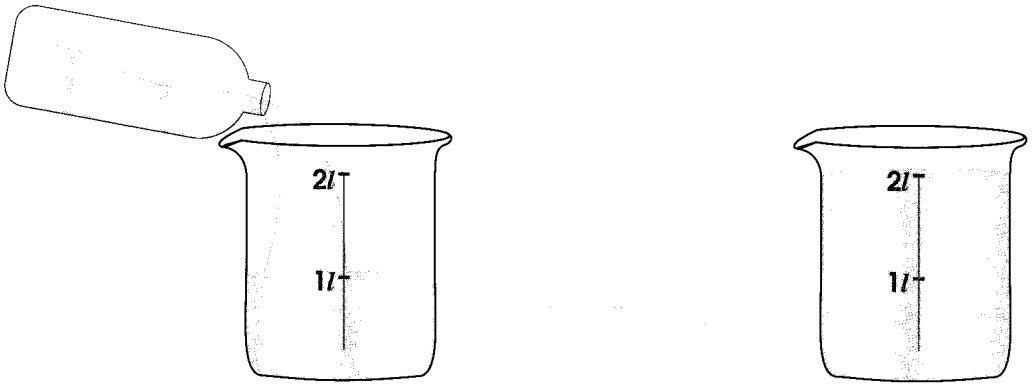
Bring 3 containers of different shapes to school. Using the measuring beaker provided, pour 1 liter of water into each container.

Look at the water level in the containers. Are they the same?

Is the volume of the water in each container the same? Why? Discuss.

Let's Try

Mary measured the volume of milk in the bottle.



The volume of the milk is _____.

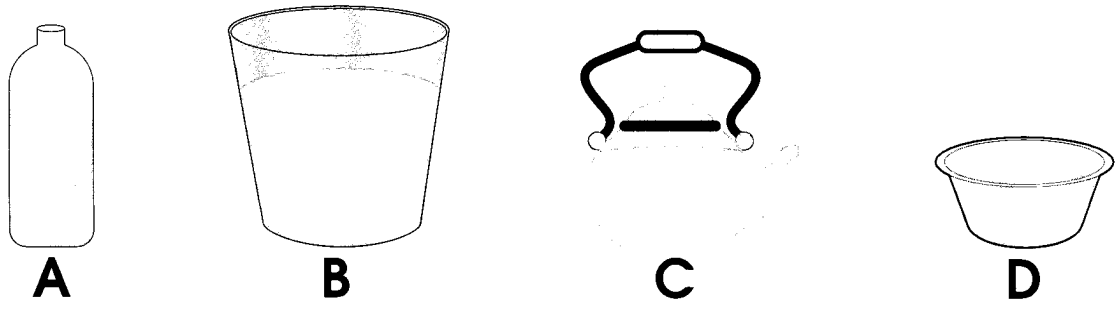
Practice 6A

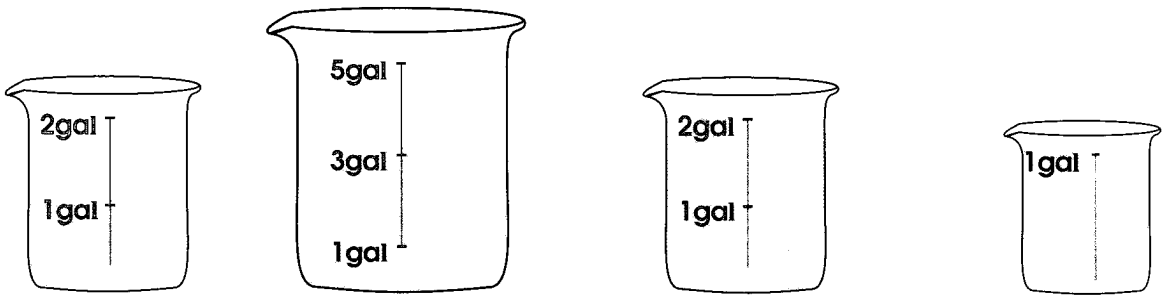
1. Arrange the following measures of liquid from the smallest to the biggest.

19*l* 2 liters 3 liters 6*l*

_____, _____, _____, _____.

2. Write 'more than' or 'less than' in the blanks.





a) The water in Container B is _____ **gal**.

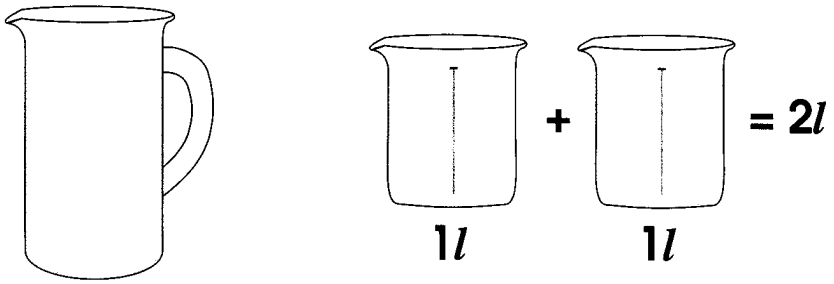
b) Containers _____ and _____ have the same volume of water.

c) Container _____ has a bigger volume of water than Container C.

Let's Learn

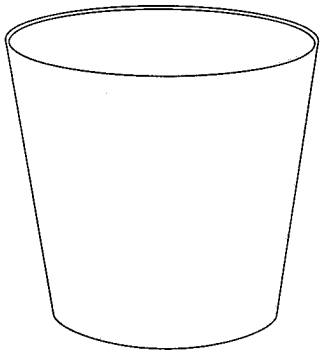
Addition and subtraction of volume

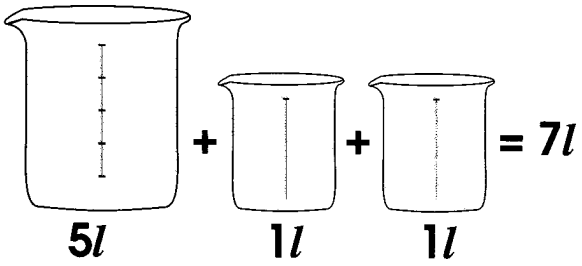
What is the volume of the water in the jug?



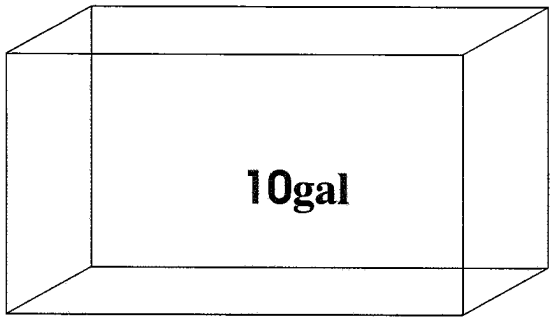
The volume of the water in the jug is _____.

What is the volume of the water in the pail?

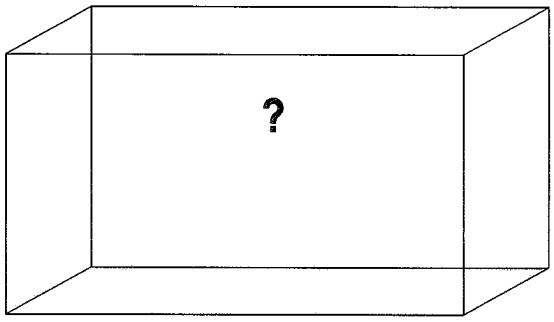




The volume of water in the pail is _____.

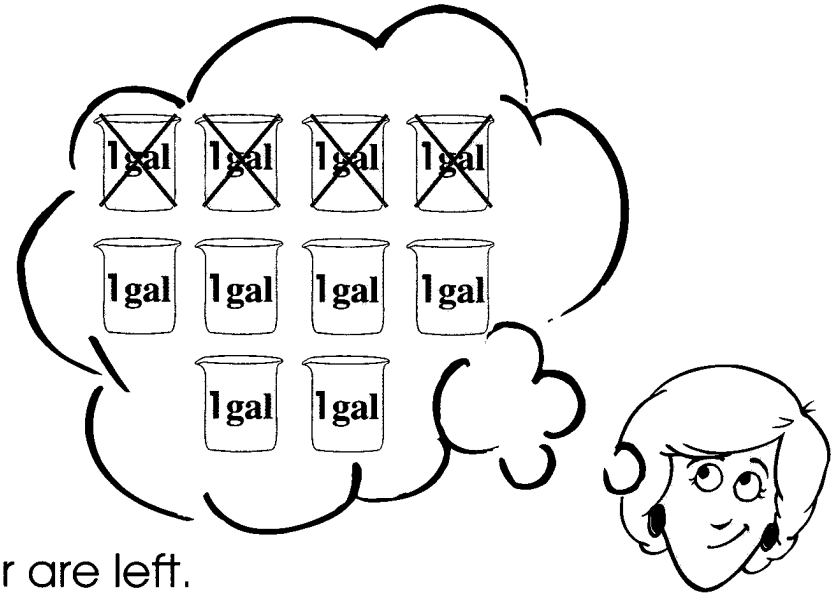


There are 10 gallons of water in this tank.



4 gallons of the water are used.

How much water is left in the tank?

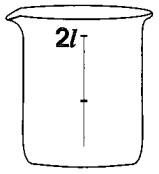


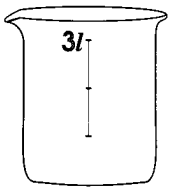
10 - 4 = 6 gal

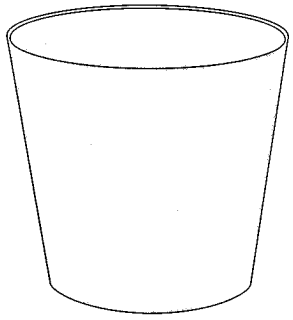
6 gallons of water are left.

IN-CLASS ACTIVITY

You are given the following things. Can you measure out 1 liter of water from the pail? What are the different ways. Discuss in groups of five. Report your result to the class.

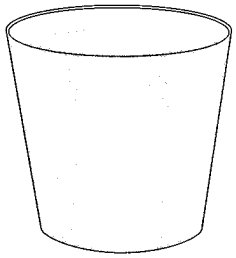


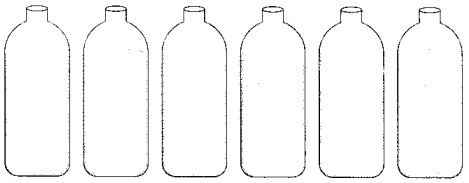




Let's Try

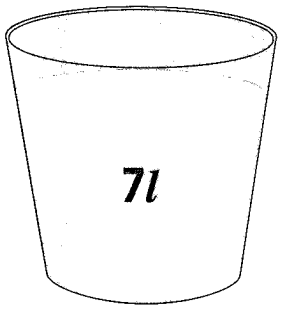
1. Each bottle has 1 liter of water.
What is the total volume of water in the pail?





The total volume of water in the pail is _____ *l*.

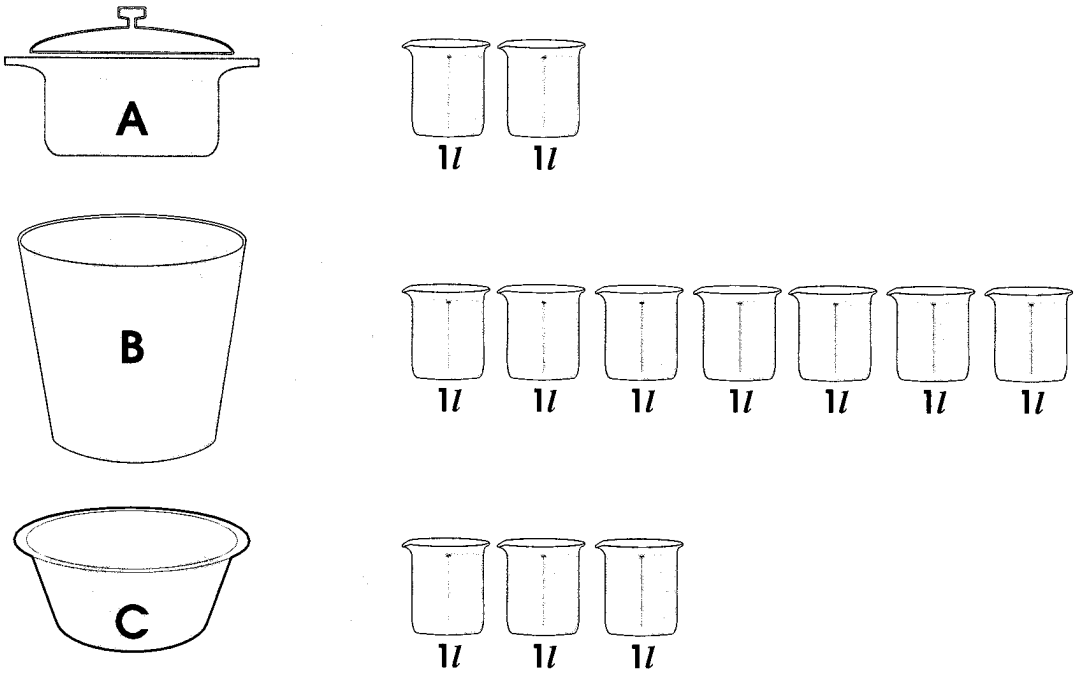
2. A pail contains 7 liters of water. 3 liters of this water is poured out. What is the volume of the water left in the pail?



_____ of water is left in the pail.

Practice 6B

1. Look at the picture carefully and fill in the blanks.



The volume of water in container _____ is more than container C.

The water in container B has a volume _____ *l* more than the water in container A.

The volume of water in container C is _____ *l* less than the water in container B.

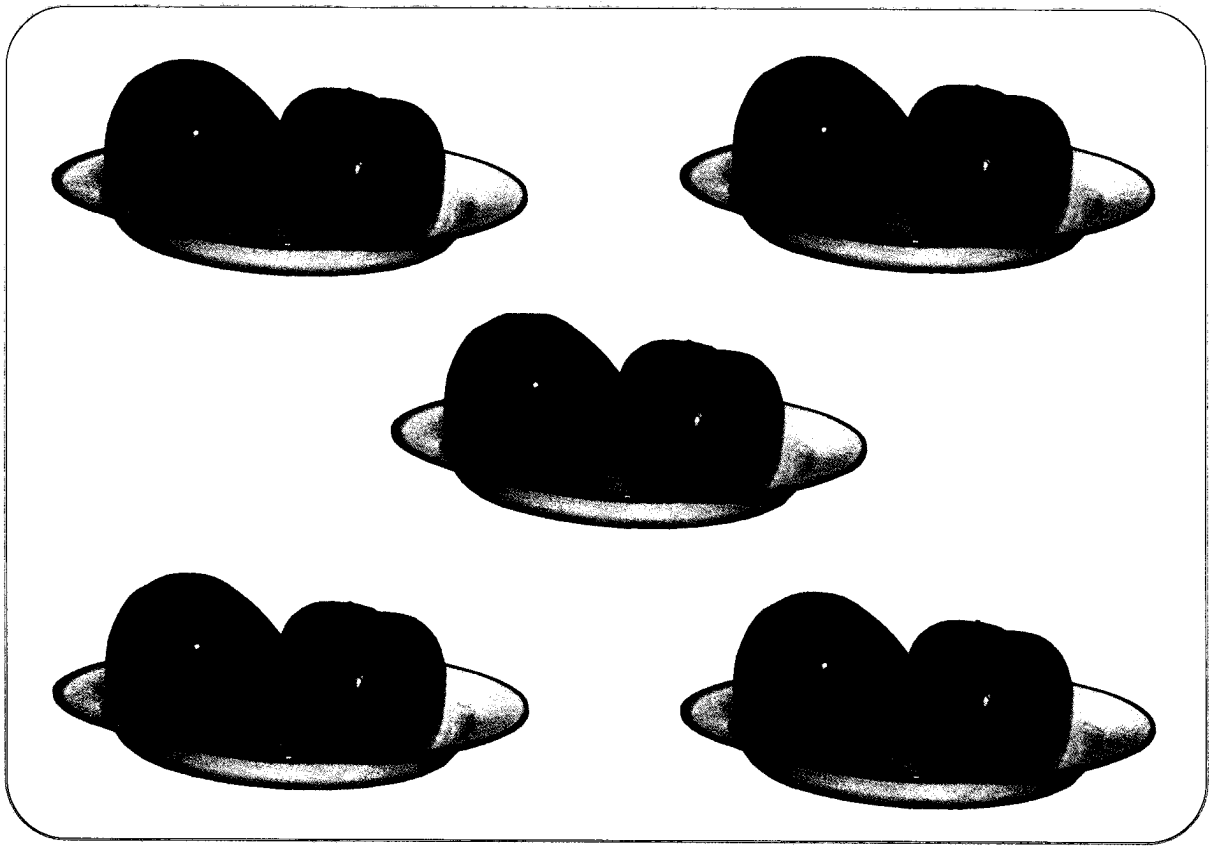
The water in container A has a volume _____ *l* less than the water in container C.

2. Maria used 5 liters of water to wash dishes. She used another 17 liters of water to wash clothes. What was the volume of water she used in all?

3. There were 19 gallons of water in a tank. 3 gallons of the water were used. What was the volume of water that was left in the tank?

CHAPTER 7

MULTIPLICATION AND DIVISION I



Do You Know?

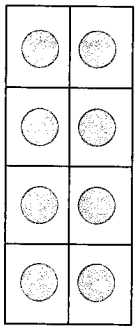
Ruth has 3 different ways to find out the total number of apples. What are her ways?

Can you find more ways to solve the problem?

Let's Learn

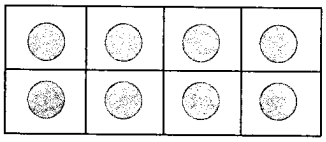
Multiplication of 2

Look at the rows of beads.



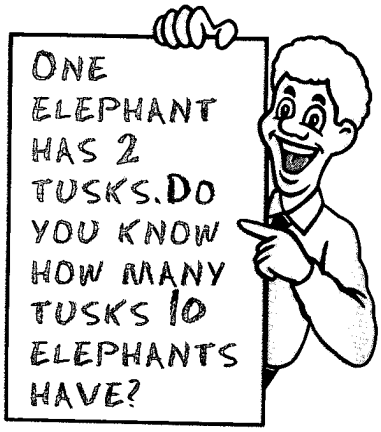
How many beads are there altogether?

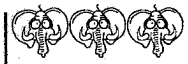
There are 4 rows of 2 beads each.
We write this as, 4 x 2 = 8.
We say : Four **times** two is eight.

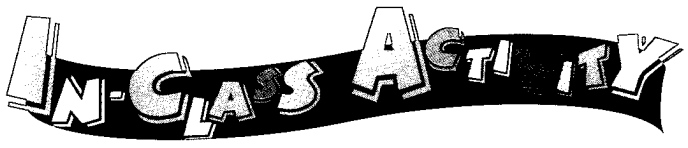


There are 2 rows of 4 beads each.
We write this as, 2 x 4 = 8.
We say : Two **times** four is eight.

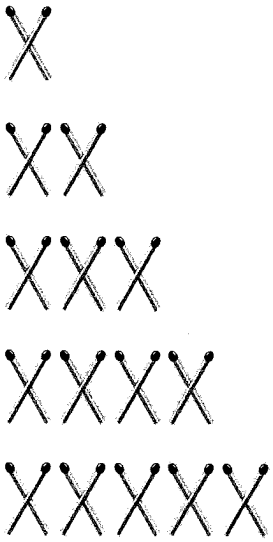
There are 8 beads altogether.



Multiplication table of 2		We say
1 x 2 = 2	 2 + 0 = 2	1 two
2 x 2 = 4	 2 + 2 = 4	2 twos
3 x 2 = 6	 2 + 2 + 2 = 6	3 twos
4 x 2 = 8	 2 + 2 + 2 + 2 = 8	
5 x 2 = 10		
6 x 2 = 12		
7 x 2 = 14		
8 x 2 = 16		
9 x 2 = 18		
10 x 2 = 20		



Use match-sticks to make crosses.
Make patterns of twos.
Then write multiplication sentences as shown:



2 x 1 = 2

2 x 2 = 4

2 x 3 = 6

2 x 4 =____

2 x 5 =____

2 x 6 =____

2 x 7 =____

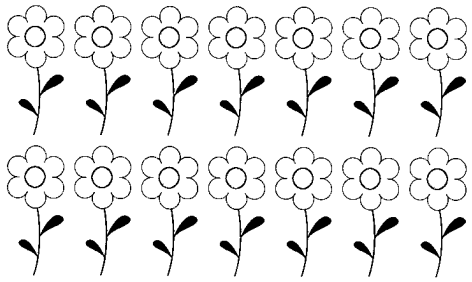
2 x 8 =____

2 x 9 =____

2 x 10 =____

Let's Try

1. Count the number of flowers in each row.
Then complete the number sentences.



There are _____ rows of _____ flowers each.

___ x ___ = ___

There are___ columns of ___ flowers each.

___ x ___ = ___

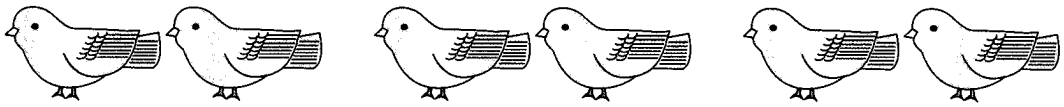
There are _____ flowers altogether.

2. Draw a picture in the box to show the given multiplication fact.

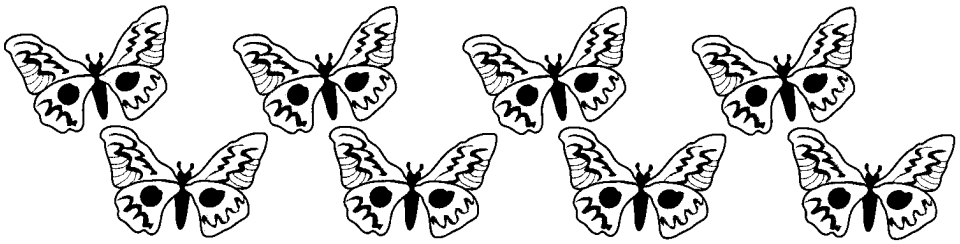
$3 \times 2 = 6$

Practice 7A

1. Write a multiplication sentence for each picture.

(a) 

_____ x _____ = _____

(b) 

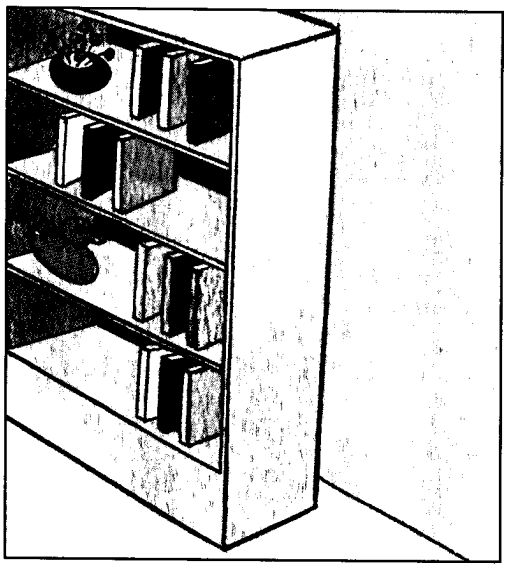
_____ x _____ = _____

2. Use the multiplication table of 2 to complete this table.

	1	10	7	3	5	8
2X	2					

Let's Learn

Multiplication of 3



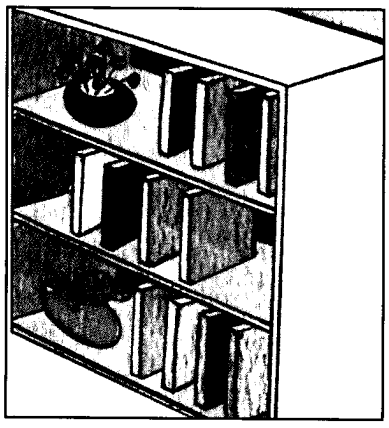
How many books are there altogether?

3 + 3 + 3 + 3 = 12

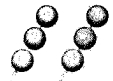
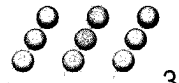
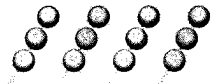
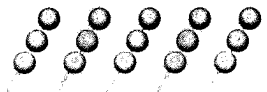
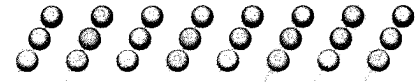
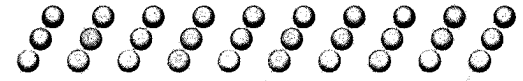
There are 4 rows of 3 books each.

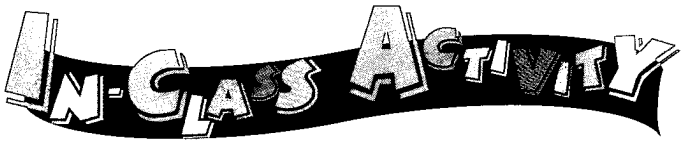
We can write this as, 4 x 3 = 12.

We say: Four **times** three is twelve.



If there were 3 rows of 4 books each,
we write this as, 3 x 4 = 12.
We say : Three **times** four is twelve.
There are 12 books altogether.

Multiplication table of 3		We say
1 x 3 = 3	 3 + 0 = 3	1 three
2 x __ = 6	 3 + 3 = 6	2 threes
3 x 3 = 9	 3 + 3 + 3 = 9	3 threes
__ x 3 = 12		4 threes
5 x 3 = 15		
6 x 3 = 18		
__ x 3 = 21		
__ x 3 = 24		
9 x __ = 27		
__ x 3 = 30		

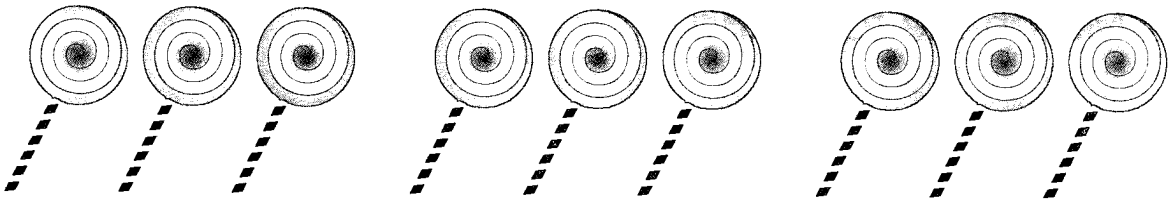


Use toothpicks to make groups of threes.
Then write multiplication sentences.
The first three patterns have been done for you.

	Number of Sticks
	3 x 1 = 3 or 1 x 3 = 3
	3 x 2 = 6 or 2 x 3 = 6
	3 x 3 = 9

Let's Try

Fill in the blanks.



There are _____ groups of _____ lollipops each.

_____ x _____ = _____

Practice 7B

1. Draw a picture of 4 baskets of 3 mangoes each in the box.

How many mangoes are there altogether?

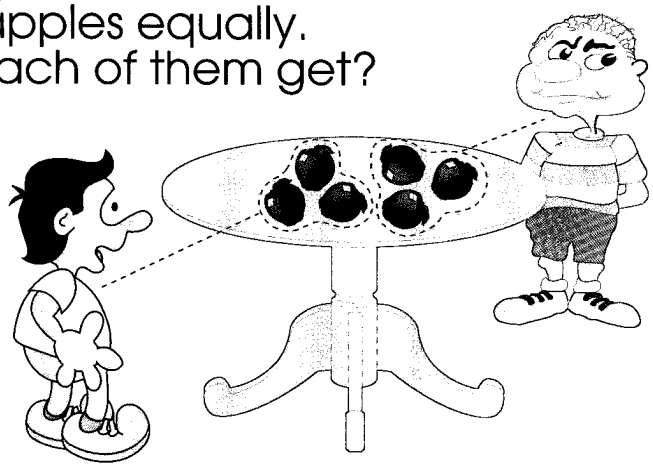
2. Match the following:

3 x 1	10 x 3
10 threes	3
3 + 3 + 3 + 3 + 3	5 x 3
9 groups of 3	27

Let's Learn

Dividing by 2

There are 6 apples altogether.
John and Sam share 6 apples equally.
How many apples will each of them get?



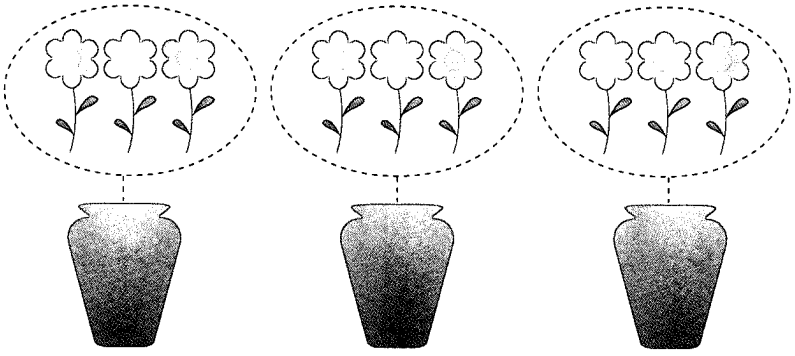
We write: $6 \div 2 = 3$

We say: Six **divided by** two is three.

So, each of them gets 3 apples.

Dividing by 3

9 flowers are put equally in 3 vases.
How many flowers are there in each vase?



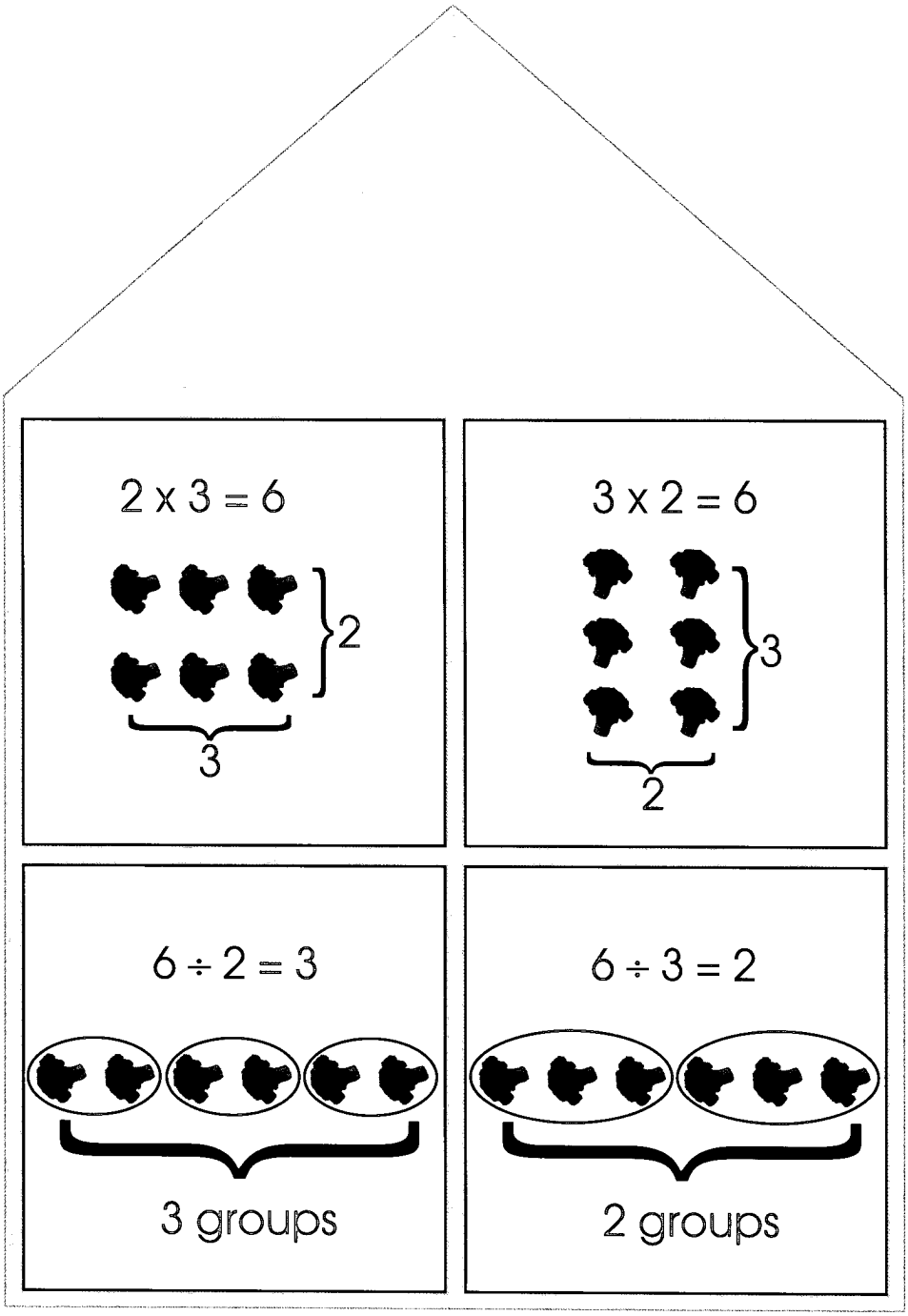
We write: $9 \div 3 = 3$

We say: Nine **divided by** three is three.

There are 3 flowers in each vase.

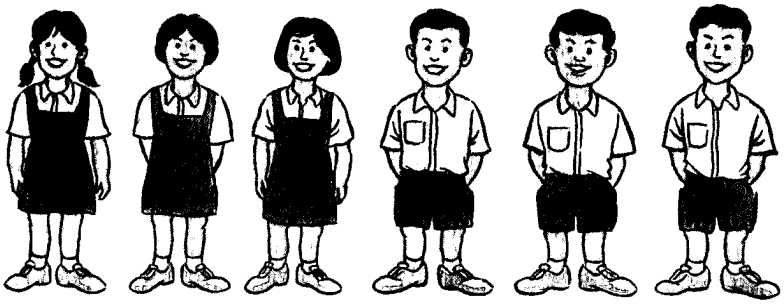
Division is equal sharing or equal grouping.
We use '÷' to show division.

Family of multiplication and division facts



Let's Try

1. Circle to show groups of two.
Then write a division sentence to show this.



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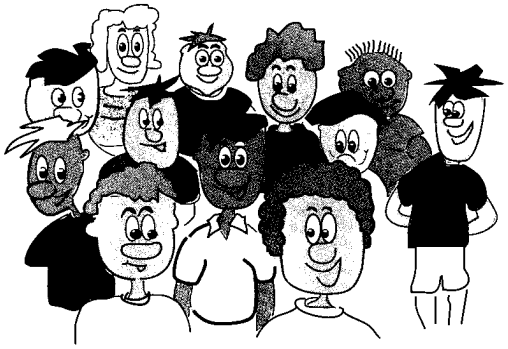
There are_____groups of twos.

2. There are 12 passengers getting into 3 cars. Each car will take an equal number of passengers. How many passengers are there in each car?

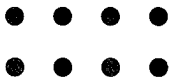


12 ◯ 3 = ☐

There are ☐ passengers in each car.

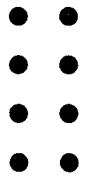
3. Complete the multiplication sentences.

(a)



_____ x _____ = 8

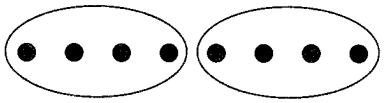
(b)



_____ x _____ = 8

4. How many groups are there?

(a)



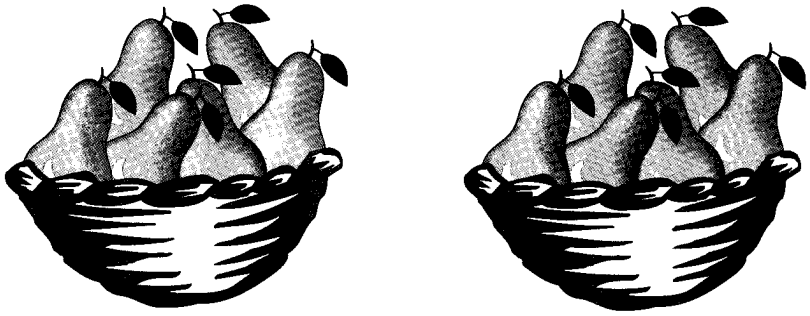
8 ÷ _____ = _____

(b)

8 ÷ _____ = _____

Practice 7C

1. Put 12 pears into 2 groups equally. How many pears are there in each group?



_____ ÷ 2 = _____

There are _____ pears in each group.

2. Look at each division statement and write a suitable question about the problem.

(a) There are 12 pencils altogether. These pencils are in 2 pencil boxes.

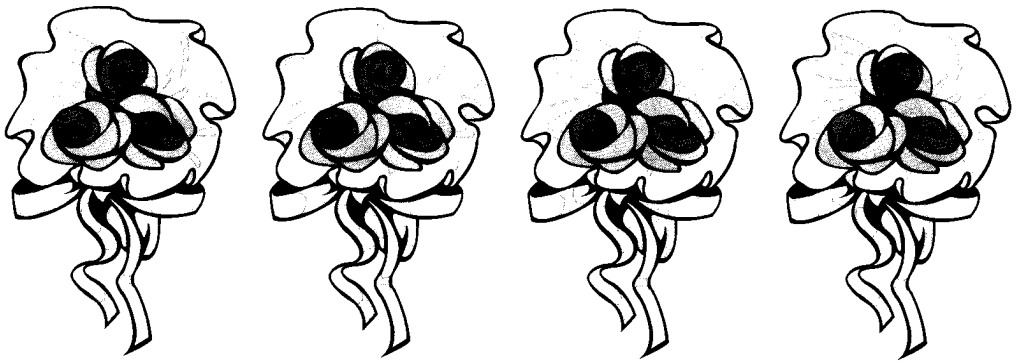
Question:_____

$12 \div 2 =$ _____

(b) There are 12 roses altogether. A florist groups them into groups of 3 each.

Question:_____

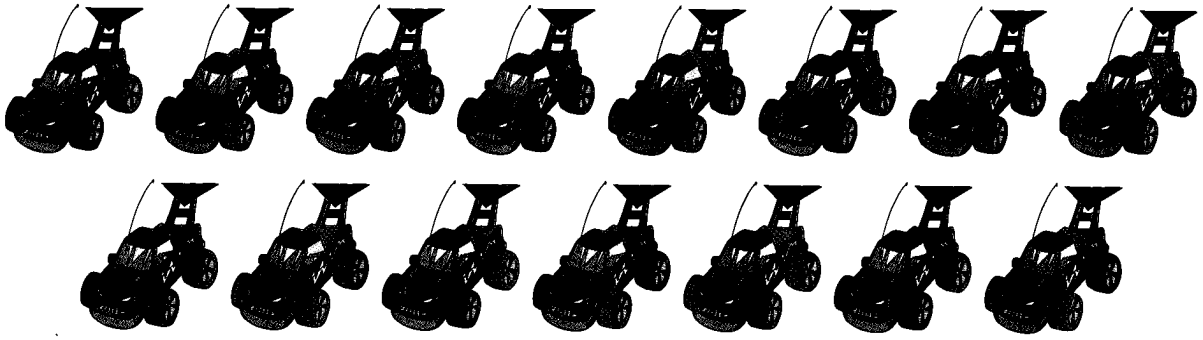
$12 \div 3 =$ _____



3. Match the following.

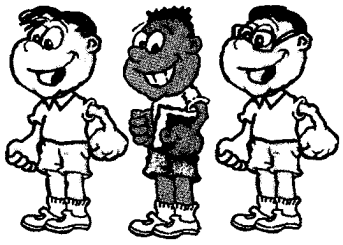
4 bones are shared equally between 2 dogs.How many bones does each dog get?	6 ÷ 3
There are 6 sweets and 3 children. If the sweets are shared equally,how many sweets does each child get?	4 ÷ 2
There are 6 girls and each girl gets 3 dolls.How many dolls are there altogether?	6 x 3
There are 2 cookies on each of the 4 plates.How many cookies are there altogether?	4 x 2

4. Fill in the blanks. Use the picture to help you find the answer.



(a) Share the toy trucks equally among 3 boys. How many toy trucks will each boy get?

15 ÷ _____ = _____



Each boy will get _____ toy trucks.

(b) How many groups of 5 toy trucks can you make from 15 toy trucks?

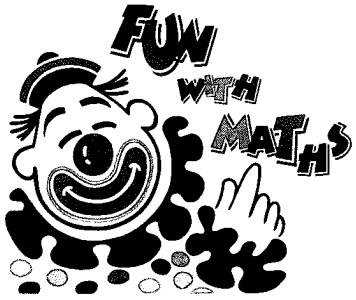
15 ÷ 5 = _____

I can make _____ groups of 5 toy trucks.

(c) Complete the family of multiplication and division facts in the table below.

5 x _____ = 15 3 x _____ = 15

15 ÷ 3 = _____ 15 ÷ 5 = _____

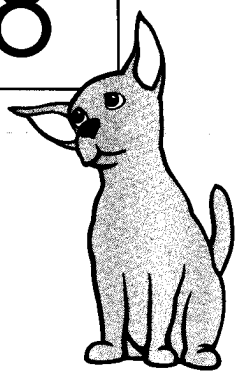


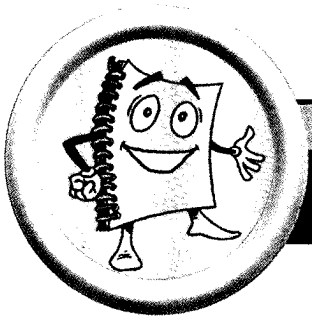
Look at the number board.

Color the boxes with numbers that can be divided by 3.

What alphabet do you see?

11	16	25	29	4
7	15	1	20	13
26	9	2	14	28
23	24	10	5	19
17	30	6	21	8





REVISION 2

Exercise 1

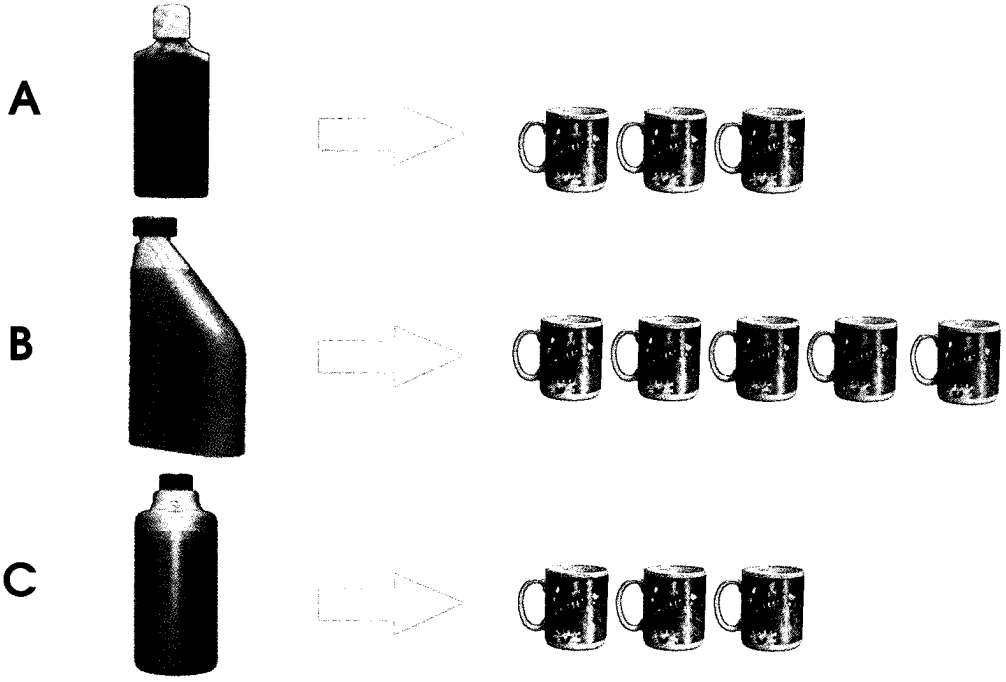
1. Fill in the blanks with 'cm' or 'm'.

a) My thumb is about 4 ____ long.

b) A matchbox is about 7____ long.

c) The height of a door is about 2____ .

2. Fill in the blanks.



a) Containers ____and ____have the same volume.

b) Container B has ____ cupfuls more volume than container C.

Exercise 2

3. Match.

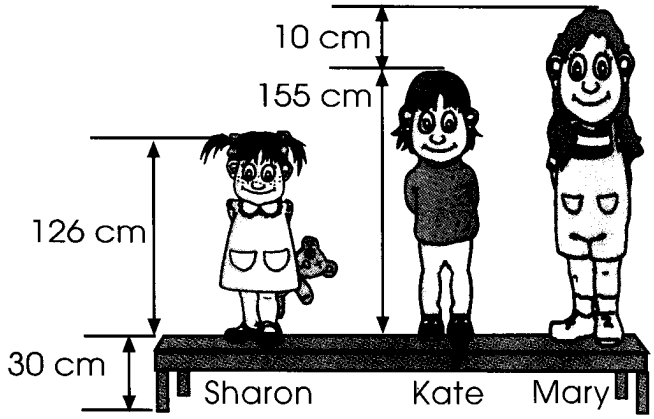
2 + 2 + 2 + 2	3 twos
3 × 2	4 groups of twos
5 + 5 + 5	three fives

4. Fill in the blanks.

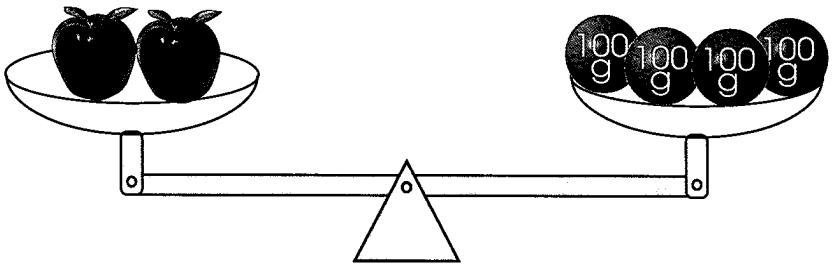
Sharon is _____ cm tall.

Kate is _____ cm tall.

Mary is _____ cm tall.



5.



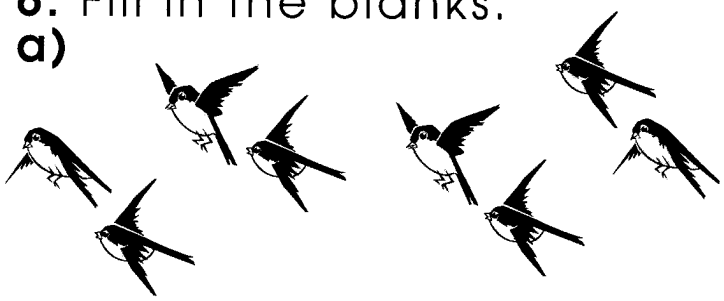
The mass of 1 ball = _____ g

The mass of 2 apples = _____ g

The mass of 3 balls = _____ g

6. Fill in the blanks.

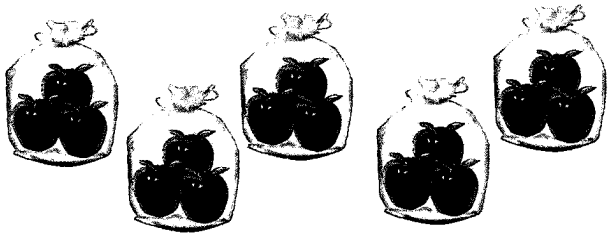
a)



÷ =

There are _____ pairs of birds.

b)



× =

There are _____ apples altogether.

Exercise 3

7. Mary and June shared 14 sweets equally. How many sweets did each girl get?

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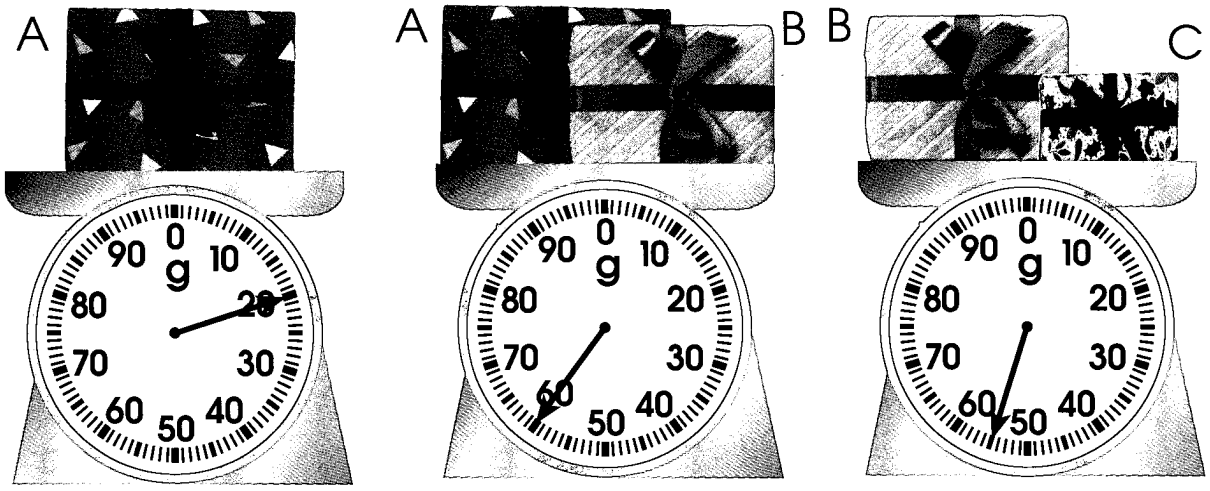
Each girl got _____ sweets.

8. Mei Ling, Joshua and Dave had 6 stamps each. How many stamps did they have altogether?

=

They had _____ stamps altogether.

9.

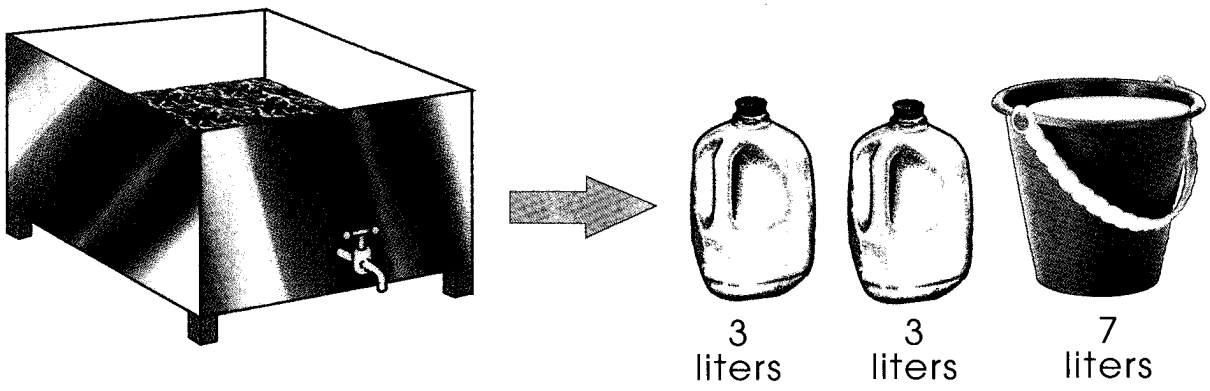


The mass of parcel A is g.

The mass of parcel B is − = g.

The mass of parcel C is − = g.

10.



The volume of the tank is

7 + + = liters